

Creating evidence-based guidelines for healthy eating
educational campaigns aimed at low-income South
Africans: a case study of Grahamstown

THESIS

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Abstract

Through a literature review and qualitative research, this study explores what a media-centric nutritional intervention needs to include in order to be effective amongst those whose health is most impacted by poor nutrition – poorer and mostly black South Africans. The study sketches the current nutritional landscape of South Africa, and draws on both Behaviour Change Communication and Media Effect theories to hypothesise how a campaign might be devised to change popular understandings of the relationship between health and nutrition, and inspire some change in food consumption behaviours and choices. The study explores the key factors that drive nutritional behaviours (including the environmental constraint of cost, the peer pressure and socialisation of food, and the desire for knowledge and change) and explores how media-based interventions could be more effective. To do this, this study creates three layers of an idealised and hypothetical “Super 7” fruit and vegetable consumption promotion campaign. From this data, and the insights developed, new guidelines for possible future nutritional education campaigns are suggested and developed.

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Glossary

ABCs: Apples, Bananas, Carrot

ASF: Animal Source Foods

BCC: Behaviour Change Communication

CSR: Corporate Social Responsibility

DDS: Dietary Diversity Score

DoH: Department of Health

EE: Entertainment-Education (Edutainment)

FAO: Food and Agriculture Organization of the United Nations

FBDGs: Food-Based Dietary Guidelines

GHI: Global Hunger Index

HAES: Health at Every Size

HBM: Health Belief Model

HSRC: Human Sciences Research Council

IBM: Integrated Behavioural Model

IFAD: International Fund for Agricultural Development

IFBA: International Food and Beverage Alliance

KAP: Knowledge, Attitudes and Practices

LMIC: Low- to Middle-Income Countries

MDGs: Millennium Development Goals

NCDs: Non-Communicable Diseases

SANHANES-1: South African National Health and Nutrition Examination Survey 2014

SCC: Social Change Communication

SCT: Social Cognitive Theory

SDH: Social Determinants of Health

SEM: Social Ecological Model

SES: Socio-Economic Status

SPOTS: Sweet Potatoes, Onions, Tomatoes, Spinach

SSBs: Sugar-Sweetened Beverages

TFP: Thrifty Food Plan

TPB: Theory of Planned Behaviour

TRA: Theory of Reasoned Action

UMSC: University of Miami's School of Communication

UNICEF: United Nations Children's Fund

WFP: World Food Programme

WFS: World Food Summit

WHO: World Health Organisation

CHAPTER ONE:

Introduction

The science of nutrition is multifaceted and complex, drawing on and impacting many medical fields. Human behaviour too, is shaped by a wide range of factors. What scientists discover and what the public knows, understands, and act upon, is rarely in sync. This study focuses on the actual and potential role of media interventions in promoting healthier nutritional choices. It does this through examining the literature on current key deficiencies in South African diets and the main social determinants that cause these deficiencies – especially those that most impact on the poor. The study attempts to get a sense of what mostly poor black South Africans know about the relationship between their health and nutrition, and to what extent consumption patterns and food choices relate to this knowledge. By drawing upon this understanding of what South Africans know, and some data about what actual consumption and food intake behaviour are (generated by focus group discussions), the study suggests what the core elements of a hypothetical health promotion campaign might need to be in order to achieve an improvement in nutritional knowledge and healthy eating. The study does this by developing, as an illustrative example, a hypothetical campaign that encourages the greater consumption of various fruits and vegetables. Dubbed the *Super 7 Campaign*, this illustrative example is suggestive of what kind of media campaigns – and other components – may be needed to increase the uptake of greater variety and quantity of fruits and vegetables (and how this might be related to a more healthy diet overall).

This study hopes to make a contribution towards thinking about what an effective South African campaign about nutrition could and should contain, with a particular focus on the media elements of such a campaign. Weighing insights from other campaigns against data from field work in Grahamstown, and bringing together elements of theory from both Media Studies and Behaviour Change Communication, the study hopes to suggest what components of a campaign are core or vital to having a reasonable prospect of improving nutritional knowledge, shifting certain attitudes in food consumption, and, hopefully, inspiring new actions with a view to shifting longer-term behaviours with regards to South African eating habits.

1.1. Background and Context

Both a shortage of food and/or a lack of dietary variety can cause malnutrition, but excess consumption can also be viewed as a form of malnutrition that contributes towards cardiovascular diseases, diabetes, cancer, degenerative eye diseases, obesity and dental caries (Wilkinson & Marmot, 2003: 26). Food poverty can coexist in tandem with overconsumption – and this is particularly true of countries with extreme income inequality, as is the case with South Africa (Deghaye et al 2014; Hakizimana & Geyer 2014).

South Africa is not alone in this: according to the Global Nutrition Report 2014, there are few countries in the world that are free from malnutrition (International Food Policy Research Institute, 2014: 22). Indeed, many countries experience multiple burdens of malnutrition (International Food Policy Research Institute, 2014: 22).

These multiple burdens of malnutrition, according to the Global Nutrition Report, include stunting, anaemia, adult obesity, and a large range of other illnesses (International Food Policy Research Institute, 2014: 25). Indeed, the South African National Health And Nutrition Examination Survey 2014 (SANHANES-1) shows that there is a persistently high prevalence of under-nutrition, micronutrient deficiencies, as well as food insecurity and hunger in South Africa and, concomitantly, high levels of overweight and obesity, especially amongst women (Shisana et al, 2014: 43). According to SANHANES-1, 12.8% of adult men and 4.2% of adult women are underweight (a BMI¹ of < 18.5) while 20.1% of males and 24.8% of females are overweight (a BMI of 25-29.9). More alarmingly, 10.6% of males and 39.2% of females are obese (a BMI of over 30) (Shisana et al, 2014: 138-9).

Arguably, over the past few decades, this relative weighting of under-nourishment and ‘over’-nourishment has shifted: there are now fewer people underweight, and a growing number of people who, at least when measured using BMI, are now overweight or obese.

Individuals’ understandings of what it means to be nutritionally healthy is influenced by a number of factors – including socio-economic status, education, cultural background, age, gender, race and personal experiences/knowledge (Puoane, 2009: 92; Bradshaw, 2008;

¹ BMI is “defined as a person’s weight in kilograms divided by the square of his height in meters (kg/m²)” (WHO,

Dahlgren & Whitehead, 1991). Even basic perceptions of what ‘health’ means differs between social groups. For example, in many communities, being plump signifies good health while in others, it can be seen as a lack of well-being or a precursor of illness (Puoane, 2009: 92).

As will be explored in Chapter 2 in particular, SANHANES-1, examines dietary knowledge and behaviour within South Africa in considerable detail. This study surveyed individuals of all ages living in South Africa, and was large and representative: some 25 532 individuals completed a questionnaire-based interview and some 12 025 also underwent blood and other medical tests (Shisana et al, 2014: 64). Information from SANHANES-1 can be drawn upon to determine, at least at a national level, which areas of health and nutrition knowledge and understanding might most need health promotion and journalistic interventions. In conclusion to their findings (which will be discussed later in this study), the Human Sciences Research Council suggest, with some foreboding, that:

“South Africans consume a diet of marginal dietary diversity, are in need of better nutrition knowledge and dietary diversification, they like eating out, they cannot correctly identify a normal weight, they need to consider their health more frequently when they buy their food, and be more aware of the risk factors they may carry in relation to NCDs [non-communicable diseases]” (Shisana et al, 2014: 350).

SANHANES-1 mostly gives a description of the current health and nutrition landscape in South Africa and arguably does not examine the intricate interconnected factors that affect individuals’ nutritional knowledge, attitudes and behaviours. As many studies have noted, NCDs are closely related to ‘lifestyle’ factors, which in turn are “significantly shaped by factors embedded in the social (working and living) environment and structured by more distal economic and political factors” (Puoane et al, 2013: 117). This study will explore these factors, going beyond the strictures of SANHANES-1.

On the structural level, poverty is obviously a key factor that needs to be understood in terms of individuals’ level of knowledge and their purchasing power when it comes to food. Many studies explore the cost of food (Drimi & McLachlan, 2009; Harding & Lovenheim, 2014; Meerman & Aphane, 2012; Jetter et al, 2006; Cassady et al, 2007; Muzigaba & Puoane, 2013; Puoane & Tsolekile, 2008; etc.), the prevalence, on the supply side, of capitalist

relations of production, and the rise of highly concentrated, multinational ‘Big Food’ (Alexander et al, 2011; Cassim, 2010; Igumbor et al, 2013; Stuckler & Nestle, 2012; Steyn & Labadarios, 2011; Moss, 2013; Puoane & Mciza, 2009; etc.), and the implementation of food and nutritional policies in the country (Sharma et al, 2010; South African Department of Health, 2013; Puoane et al, 2013; Steyn et al, 2013; South African Department of Health, 2011; South African Department of Health, 2014; Manyema et al, 2014; Green, 2014; etc.). The intersection between poverty, food production systems (and companies), and social and political policies are arguably the most important ‘structural’ factors shaping nutrition knowledge, capacity and consumption.

Many studies suggest there is a *social gradient* of diet quality that contribute to health inequalities and that this gradient is a result of social and economic conditions (Wilkinson & Marmot, 2003: 26). This means that in a society, the different socio-economic groups have different access to sources of nutrients, where, put simplistically, people on low incomes are least able to eat well (Wilkinson & Marmot, 2003: 26). Indeed, even though these social and economic factors are complex, a “poor quality diet, physical inactivity, and smoking are a lethal triad for the lower social classes, leading to an intergenerational spiral of ill health and handicap” (James et al, 1997: 1545). Other studies come to similar conclusions: Bradshaw’s overview study concluded that “not only is poor health strongly associated with low socio-economic position, but there is growing evidence that inequalities play a role in poor health outcomes” (Bradshaw, 2008: 53). This is explored further in Chapter 2.

On a socio-cultural level, education and social integration have also been identified as major factors behind individuals’ nutritional knowledge and behaviours (Darmon & Drewnowski, 2008; Viswanath & Bond, 2007; Wilkinson & Marmot, 2003; Puoane et al, 2013; Shisana et al, 2014; Muzigaba & Puoane, 2013; Puoane & Mciza, 2009; Puoane et al, 2005b; Puoane et al, 2010; Puoane & Tsolekile, 2008; etc.). Educational levels, the quality of that education, and the amount of ‘science’ and/or nutritional information imparted during that education, are linked to knowledge, attitude and behaviour with regards to nutrition. Given the on-going systemic crisis in SA schools, for example, it is plausible that this has some longer term impacts on health knowledge and behaviours.

What is the media’s role in shaping individuals’ nutritional behaviours? As Igumbor et al (2013) and others suggest, the key role of media is, in most countries, for advertising and

marketing by large commercial entities that dominate the food and beverage environment ('Big Food'). These companies, including, for example, behemoths such as PepsiCo, Coca Cola, Tiger Brands Ltd, Unilever Group, Nestle SA, etc., produce mostly packaged foods that are often high in sugar, salt and unhealthy fats (Igumbor et al, 2013). The marketing and advertising strategies are primarily used to increase the availability, affordability, and acceptability of Big Food (Igumbor et al, 2013: 1).

Opposed to this is the deliberate use of the media to combat misinformation and aid health promotion through the use of pro-social, evidence-based media-centric campaigns. Government-sponsored media campaigns promoting healthy eating and lifestyles "widely used to expose high proportions of large populations to messages through routine uses of existing media, such as television, radio and newspapers" (Wakefield et al, 2010: 1261).

To stand a chance of changing behaviour, given the resources used by 'Big Food' to market their products, mass media campaigns that promote healthy behaviours need to also evoke emotional responses, as well as appeal to logic and reason. (Wakefield et al, 2010: 1262). Campaigns often use mass media. However, more focussed media, social mobilisation, and face-to-face interventions are often needed to shift behaviours. Wakefield et al (2010) argue that there should almost always be multidimensional approaches to health communication campaigns that don't only focus on media-centric tactics:

"Changes in health behaviour might be maximised by complementary policy decisions that support opportunities to change, provide disincentives for not changing, and challenge or restrict competing marketing."
(Wakefield et al, 2010: 1268).

Such campaigns also need to take cognisance of individuals' context: the communities they live in and their socio-economic status, among other factors. As Muzigaba (2013: 66) points out, "public health efforts geared towards promoting healthy food consumption behaviours ... may have little relevance in settings where there is poor access to affordable healthy foods and such, nutrition education is likely to have little effect".

Based on this, and as will be explored in this study, any campaign with a media component aimed at changing an aspect of health-related behaviours, such as nutrition, should be

subjected to careful planning and in-depth research to identify target audiences and the various factors that influence these individuals' health-related behaviours. Ideally, this should also include other interventions at a policy level, and have some social mobilisation and face-to-face component. In the current digital, mobile age, it is increasingly important that they also have social media and mobile components. These themes will be returned to at various points in the study.

Even with all these elements in place, behaviour change is notoriously difficult to achieve at a large scale. Food choices and consumption patterns seem particularly resistant to change. Animating this study is the question: to be effective, what does a media-based (but multi-faceted) nutrition intervention aimed at improving the intake of healthy foods and reducing the intake of unhealthy foods among poor black South Africans need to *be* and need to *do*? How important are social determinants – including levels of urbanisation, education, economic status and standing, among others, and how much do campaigns have to factor these determinants in? How 'broad' can campaigns be (appealing to the largest number of people) while still working for specific categories of people, or specific cultural or geographically-defined groups?

1.2. Theoretical Framework

The study will draw on both elements of the Media Effects tradition within Media Studies and a number of key strands of Behaviour Change Communications theory and, in particular, the synthesis proposed by the Integrated Behavioural Model (IBM)

Drawing on both helps this study look at the impact of media on both individuals and communities, and individuals *within* communities, i.e. how the social and individual level interact. From Media Theory, specific insights from Knowledge-gap theory and Agenda setting theory are drawn upon. In terms of BCC, although this study will draw from various theories and literature, the primary theoretical framework that will be used in order to examine and analyse the research findings is that of the Integrated Behavioural Model (IBM). The IBM model draws on and attempts to integrate aspects of other health behaviour theories, including the Social Cognitive Theory (SCT), the Theory of Reasoned Action (TRA), the Theory of Planned Behaviour (TPB), and the Health Belief Model (HBM) and these antecedents are briefly explored as a way of better understanding the IBM model's attempt at

a synthesis. IBM posits that individuals' behaviour change can be analysed through careful consideration of five primary factors – the intention to perform the behaviour, knowledge and skills required to perform the behaviour, the salience of the behaviour (to individuals and communities), environmental constraints, and established habits (Montaño & Kasprzyk, 2008: 77). Of these five, IBM suggests that the *intention* to perform a behaviour is the most important factor and that this intention is shaped by an individuals' attitudes, perceived norms, and sense of personal agency surrounding the behaviour (Montaño & Kasprzyk, 2008: 77).

1.3. Method and Methodology: Field Data

In this study, qualitative research methods have been used as the primary goal to understand individuals' dietary patterns. In particular, focus group discussions have been utilised to understand what goes into individuals' dietary choices and to explore, in particular, whether the media has any effect on their choices.

As part of this qualitative approach, this study uses principles from the ethnographic framework. This is primarily due to the fact that this thesis attempts to ask questions about why people eat the way they do according to their values, beliefs, and cultural practices. Ethnography is understood as “the process and product of describing and interpreting cultural behaviour” (Schwandt In Botma et al, 2010: 190). Although this study primarily draws on isiXhosa participants, and their ethnic background is important, the key initial focus for this study is that these individuals are relatively poor, and live in a peri-urban setting. However, as the research progressed, it was clear that certain cultural specificities, relating to culture, also impact on how people see diet and nutrition.

Ethnography, Lindloff suggests, describes “all relevant aspects of a culture's material existence, social system, and collective beliefs and experiences” (Lindloff, 1995: 20). Therefore, as Botma et al (2010: 190) claims, ethnography attempts to understand human behaviours from what can be seen as an ‘insider's’ perspective. It is through the participation in the subjects' settings and understanding their personal experiences that the research can gain insight into the people/subject involved (Botma et al, 2010: 190-1). To do this, a researcher must build rapport, credibility and trust with the community (Botma et al, 2010: 191).

Ethnographic analysis ideally goes beyond description to analyse or explain aspects of social patterns or observed conduct (Botma et al, 2010: 191). This study uses core ethnographic tools including semi-structured interviews, focus groups, and some limited situational observation.

This study also includes case study research as it involves focus groups from poor isiXhosa men and women from the highly context specific Grahamstown, while also involving the use of a hypothetical campaign that would be aimed at people in this specific context. Case study research is defined as:

“An empirical inquiry that investigates a contemporary phenomenon in depth and within its real-life context, especially when the boundaries between phenomenon and context are not clearly evident.”

(Yin In Farquhar, 2012: 5)

Therefore, this thesis in particular attempts to investigate the contemporary phenomenon of nutrition consumption and nutrition campaigns through the examination of the real-life situation in Grahamstown and the hypothetical context of the Super 7 Campaign. Case study research is also seen as an empirical investigation that is based on knowledge and experience, thus involving the collection and analysis of data (Farquhar, 2012: 6). The collection of data in this particular study is done through focus groups that concentrate on the specific context of nutrition in Grahamstown, while the analysis of data is done through sound theoretical models that draw meaning from this particular case study.

At this point, it is also important to note that, although this study is primarily qualitative and draws from ethnographic principles, it does draw on secondary quantitative research, particularly the SANHANES-1 study. Participants in this study were also asked a set of basic, mostly demographic questions about their lives and their dietary habits. This information, although not gathered in a rigorous and statistically viable manner, allow some perspectives that are useful in terms of framing the qualitative data gathered through focus groups.

1.3.1. Data gathering methods

This study uses various interviewing techniques (including semi-structured interviews, focus groups, and observational practices) to understand the factors influencing food-related behaviour in the context of a population represented in this case study. Focus groups were the primary method. A focus group is a “carefully planned group interview that involves a collective discussion around a topic determined by the researcher” (Botma et al, 2010: 210). According to Kruger and Casey, focus groups should be used when:

“the researcher is looking for a range of ideas or feelings; is trying to understand differences between groups or categories of people; wants to uncover factors that influence opinions, behaviour or motivation; wants ideas to emerge from the group; wants to pilot test ideas, materials or plans; needs information to shed light on quantitative data already collected; or places a high value on capturing the comments or language used by the participants.”

(Kruger and Casey In Botma et al, 2010: 210-1)

Because this study attempts to understand the behaviours and perceptions surrounding nutrition, focus groups were suggested as ideal for this kind of data collection

Conducted before each focus group formally began, participants were given a demographic survey to fill in which asked basic questions about such topics as their age and socioeconomic status, as well as some information on their behaviours and perceptions with regards to nutrition and obesity. These surveys primarily function as supplementary information to the focus groups and are used for descriptive purposes when describing the population under study. Although the mostly demographic survey implemented does not strictly follow the quantitative research method, it does provide basic and demographic information from the focus group participants.

The final data collection method was a form of participatory observation – referred to in this study as limited situational observation. According to Botma et al (2010: 215), during participatory observation, the researcher attempts to observe the daily lives and routines of the participants, while at the same time avoiding disrupting the situations being observed. In this study, customers shopping in 11 local spaza shops were observed in order to obtain some basic level of information about the food-purchasing patterns of individuals living in Grahamstown’s townships.

1.3.1.1. Phase One: Semi-Structured Interviews

This study was initially part of a broader project with the University of Miami. This project wanted to understand obesity in South Africa, using Grahamstown as a case study. Three contrasting areas in Grahamstown were initially identified in order to understand commonalities that can be used to develop a holistically South African obesity intervention. Through nine semi-structured interviews with nurses in charge of NCDs from every clinic and hospital in Grahamstown, the final areas chosen included the Joza location, the township area close to the centre of Grahamstown (Fingo Village), and the suburban middle-class area of West Hill. These areas were chosen as they would have provided a good cross-section of Grahamstown in terms of class, race and ethnicity:

- The Joza population is mostly poor and isiXhosa speaking.
- Fingo Village has more settled residents (it is a much older area of Grahamstown) and slightly better socio-economic conditions.
- The suburban middle-class area of West Hill was selected for the UMSC study as the majority of individuals living in West Hill are middle- to upper-class. Most are white.

1.3.1.2. Phase Two: First Focus Groups

The University of Miami were not able to continue their involvement in the project after the initial set of interviews were conducted. This also allowed the study to reconsider the initial objectives – understanding obesity – and focus more on nutritional literacy media campaigns, and the relationship between nutritional knowledge and behaviour to either obesity or underweight, and to health more generally.

The second phase of this study involved a series of six focus groups with men and women of varying ages sourced from the three above areas. Due to practical and ethical concerns, community partners were chosen to act as facilitators and translators for the focus groups, while at the same time participating in the sampling process. Four community partners – two men and two women from the Grahamstown community – were chosen to aid the researcher in conducting and facilitating the isiXhosa focus groups. This was also primarily due to the fact that the first two areas in the study had a population of primarily isiXhosa speakers.

These community partners would therefore not only make the participants feel comfortable in the focus groups, but they would also allow for the participants to express themselves comfortably in their home language. Community partners were chosen due to their previous experiences with dialogue work in the Grahamstown community and they were trained in focus group facilitation with the use of a discussion guide².

Each focus group was made up of six to nine men or women with four groups taking place in Joza and two groups taking place in Fingo Village. A snowball/network sampling technique was implemented. The snowball sampling method is where the researcher finds a few initial participants, and those participants can then be used to find similar individuals that the initial participants may know of and meet the eligibility criteria (Botma et al, 2010: 201-2). In this particular study, the community partners/facilitators acted as the initial points of contact, as they were members of the community from which the final focus group participants were drawn from. Although the snowballing technique often generates participants who have similar beliefs and behaviours, the community partners were encouraged to use their social networks to find a variety of people who all differ from one another while still fitting into the sample criteria.

The groups were divided between men and women (three groups men, three groups women), the focus groups were also split up between ages with four groups having ‘young’ participants (aged 34 and below), and two groups having older participants (aged 35 and above). These were the 6 focus groups:

- First Focus Group: Women aged 35 and above from the Joza location
- Second Focus Group: Men aged 35 and above from the Joza location
- Third Focus Group: Women aged 34 and younger from the Joza location
- Fourth Focus Group: Men aged 34 and younger from the Joza location

² Before the official focus groups began, the community partners were trained with two practice focus groups that were conducted with six to nine men and six to nine women from Rhodes University. These individuals were students at the university and were used not only to aid in the community partner’s training, but to test out the original discussion guide that was co-developed with UMSC. Due to the fact that the participants were not resource-poor and from various areas around South Africa, these focus groups do not form the main part of my thesis. However, aspects of them will be drawn on in order to highlight interesting factors about the study’s main focus groups.

- Fifth Focus Group: Women aged 34 and younger from Fingo Village
- Sixth Focus Group: Men aged 34 and younger from Fingo Village

The participants of the focus groups were assured of anonymity. The discussions were recorded, translated and transcribed. The reason for this recording is due to the fact that it ensures accuracy while allowing the researcher/facilitator to concentrate on the interview process in the focus groups (Botma et al, 2010: 214). Participants were made aware of the recording before the focus groups commenced through a detailed consent form³ that was verbally explained to them while also being available for them to read and, thereafter, sign. To further ensure anonymity, the data from the voice recordings of the focus groups are only available as written transcripts. With the aid of the community partners, these focus groups were translated and transcribed.

The reason for only two focus groups being conducted in the Fingo area was due to a further reconsideration of the eligibility criteria as explained in the next section.

1.3.1.3. Phase Three: Additional Focus Groups

Originally, there were meant to be twelve focus groups taking place in the three areas outlined above. However, after the study was refocused on healthy eating rather than obesity, it became clear that an additional sample population would be useful. Along with this, a hypothetical nutrition campaign⁴ was designed and discussed in the focus groups in order to better understand the potential effect that this hypothetical campaign could have on the target population. For more details on this campaign, please refer to Appendix A.

After looking at the data from the geographically-defined focus groups, it was also clear it would be useful to have some additional groups, based not on geography, but on whether the participants were parents or students. This was primarily due to 1) the insight that parents can give with regards to providing food for their families, and 2) the comprehensive insight that can be obtained from young students. Four final focus groups of poor, isiXhosa parents and students were therefore assembled:

³ See Appendix F

⁴ The Super Seven Campaign focusing on increasing the consumption of fruits and vegetables. See Appendix A.

- Seventh Focus Group: Female parents
- Eighth Focus Group: Female students
- Ninth Focus Group: Male students
- Tenth Focus Group: Male parents

1.3.1.4. Phase Four: Limited Situation Observation

This phase was conducted after the data from the focus groups was examined and analysed. The aim of this phase was mainly to observe the spaza shop environment in order to determine the food-purchasing behaviour of the customers. Interviews were also conducted with the spaza shop owners/tellers in order to determine how often the Super Seven foods were made available, as well as to find out their quality and cost. Sometimes, customers were also asked about their food purchases from the spaza shops. Field notes and recorded interviews are the main method of data collection in this instance. Eleven spaza shops were selected overall with roughly an hour of observation taking place at each shop.

1.3.1.5. Data Analysis: Layers of a Hypothetical Campaign

In addition to drawing on secondary literature, BBC and Media Effects theory, and field work, this study generated some insights by creating a fruit and vegetable promotion campaign, dubbed the Super 7 Campaign - which had initially been devised by the supervisor of this study, Harry Dugmore.

This thesis creates the Super 7 in three 'layers' – the first in response to an overview of what is known about food consumption of South Africans in general, and a discussion of the social determinants of this dietary pattern. This is drawn from the literature review in Chapter Two and acts as a basis of knowledge on the current climate of nutrition in South Africa and how it would affect this hypothetical campaign.

The second layer is in response to consideration of media effects theories, BCC, and health promotion practices. This is drawn from Chapter Three where the initial knowledge gathered

during the overview process is further enhanced and adds more theoretical knowledge to the Super 7 Campaign.

A final layer and revision of the campaign incorporates and responds to the field work/focus groups conducted in Grahamstown. The data in these focus groups were analysed using the Integrated Behavioural Model (IBM), which is discussed in Chapter Three. The model takes into account environmental, socio-cultural, and individual behavioural aspects with which the data could be analysed. The data was then methodically and carefully analysed to find key themes that fit into the Grahamstown case study and could be utilised to further enhance the hypothetical Super 7 Campaign.

Through these combined layers of this hypothetical campaign, it is hoped that key insights will be generated and utilised in future nutritional campaigns.

1.4. Limitations of the Study

With any study there are various limitations that inhibit the results to some degree. In terms of this study, the limitations are as follows:

- **Use of language.** The fact that the first set of focus groups are conducted in isiXhosa and then translated means that something could get lost in the translation. However, this has been counteracted to some degree by the fact that the isiXhosa facilitators were used in the translation process, allowing them to make comments and notes on the meanings behind certain Xhosa phrases. With regards to the second set of focus groups, the participants were selected in terms of their ability to express themselves in English – however, the community partners were still present in order to do any immediate translating.
- **Discussion Guide.** During the course of the focus groups, the discussion guides had to go through various transformations. This was due to the fact that the original guide proved to be difficult to translate for clear understanding by the lower-SES participants. Therefore, new discussion guides were developed in order to simplify the questions while still allowing for in-depth answers to be explored. As these were

mostly changes of language, the main discussions and therefore data generated by the focus groups remained, across the project's fieldwork, comparable.

1.5. Ethical Considerations

The study was granted permission by the Humanities Faculty of Rhodes University ethics committee⁵.

Participants were made aware of the fact that they would be recorded, that they would remain anonymous, and that they could refuse to answer any questions and could drop out at any time – no questions asked. Focus group participants were asked to sign a consent form⁶ before partaking in the focus groups. The participants were taken slowly through the consent form in their own language as well as in English. The names of the participants will also change in the study to protect their identities.

1.6. Structure of the Thesis

Following from Chapter One, the structure of this thesis is as follows:

Chapter Two: The Nutritional Landscape

Drawing predominantly from SANHANES-1, but also from other literature, this chapter first examines the current state of South Africans' nutritional intake and nutritional knowledge. The chapter examines the primary factors that determine this nutritional context: in other words, it attempts to analyse why the current South African nutritional landscape is what it is. The chapter draws on these various factors and analyses their implications for not only the idealised 'Super 7' campaign specifically, but also for other potential campaigns.

Chapter Three: Media Effects and Behaviour Change Communication

This chapter draws on various theories from both Media Studies and Behaviour Change Communication traditions and lineages. Building on this theory, and the discussions in Chapter Two about the factors impacting on the nutritional status and knowledge of South Africans, Chapter Three explores what kind of media-centric campaigns might be able to do

⁵ Appendix D

⁶ Appendix F

to improve the nutritional status and knowledge in South Africa and help with changing actual health behaviours.

Chapter Four: Validating Data and Experience via a Grahamstown Case Study

This chapter will primarily focus on making sense and analysing the data from the various focus groups run in Grahamstown in 2014. Drawing on the theory outlined in Chapter 3, this chapter identifies three themes: The influence of peers on individual thinking about food, and food choices, the impact of the cost of food (and the perceived high cost of ‘healthy’ food) and influence of knowledge of risk (to health) and related desire to learn more and possibly change behaviour. The chapter concludes by examining the input that participants have for the proposed Super 7 Campaign.

Chapter Five: Conclusions and Recommendations

The final chapter will draw on the field data and discussions from Chapter 4, and the earlier literature reviews, to recalibrate the idealist “Super 7 Campaign”. From this, this chapter will make recommendations – and suggest guidelines – for media based nutrition-orientated public health interventions.

Ultimately, the goal of this research is to contribute to a better understanding of how, specifically, poor, black South Africans obtain information about nutrition and healthy eating, how they interpret and make meaning from this information, and how, if at all, they apply this information to their daily lives. Although the study creates and uses a hypothetical campaign in order to gauge certain answers from those living in the Makana context, the study will hopefully be able to make some points that are generalizable for such interventions in other areas of South Africa. Because it examines the importance of local knowledge systems (including cultural knowledge, medical knowledge, and general health knowledge) in providing the framework for any health promotion campaign, it is able to at least tentatively answer questions about whether a media intervention on nutrition could make a difference, and what those differences might look like and how such differences could be measured.

CHAPTER TWO:

Nutrition and Nutritional Knowledge in South Africa

2.1. Introduction

This chapter has three elements: first, it describes the current state of South Africans' nutrition and makes some global comparisons, mostly drawing on material from SANHANES-1. Second, this chapter identifies and analyses the primary factors that have shaped this nutritional context locally. This will be done through the discussion of a series of foundational and supplementary determinants that have been implicated in shaping South Africans' food intake. Factors include the cost of food, the dominance of 'Big Food', the importance of education, South Africa's relative lack of social integration (class and racial stratification) and what implications this might have on food consumption. The chapter will also look at some issues around the social construction of body image and obesity in South Africa. Thirdly, this chapter examines those actions aimed at improving health knowledge, and actual health, via nutrition. This will be done through the critique of current government policy concerning nutrition. At the end of the chapter, there will be a brief outline as an initial response to all these factors: a first 'layer' of the hypothesised campaign 'Super 7'. This is done before additional considerations of theory (Chapter 3) and field data from focus groups (Chapter 4) are added to modify the campaign. .

2.2. Locating Nutrition in the Context of Health

Good nutrition⁷ involves consuming a diet that contains the necessary nutrients, in sufficient quantities, for healthy living and growth. Nutritious diets prevent malnutrition, as well as Non-Communicable Diseases (NCDs), including obesity, diabetes, heart disease, and cancer (WHO, 2015b) and also mitigate the impact of communicable diseases. However, *unhealthy*⁸ diets, along with lack of physical activity, have been identified as one of the leading global risk factors to health (WHO, 2015b). Indeed, the World Health Organisation (WHO) claims that, particularly in developing countries, there is a double burden of malnutrition – including

⁷ Nutrition is defined as “the process by which living organisms take in and use food for the maintenance of life, growth and the functioning of organs and tissues” (Bender, 2009: 384).

⁸ It is important to note here that there is contestation over what healthy and unhealthy diets consist of (Scrinis, 2013; Walsh 2014; Scrinis, 2008; Nestle, 2007). This chapter will explore some of the official guidelines for healthy diets in South Africa while also briefly examining some new and controversial ideas that subvert these guidelines.

both under- and over-nutrition (WHO, 2012) and this double burden's impact is increasing rapidly.⁹

Malnutrition, defined as the “disturbance of form or function arising from deficiency or excess of one or more nutrients” (Bender, 2009: 337), is seen as a result of improper diets and lack of access to highly nutritious foods (WHO, 2014c). As the above conceptualisation suggests, there are two forms of malnutrition – both under-nutrition and over-nutrition. Under-nutrition, which is the deficiency of correct nutrients contributes to about one third of all child death according to the World Health Organisation (WHO, 2012). At the same time, ‘over nutrition’ has led to growing rates of obesity and overweight globally, which is also directly linked to a rise in NCDs (WHO, 2012).

South Africa has long been described as having a quadruple burden of disease, including “diseases and conditions related to poverty and underdevelopment, chronic disease, injuries, and HIV and AIDS” (Bradshaw, 2008: 51). In this quadruple burden of disease paradigm, Non-Communicable Diseases (NCDs), are a growing proportion of both national morbidity and mortality. Globally, WHO figures show that NCD mortality is running at about 38 million people per year, each year and that nearly 28 million of these deaths occur in low- and middle-income countries (LMICs) (WHO, 2015c). This grouping includes countries such as South Africa. Already in 2008, NCDs contribution to overall mortality in South Africa was suggested to be at least 30% (South African Department of Health, 2013: 17).

Malnutrition, by contrast is an underlying cause of death in 64 per cent of children under the age of five in South Africa (UNICEF, 2013). According to the United Nations Development Programme, South Africa confronts a paradoxical nutritional reality: a third of children under the age of five in South Africa are stunted while at least 20% are considered to be overweight (UNDP, 2014: 186). These ‘opposite ends of the spectrum’ statistics, and the social conditions and behaviours that drive them, require careful analysis. Any behaviour modification campaign would, ideally, address both under- and over-nutrition.

⁹ However, unhealthy diets are just one part of the global NCD problem. The WHO identifies four main types of NCDs, namely cardiovascular diseases, cancers, chronic respiratory diseases and diabetes (WHO, 2015c). A large percentage of which, according to the WHO, is preventable through the reduction of four main behavioural risk factors: tobacco use, physical inactivity, harmful use of alcohol and unhealthy diet (WHO, 2015c). These four behaviours therefore lead to four key metabolic/physiological changes that increase the risk of NCDs: raised blood pressure, overweight/obesity, hyperglycaemia and hyperlipidaemia (WHO, 2015c), all of which can also be attributed to poor diets.

2.3. Dietary Guidelines

Globally, a foundational form of intervention that governments put in place to combat poor nutrition are dietary guidelines. According to Voster et al, food-based dietary guidelines (FBDGs) are “short, positive, science-based messages that aim to change the eating behaviour of the general population towards more optimal diets that meet energy and nutrient requirements, while simultaneously helping to protect against the development of non-communicable diseases” (Vorster et al, 2013a: 5). Other programmes and plans of action are meant to be built around the core guidelines.

First published in 2001, the South African FBDGs were formally adopted by the Department of Health in 2003, and consisted of 11 guidelines (Vorster et al, 2013a: 6). Due to what was deemed to be rapid changes in both demographics and health patterns (including urbanisation, economic development, acculturation and modernisation in South Africa, along with new information about the relationships between dietary intakes and health), the 2003 FBDGs were revised in 2012 (Vorster et al, 2013a: 6-7). These FBDGs were carefully worded by the South African Department of Health and were also coupled with an illustrative food guide – showing people the food groups that should be eaten regularly (Vorster et al, 2013a: 7). These include:

1. Enjoy a variety of foods.
2. Be active!
3. Make starchy foods part of most meals.
4. Eat plenty of vegetables and fruit every day.
5. Eat dry beans, split peas, lentils and soya regularly.
6. Have milk, maas or yoghurt every day.
7. Fish, chicken, lean meat or eggs can be eaten daily.
8. Drink lots of clean, safe water.
9. Use fats sparingly. Choose vegetable oils, rather than hard fats.
10. Use sugar and foods and drinks high in sugar sparingly.

11. Use salt and food high in salt sparingly.

(Vorster et al, 2013a: 7).

The FBDGs were co-developed by the South African Department of Health and were intended to inform the public about balanced diets and healthy eating – thus motivating them to make the right choices and avoid malnutrition (Voster et al, 2013a: 9). But despite the attempts by the government to popularise these guidelines, the guidelines are not well known, nor has the advice they offer entered into popular consciousness, due to a number of constraints that are outlined by Voster et al. These constraints include, at least, the evolutionary nature of science on which the recommendations are based, the challenge of multiple communication channels and the costs of communication, and the multifaceted nature of the guidelines' consumers (Vorster et al, 2013a: 9).

The lack of impact of the guidelines is not unique to South Africa. But as SANHANES-1 shows, we have very particular nutritional health challenges.

2.4. The Current South African Nutritional Landscape

The South African National Health And Nutrition Examination Survey (SANHANES-1) was published in 2013 and attempted to assess the health and nutritional status of South Africans with respect to the prevalence of NCDs and certain risk factors (Shisana et al, 2014: 1). The study included individuals of all ages living in South Africa, drawing its population sample from every province and community, except those living in educational institutions, old-age homes, hospitals, homeless people, and uniformed-service barracks (Shisana et al, 2014: 1). The fieldwork, which was conducted in 2012, was ambitious in scope: some 25 532 individuals (with an impressive 92.6% interview response rate) completed a questionnaire-based interview and some 12 025 of the main sample also underwent weighing, blood and other medical tests (Shisana et al, 2014: 64). The results provide the best ever picture of the South African dietary landscape, levels of nutritional knowledge, behaviour patterns and evidence-based (i.e. laboratory standard) BMI ratios.

2.4.1. Dietary Intake

SANHANES-1 found that about one out of five respondents consumed a diet high in both saturated fat and sugar (18.3% and 19.7% respectively), and that one of four (25.6%) had a diet with low to extremely low vegetable and fruit consumption (Shisana et al, 2014: 348). With regards to fat and sugar, the distribution of these two items in both men and women reflected what the report describes as the “the classic picture of the nutrition transition and urbanisation” (Shisana et al, 2014: 174). This is due to the fact that the highest fat and sugar scores came from the youngest age groups, living in formal urban areas, and provinces that have high levels of urbanisation (Gauteng and Western Cape) (Shisana et al, 2014: 174).

With regards to fat in particular, previous studies have found that the total fat intake of South Africans is within the goal of $\leq 30\%$ of total energy, but the quality or type of fat in the diet requires attention (Smuts & Wolmarans, 2013: 87). Earlier studies conducted on South African women (Steyn & Nel, 2006) found that urban women had a total fat and saturated fat intake of 29.1% and 8.6% of energy intake, respectively (Shisana et al, 2014: 174).

Compared to the UK and the USA, South Africa has lower rates of fat intake as a study in the UK found that fat intake was 35% of the total energy intake, while in the USA, a fat intake of 33.7% was to be found (Shisana et al, 2014: 176). Therefore, South Africa does not only have a lower fat intake compared to some developed countries as the UK and the USA, but it is also lower than the 30% of total fat intake recommended by the WHO (Shisana et al, 2014: 176).

With regards to sugar, SANHANES-1 found that sugar intake amongst urban citizens was 10% of energy intake, while for rural citizens this figure was 6% (Shisana et al, 2014: 176). Previous studies have found that the intake of additional sugar is increasing steadily across the South African population (Temple & Steyn, 2013: 100). This is particularly seen with children as they typically consume approximately 40-60 g/day of sugar, possibly rising to as much as 100 g/day in adolescents. (Temple & Steyn, 2013: 100). Although there is less information regarding the sugar intake amongst adults before SANHANES-1, one particular study conducted amongst 1 010 black urban Capetonians found that men consumed 52 g/day, and women consumed from 38 g/day (oldest) to 51 g/day (youngest) (Temple & Steyn, 2013: 101). This is compared to international studies where children under the age of 16 in Scotland

were shown to have a mean sugar intake of 17.4%, while data from the USA show that sugar intake was 14.1% of energy intake in males and 14.5% in females (Shisana et al, 2014: 176). From this point of view, South Africa still has lower average sugar intake compared to other developed countries and is still in line with the WHO recommendation of sugar intake being less than 10% of the total energy intake (Shisana et al, 2014: 176). However, as stated above, the intake of added sugar seems to be increasing and, in some areas, increasing rapidly.

Fruit and vegetable intake amongst South Africans has also been recorded by SANHANES-1 as being particularly low (Shisana et al, 2014: 176). About 25.6% of South Africans had low fruit and vegetable consumption scores while 45.3% only had medium scores (Shisana et al, 2014: 175). The jump between the low scores of formal urban dwellers and informal urban dwellers is large (18.8% and 32.8% respectively), although these percentages are still lower than that of the rural areas (Shisana et al, 2014: 175). In terms of race, 28.3% of black Africans had low scores for fruit and vegetable intake (Shisana et al, 2014: 175). These findings reflect previous studies which show that the intake of fruit and vegetables amongst South Africans to be roughly 200g per day (Naude, 2013: 46). This is almost half of the recommendation made by the WHO of 400g per day. (Shisana et al, 2014: 176). Therefore, on a national, household, and individual level, the contribution of fruit and vegetables to the nutrients in the diets of South Africans is “remarkably low” (Naude, 2013: 46).

But, again, compared to other countries, the situation is not as dire as it seems, at least not comparatively. In the USA for example, fruit and vegetable consumption is higher in only 0.9% of American adolescents, 2.2% of American males and 3.5% of American females are meeting recommended fruit and vegetable requirements (Shisana et al, 2014: 177). This is compared to the 4.6% from the present SANHANES-1 (Shisana et al, 2014: 177).

Overall, compared to international statistics, South Africa does not compare poorly when it comes to nutrition. But many South Africans are not adhering to recommended levels of fat, sugar, and fruit and vegetable intake. A clear pattern of increasing overall average fat and sugar is observable, while fruit and vegetable intake remains about half of the required standard. South Africa is in a nutrition transition and there needs to be greater promoting of the consumption of fruits and vegetables and more discouraging of increased fat and sugar intake.

2.4.2. Dietary Diversity

Dietary diversity is defined as “the number of food groups or foods which are consumed over a specific period” (Steyn & Ochse, 2013: 13). The importance of having a diverse diet where a variety of foods are consumed is that it usually ensures an adequate intake of essential nutrients (Shisana et al, 2014: 167). A healthy diet, therefore, can be defined as consuming a diet that is diverse in healthy foods and contains sufficient water, energy, macronutrients and micronutrients (Steyn & Ochse, 2013: 13). Developing an understanding of dietary diversity can be used as a ‘proxy measure of the nutritional quality’ of a given population’s diet. It can also be used as a way of working out what access households have to food and their level of food security (Shisana et al, 2014: 167). In SANHANES-1, a 24-hour recall was used in order to determine individual’s dietary diversity. The foods that were recalled were placed into nine food groups and a dietary diversity score (DDS) was calculated by summing the number consumed of food groups (Shisana et al, 2014: 167). The results showed that two out of five participants (39.7%) consumed a diet low in dietary diversity (Shisana et al, 2014: 348). Informal urban participants also had a significantly higher percentage of people consuming a diet low in diversity (46.6%) compared to the formal urban counterpart (29.3%) (Shisana et al, 2014: 168). Black African participants had the lowest mean dietary score and the highest number of participants with low dietary diversity (44.9%) (Shisana et al, 2014: 167).

Two older studies conducted in South Africa¹⁰ had similar results as a cross-sectional study conducted in 2009 found that, in terms of ethnicity, black ethnic groups had the lowest mean DDS of 3.63 and constituted the highest percentage (50%) of individuals with a DDS of <4 (Steyn & Ochse, 2013: 15). Another study, conducted in 2010, estimated that 40% of the South African population was characterised as being deficient (i.e. people selected foods from 0-3 food groups), 50% as sufficient (food came from 4-6 groups) and only 10% as food diverse (selections from 7-9 groups) (Steyn & Ochse, 2013: 15).

Therefore, with a mean DDS of 4.2, South Africans do not seem to be meeting the sufficient dietary diversity as this score is only just above the cut-off level for diet adequacy (Shisana et al, 2014: 167). This has important implications for media-centric nutrition interventions as consumers either have little knowledge concerning the innate benefits of diverse diets (and

¹⁰ (Labadarios et al, 2011) & (Drimi & McLachlan, 2009)

the relative ease of increasing diversity), or they are unwilling or perhaps unable to extend their dietary diversity for some reasons. With regards to knowledge, FBDGs for South Africans suggest that graphic formats should be created so that consumers have simple, consumer-friendly frameworks in which to understand the requirements of a successfully diverse diet (Steyn & Ochse, 2013: 16). In terms of getting individuals to actively participate in diversifying their diet, the FBDGs also suggest that food policies and food aid should promote diverse diets by allowing healthy traditional foods and healthy modern and functional foods to be made more accessible and acceptable (Steyn & Ochse, 2013: 16-17). But, as this study suggests, interventions, to have a prospect of success, would need to go deeper and wider than mere information provision.

2.4.3. Dietary Behaviour and Practices

SANHANES-1 hones in on two aspects of dietary behaviour – namely the frequency of eating a meal outside of the home and the factors influencing food choices when grocery shopping (Shisana et al, 2014: 181-187). And although these factors could be influenced by different levels on the social determinants of health, they are still primarily individual behaviours that could have an indirect impact on certain NCD risk factors.

With regards to the sources of out-of-home foods, these range from street foods, restaurants, and fast-food outlets – depending on the context (Shisana et al, 2014: 181). Restaurants and fast-food chains are generally formal settings that are located in a building where they may or may not have seating (Steyn & Labadarios, 2011: 462). Street food, on the other hand, is provided by a stand, cart or kiosk on the street or pavement (Steyn & Labadarios, 2011: 462). SANHANES-1 attempted to find out the frequency with which people eat outside of their homes. The results found that almost half (48.0%) of adult South Africans reported that they had ever eaten outside the home (Shisana et al, 2014: 181). In other words, 52% of individuals claimed that they have *never* eaten outside of the home. However, it is difficult to assess the credibility of this information as it relies on the unreliable quality of respondent's mental recall and their knowledge of what constitutes 'eating out of the home'.

Although there was not a large difference between men and women, the most interesting finding in this regard is that eating outside of the home is highest amongst the youngest of participants (52.8%) and decreases with each age group – highlighting the fact that younger

generations are more influenced by eating out of the home (Shisana et al, 2014: 182). The survey also found that of the 48.0% of people that ate outside of the home, 19.3% of them did this more than once a week (Shisana et al, 2014: 183). Interestingly enough, although black Africans and informal urban dwellers had one of the lowest percentages with regards to ever eating out (43.5% and 36.3% respectively), those that did actually eat out had higher levels of doing so more than once a week compared to some of the other races and settlement dwellers (21.0% and 26.5% respectively) (Shisana et al, 2014: 182).

Although SANHANES-1 does not examine the factors influencing fast-food and street food intake, there are a number of studies that have examined this. For example, a study conducted by Van Zyl et al (2010) examined the characteristics and influences with regards to the fast food intake of young adult consumers in Johannesburg. Conducted amongst 19-30 year olds, this study found that the majority of young people (37%) had fast food at least two to three times per month, while 11% ate fast food daily (Van Zyl et al, 2010: 127). Interestingly enough, those of the lower socioeconomic group had the highest level of consumption of fast food daily (17.9%) – and the same goes for those that were unemployed (21.4%) (Van Zyl et al, 2010: 127). With regards to influencing factors, time limitations (58.9%), convenience (58.1%) and taste (52.5%) were the three main reasons provided for purchasing fast food, according to Van Zyl et al (2010: 127).

Another study conducted by Steyn and Labadarios (2011) examined the consumption of fast food and street food amongst South Africans. They found that on a national level, 11.3% of the population bought food from street vendors and 6.8% from fast food outlets frequently (≥ 2 times a week) (Steyn & Labadarios, 2011: 462). This is followed up by the fact that black Africans were the most frequent of street food consumers with 19% consuming such foods at least twice a week (Steyn & Labadarios, 2011: 462). Therefore, the results of these studies seem to be in line with SANHANES-1.

There are a number of factors that influence food choices when grocery shopping – including “the physical environment that determines food systems and availability, cultural (values and beliefs), socio-economic including social disparities based on sex, socio-economic status, race, household structure, demographic and personal attributes such as knowledge, preferences and priorities” (Shisana et al, 2014: 181). In SANHANES-1, the following factors were taken into account when examining the food choice amongst men and women:

food prices, safety in terms of hygiene, taste, convenience, nutrient content, how well/long the foods keep, easy preparation, and health considerations (Shisana et al, 2014: 181-3). Overall, it was shown that women, more than men, did the grocery shopping, while price was indicated as being the primary influence regarding food choice (64.5% of women and 35.9% of men) (Shisana et al, 2014: 183)

An important factor that influences dietary behaviour is that of food palatability and pleasure. Food palatability tends to promote consumption and increases a sense of hunger between meals (WHO, 2000: 110). This means that the pleasure sensations from food can act as a reward by the consumers, and thus promote overconsumption (WHO, 2000: 110). As a result of understanding these factors of food palatability and pleasure, many food industries have attempted to capitalise on this phenomenon by developing foods of increasing palatability (WHO, 2000: 110). Indeed, in Michael Moss's book *Salt, Sugar, Fat: How the Food Giants Hooked Us*, this New York Times Journalist examines these three ingredients that food companies use to achieve the greatest allure for the lowest possible cost (Moss, 2013: xxviii-xxix). Sugar is the most recognised increaser of palatability and pleasure, however, it has also been recognised that “sugar-rich foods [result] in poor satiety and therefore induces increased energy intake” (Temple & Steyn, 2013: 102). This means that high energy intake from sugars could be a major cause of overweight and obesity (Temple & Steyn, 2013: 102). Therefore, individuals need to be aware of the effect that certain foods (especially processed foods) can have on their dietary behaviours.

2.5. Malnutrition

Malnutrition, defined as “an abnormal physiological condition caused by inadequate, unbalanced or excessive consumption of macronutrients and/or micronutrients” (FAO et al, 2014: 50), refers to both under-nutrition and over-nutrition. Generally malnourishment comes about when individuals are either not eating enough food or they are not eating foods with the necessary micronutrients to keep them healthy (WFP, 2014a). Malnourishment causes a number of health issues and a malnourished person will have problems resisting diseases (WFP, 2014a). According to the WHO, malnutrition contributes to more than one third of all child deaths, despite the fact that it is rarely listed as the direct cause (WHO, 2014c). However, under-nourishment and over-nourishment are often dealt with separately – therefore, in this section, they will be dealt with separately too.

2.5.1. Under-nutrition

Under-nutrition is defined as “the outcome of undernourishment¹¹, and/or poor absorption and/or poor biological use of nutrients consumed as a result of repeated infectious disease” (FAO et al, 2014: 50). According to UNICEF, undernourishment causes individuals to no longer be able to maintain natural bodily capabilities such as growth, resisting infections and recovering from disease (UNICEF, 2006). Under-nutrition includes being stunted (underweight/short for one’s age), wasted (dangerously thin for one’s height), and deficient in vitamins and minerals (FAO et al, 2014: 50). According to the World Food Programme (WFP), poor nutrition causes 45% of deaths in children under five – 3.1 million children each year (WFP, 2014b).

However, according to a recent report from the Food and Agriculture Organisation (FAO), there have been estimates that suggest there is a trend in the reduction of under-nutrition and world hunger (FAO et al, 2014: 8). This is due to the fact that the amount of chronically undernourished people has reduced by more than 100 million over the past decade (FAO et al, 2014: 8). This means that the Millennium Development Goal (MDG) of halving the *proportion* of undernourished people by 2015 is within reach (FAO et al, 2014: 9). However, the FOA maintain that one in nine people globally still do not have sufficient food to lead active and healthy lives (FAO et al, 2014: 8). Indeed, the World Food Summit target of halving the *number* of undernourished people still seems to be out of reach (FAO et al, 2014: 9).

With regards to Sub-Saharan Africa, there has been insufficient progress towards these targets. More than one in four people remain undernourished, which is the highest prevalence of any region (FAO et al, 2014: 9). However, according to this report, there has still been significant improvement in this area with a drop from 33.3% in 1990-92 to 23.8% in 2012-14 (FAO et al, 2014: 9). In South Africa in particular, SANHANES-1 found that for all children (aged 0-14), there was a 15.4% prevalence of stunting (3.8% of severe stunting), a 2.9% prevalence of wasting (0.8% of severe wasting), and a 5.8% prevalence of underweight (1.1%

¹¹ “A state, lasting for at least one year, of inability to acquire enough food, defined as a level of food intake insufficient to meet dietary energy requirements” (FAO et al, 2014: 50).

of severe underweight) (Shisana et al, 2014: 207). Compared to previous data, this shows an increase with regards to stunting, but a decrease in both wasting and underweight (Shisana et al, 2014: 209). Therefore, despite the increase in stunting, South Africa has had decreasing levels of under-nutrition, and, according to *The State of Food Insecurity in the World 2014* report, South Africa is on target for completing the above MDG goal (FAO et al, 2014: 41).

The largest contributing factor to under-nutrition is that of food insecurity¹². According to the FAO, food security is a complex phenomenon that is the result of multiple causes and manifests itself in numerous ways (FAO et al, 2014: 13). The World Food Summit (WFS) of 1996 established four dimensions of food security: availability, access, stability and utilisation (FAO et al, 2014: 13). Essentially, availability refers to the quantity, quality and diversity of food, while the access dimension refers to indicators of physical access and infrastructure (such as food transport systems) and the economic access of food (represented by the domestic food price index) (FAO et al, 2014: 13). Stability essentially refers to environmental and political economic factors that affect food supply and security. Finally, the term utilisation focuses on 1) the ability to utilise food (access to water and sanitation), and 2) the outcomes of poor food utilisation (for example, the nutritional failures of children under the age of five years) (FAO et al, 2014: 13). According to this report by the FAO, in order to understand food security in a population, these four dimensions need to be examined in detail (FAO et al, 2014: 13).

In South Africa there have been numerous studies that have shown a general trend of decreasing levels of food security. In SANHANES-1, it was found that, overall, 45.6% of the population was food secure, while 28.3% were at risk of hunger, and 26.0% were food insecure (Shisana et al, 2014: 144). Taking a closer look, SANHANES-1 found that black South Africans had the lowest rates of being food secure (39.3%), while they had the highest rates of food insecurity (30.3% were at risk for hunger, while 30.3% were food insecure) (Shisana et al, 2014: 145). In terms of locality, it was found that although the rural informal areas suffered from the highest rates of food insecurity (37.0%), it was the urban informal who had the highest rates of being at risk of hunger (36.1%) (Shisana et al, 2014: 145). This

¹² Food insecurity is defined as “a situation that exists when people lack secure access to sufficient amounts of safe and nutritious food for normal growth and development and an active and healthy life” (FAO et al, 2014: 50).

is of particular relevance to this study as the primary focus falls on black isiXhosa individuals living in a peri-urban environment.

Compared to previous studies, SANHANES-1 found that although food security in South Africa has increased from 25.0% in 1999 to 48.0% in 2008, food security has still roughly stayed the same since their findings of 45.6% in the current report (Shisana et al, 2014: 146). Indeed, food *insecurity* has decreased by half from 1999 to 2008, but has still roughly stayed at 26% since (Shisana et al, 2014: 146). According to a recent report on poverty trends from Statistics SA, self-reported hunger in South Africa has decreased from 30% in 2002 to less than 15% in 2011 (Statistics South Africa, 2014: 12). Therefore, it seems as though food security levels are increasing within the country albeit it at a slow pace.

According to the Global Hunger Index (GHI), South Africa has almost consistently improved from 1990 where it held a score of 7.2 (where 0 is complete food security and 100 is complete food insecurity) to 2013 where it held a score of 5.4 (von Grebmer et al, 2013: 15). Indeed, this same report says that South Africa has seen a decrease of between 25-49.9% in hunger (von Grebmer et al, 2013: 12). Although Sub-Saharan Africa has also seen a relatively consistent decrease in hunger since 1990, the GHI has shown that South Africa has some of the best levels of food security compared to the rest of the continent (von Grebmer et al, 2013: 54).

However, it seems as though compared to the rest of the world, Southern Africa is not improving as fast. This is seen with the fact that this area has only improved by 23% since 1990 – a statistic which can be compared to the 34% improvement in South Asia and the 52% in East and Southeast Asia (von Grebmer et al, 2013: 11). Therefore, although there has been global improvement with regards to hunger and under-nutrition, the situation, particularly in Sub-Saharan Africa, remains ‘serious’ (von Grebmer et al, 2013: 11).

2.5.2. Over-nutrition: Overweight and Obesity

Overweight and obesity have become global issues. Approximately 1.9 billion adults were overweight or obese in 2014 (500 million of those being obese) (WHO, 2015a). According to the WHO, the global obesity rate has more than *doubled* since 1980 (WHO, 2015a). This has become an increasing problem as overweight and obesity are major risk factors for a number

of chronic diseases including type II diabetes, coronary heart disease, hypertension, and cancer (Goedecke et al, 2006). Therefore, the health consequences of being overweight and obesity include: increased morbidity, mortality, and increased health costs (Puoane & Mciza, 2009: 91). This means that examining the levels of overweight and obesity becomes important – particularly in relation to dietary intake.

The World Health Organization defines overweight and obesity as “abnormal or excessive fat accumulation that may impair health” (WHO, 2015a). In order to calculate overweight and obesity, the Body Mass Index (BMI)¹³ is suggested as it combines weight and height information to measure nutritional status (Shisana et al, 2014: 134). The WHO see overweight as having a BMI equal to or greater than 25, while obesity is seen as having a BMI equal or greater than 30 (WHO, 2015a). Other methods of measuring abdominal adiposity¹⁴ includes waist circumference, waist-hip ratio and waist-height ratio – all of which have been considered superior to BMI in predicting cardiovascular disease (CVD) risk (Shisana et al, 2014: 134). Indeed, it is important to note at this point that many academics claim that BMI is an imperfect method of measuring obesity (Rothman, 2008: S56). This is due to the fact that “beyond errors stemming from self-report inaccuracies, the problems stem from the fact that BMI does not take into account: (1) the difference between fat and non-fat mass such as bone and muscle; (2) the changes in body composition that occur with age; and (3) the time relation between obesity and the outcome being measured” (Rothman, 2008: S59). Therefore, it is possible that BMI is an inaccurate method of measuring body fat and that it can lead to a misrepresentation of the effects of obesity on health outcomes (Rothman, 2008: S59). However, due to the fact that the BMI is a global standard that has been adopted by the WHO, it will still be used within this study when discussing the current statistics on nutrition.

Overweight and obesity are leading risks for global deaths – indeed, most of the world’s population live in countries where overweight and obesity cause more deaths than underweight (WHO, 2015a). Despite the fact that overweight and obesity were previously associated with affluent and developed countries, it is becoming increasingly evident that countries in economic transition from undeveloped to developed, such as South Africa, are

¹³ BMI is “defined as a person’s weight in kilograms divided by the square of his height in meters (kg/m²)” (WHO, 2015a).

¹⁴ “The proportion of fat in the body, and hence more useful as an indicator of obesity than weight or body mass index” (Bender, 2009: 7).

predominantly affected and have an increased rate of obesity across all economic levels and age groups (Kruger et al, 2005: 491). Therefore, there has been an increasing prevalence of overweight and obesity in low- to middle-income countries (LMICs), where it has been linked to the dramatic transition from ‘whole’ foods to diets composed of processed foods (Puoane et al, 2013: 118).

In South Africa, there have been various national studies highlighting the increasing prevalence of overweight and obesity, mostly notably the SANHANES-1 project. SANHANES-1 found that South African women had a higher prevalence of overweight and obesity (24.8% and 39.2% respectively) compared to that of men (20.1% and 10.6% respectively) (Shisana et al, 2014: 346). It also found that 20.2% of males and 68.2% of females had a waist circumference that placed them at risk of metabolic complications (Shisana et al, 2014: 346). This is similar to the results of the waist-hip ratio, which saw risk in 6.8% of men and 47.1% in women (Shisana et al, 2014: 346). In this survey, it was also found that among children aged 2-14, the prevalence of overweight and obesity was significantly higher in girls than in boys (Shisana et al, 2014: 350). With regards to race, it was found that black African men had some of the lowest levels of overweight and obesity (19.1% and 9.4%) compared to other races, while black African women had the highest rates of overweight and obesity (24.9% and 39.9%) (Shisana et al, 2014: 138-139).

Compared to previous studies, the prevalence of overweight and obesity has significantly increased over the years. This is particularly evident when comparing the 2003 South African Demographic and Health Survey (SADHS) and SANHANES-1 as it shows that the amount of underweight and normal weight individuals has decreased, while the amount of overweight and obese individuals has increased (Shisana et al, 2014: 346). A study published by Goedecke et al in 2006 found that in South Africa, 29% of men and 56% of women were overweight and obese (Goedecke et al, 2006: 65). Of these, black African women had the highest prevalence of obesity (31.8%), while white and Indian women had the lowest (22.7% and 21.1% respectively). The opposite was found with men, as black African men had the lowest prevalence of obesity (6.0%) and white men had the highest (18.2%).

With these increasing figures in mind, it then becomes important to understand the factors behind overweight and obesity, particularly the dietary factors. Goedecke et al identifies a number of underlying mechanisms and determinants that lead to overweight and obesity –

including genetics, intra-uterine and early life influences, dietary intake, physical activity, socio-cultural factors, education, parity, and stress (Goedecke et al, 2006). Many of these underlying mechanisms fall under different segments of the determinants of health, many of which are closely related to nutrition and will be discussed later in this chapter. Generally, there have been weak correlations between fat intake, dietary energy and the BMI of South Africans (Kruger et al, 2005: 493). However, urban subjects have been reported to consume high fat diets which apparently contribute towards the increasing levels of obesity in the country (Kruger et al, 2005: 493).

Of course, prevention of obesity would be the best solution to the global epidemic of overweight and obesity. As Professor Lionel Opie, Director of the Cape Heart Centre and the author of *Living Longer, Living Better*, claims:

“The perfect answer to the worldwide increase in obesity would be prevention. To start with, over-feeding in early childhood must be avoided. Indulgent parents and grandparents are often to blame for wanting a ‘healthy, chubby baby’ rather than instilling life-long patterns of restrained food intake. Start prevention even earlier say modern nutritionists – weight gain by the pregnant mother sets the scene for an overweight baby.”

(Opie, 2011: 55).

Indeed, a series of recently published nutritional studies suggest that there should be increased improvement of children’s diets before they even learn to walk (Louis, 2014). This is seen due to the fact that our early taste preferences for certain foods are long lasting (Taveras In Louis, 2014). Therefore, exposing children to various fruits and vegetables as they make the transition to table foods could aid in developing healthy dietary habits that could prevent obesity and its related illnesses (Louis, 2014).

Overall, overweight and obesity are serious risk factors for NCDs, and are heavily related to unhealthy diets. Therefore, understanding these aspects about obesity – the NCDs it contributes to, the global and national prevalence of overweight and obesity, and the factors behind it – justify a need for nutrition interventions on various levels. It also highlights a need for greater levels of education and public awareness in terms of identifying overweight and obesity.

2.6. New and Controversial Nutrition-related Ideas

Although the scope of this study does not focus on the current controversial nutritional climate, it is important to briefly mention the impact of new scientific nutritional research, new and controversial nutrition ideas, and diet fads as it plays some role in creating uncertainty for some people in terms of their food choices. As esoteric as some of these debates might seem to poorer South Africans, as touched on in Chapter 4, some of the tenor of the recent debates have been picked up in everyday discourse.

On a global level, new research has shown that not all fat is bad. Indeed, the South African FBDG with relation to fat was changed from “eat fats sparingly” in 2003 to “use fats sparingly. Choose vegetable oils, rather than hard fats” in 2012 (Vorster et al, 2013a). However, some scientists, academics, and other professionals have started believing that even saturated fat (previously believed to be the most dangerous component in foods) can be good for individual’s diets (Walsh, 2014: 20-27). Although this idea has often been met by the nutritional world with much criticism, there seems to be plenty of evidence that contradicts current nutritional practices – as is explored in Bryan Walsh’s article ‘Ending the War on Fat’ in *Time Magazine* (Walsh, 2014) and Gary Taubes’s book *Why We Get Fat and What to Do About It* (Taubes, 2011).

Overall, the reason for the attention given to subverting the ideas on fat is that obesity has still been on the rise, despite nutritional guidelines in many countries and the promotions of low-fat products. A good deal of evidences suggests that it is the over-consumption of carbohydrates, sugar and sweeteners that is primarily to blame for obesity and Type 2 diabetes (Walsh, 2014: 23). Low-fat diets have also been unsuccessful in diminishing the prevalence of obesity as food manufacturers have been found lowering one ingredient like fat while surreptitiously adding more sugar (Moss, 2013: xxvi). Whether or not these claims are true, they could have an effect on the future nutritional landscape and could affect the choices that people make with regards to food.

In South Africa, Professor Tim Noakes's low-carbohydrate, high-fat, high protein diet (commonly known as 'Banting'¹⁵) has been endorsed by the South African parliament and there is some prospect that elements of the Banting diet will be implemented into nutritional guidelines (Ndenze, 2014). This decision has been met with criticism, as an open letter from the Faculty of Health Sciences at UCT claimed that while these diets show initial benefits, there is still little knowledge about the long term effects (de Villiers et al, 2014: 1). Therefore, although this section is not seeking to explore these debates in detail, it does highlight how the nutritional landscape is shifting due to new research and controversial information. It is also not covered in further detail due to the fact that these controversies seem, from the focus groups where they were tentatively discussed, to have some resonance with the lower SES groups, but mostly at the level of background information. Banting is not an inexpensive option¹⁶.

2.7. Nutritional Determinants

This section overviews 'foundational' determinants that this study suggests are the primary factors that affect nutrition. This foundational level includes the effects of individuals' socio-economic statuses (SEs), urbanisation, the effects of the cost of food, and finally, the pervasive presence of 'Big Food'. This section will then examine the socio-cultural factors that affect nutrition. These include education, social integration, and the social construction of body image and obesity. Finally, there will be a discussion as to how these external factors affect nutrition intervention campaigns such as the Super Seven.

2.7.1. Personal Agency and Biological Determinants

Before moving on to discuss the external factors that affect nutritional levels, it is important to note that although there are various influences on individuals' nutritional behaviours, individuals' personal agency also play a role in their food consumption behaviours. In other words, it must be recognised that, to some extent, people ultimately are still able to make decisions about their health. However, this study does proceed from the premise that personal

¹⁵ Banting is a type of ketogenic diet that is defined as "a diet poor in carbohydrate (20-30g) and rich in fat; causes accumulation of ketone bodies in tissue" (Bender, 2009: 173). Banting is therefore very similar to the Atkins diet.

¹⁶ The focus groups were conducted before the parliamentary address by Prof. Noakes: this might change the resonance of his ideas with people in lower socio-economic categories.

agency works within a myriad of factors that affect nutritional behaviours – and that even the primary factors discussed in this chapter are not the only influences on nutrition.

Another important factor that needs to be briefly mentioned before moving on to discuss the external determinants of nutrition is that of some specific biological determinants of health. The biological determinants of health and nutrition are considered to be non-modifiable as individuals cannot determine their genetic make-up (Puoane et al, 2013: 116). Due to the fact that these factors are out of individuals' control, successful interventions regarding nutrition need to focus on *modifiable* factors – aspects that can be changed.

However, with regards to obesity, biological factors do need to be taken into account. This is due to the strong evidence for a genetic component to obesity in humans, based on a number of correlational studies – including those involving BMI between family members, adoptees and their biological relatives, and between twins (Goedecke et al, 2006: 70). Indeed, van der Merwe & Pepper discuss how, for example, ethnicity has an impact on metabolic and anthropometric parameters (van der Merwe & Pepper, 2006). One study concludes that: “approximately 75% of the variation in per cent body fat and total fat mass is determined by *culture* and *lifestyle*, whereas 25% can be attributed to genetic factors [own emphasis]” (Goedecke et al, 2006: 70). Therefore, a greater focus in this study will be given to culture and lifestyle in order to understand the best methods for intervention.

2.7.2. Foundational Determinants

2.7.2.1. Socioeconomic Status

With regards to nutrition, as mentioned in the introduction, many theorists, including Wilkinson and Marmot, believe that socio-economic conditions result in a social gradient in diet quality that contributes to health inequalities (Wilkinson & Marmot, 2003: 26). This means that in a society, the different levels of classes have different access to sources of nutrients, where low-income individuals are least able to eat well (Wilkinson & Marmot, 2003: 26). Indeed, even though these socio-economic factors are complex, poor quality diets – along with physical inactivity and smoking – impact more severely on lower socio-economic groups, and this often leads to an intergenerational spiral of ill health (James et al,

1997: 1545). This, therefore, corroborates Bradshaw's contention that there is increasing evidence that inequalities play some role in poor health outcomes (Bradshaw, 2008: 53).

Muzigaba and Puoane developed a theoretical framework that highlights the “inter-relationships of compositional and contextual factors which may act singly or collectively to influence food-purchasing behaviour” (Muzigaba & Puoane, 2013: 2). The logic behind this framework is that socio-economic position (which itself is influenced by a number of factors) could determine individuals' perceptions towards their ability to access and afford healthy foods (Muzigaba & Puoane, 2013: 4). Via their model, socio-economic status (SES) is shown to have a direct impact on an individual's ability to access proper nutrition. In this study, this understanding is important as the primary focus is on poor communities whose access to food may be limited by their low SES. Nutritional behaviour change intervention projects obviously need to take into consideration their target population's socio-economic status in order to understand not only individuals' practical access to healthy foods, but to also understand the target audience's own perceptions over their ability to access and afford a healthy diet.

2.7.2.2. Globalisation and Urbanisation

Globalisation is a factor that has been altering the political, economic, social, and environmental landscape over the past few decades (Puoane et al, 2013: 119). With regards to nutrition, this globalisation, along with other structural determinants, has affected the food environment all over the world. This is particularly evident in the developing world where there has been an increasingly rapid change with regards to the structure of dietary intakes and the prevalence of obesity (Mendez & Popkin, 2004: 55). Indeed, Mendez and Popkin (2004: 55) identify the fact that increasing globalization may bring shifts in a number of areas. With regards to developing countries, Mendez and Popkin (2004: 55) claim that these countries are undergoing both rapid urbanization and globalization, which includes changes in the sociocultural environment such as mass media marketing and the widespread availability of less traditional foods.

Urbanisation in South Africa has some interesting trends as, in spite of the apartheid era's effort to control people's movements, more than half of the population was urbanised by 1994 (Bradshaw, 2008: 60). And this trend does not seem to be slowing down – the

proportion of people living in urban areas has increased to 62% in 2011 (SAinfo Reporter, 2013). This urbanisation is generally accompanied by changes in a number of areas including access to mass media, modern technologies related to work, leisure and transportation, and increased access to a variety of foods throughout the year (Mendez & Popkin, 2004: 55).

With regards to food, it has been noted that in developing countries there are potential benefits to the enhanced variety of foods associated with urbanisation (Mendez & Popkin, 2004: 74). These include dietary shifts such as the increase in energy sufficiency and a greater consumption of fruit (Mendez & Popkin). However, they have also noted that these benefits do not outweigh the potential obesogenic¹⁷ shifts as the greater consumption of fruits and vegetables has been relatively less compared to the large increases in edible oils, ASFs (Animal Source Foods) and added sugar and caloric sweeteners (Mendez & Popkin, 2004: 74). Indeed, many studies have agreed with the idea that urbanisation, particularly in South Africa, has been associated with the adoption of a westernised diet – which is higher in fat and lower in carbohydrates and fibre compared to a traditional diet (Goedecke et al, 2006: 71). This is particularly evident in the urban setting where there are increased amounts of fast food, a decrease in the relative cost of meat and high fat foods, and reduced time for food preparation (Chopra, 2002: 124). Even in informal settlements, street vendors have been shown to sell inexpensive food products that are of poor quality and have less variety (Puoane & Mciza, 2009: 96).

Therefore, due to the fact that urbanisation has been associated with increased access to mass media and increased consumption of energy-dense foods, it is obvious that Puoane et al's deduction is true:

“As people move from rural to urban settings, their food choices are influenced both by what is available in their immediate environment and by aggressive marketing strategies used to promote certain products, including food prices.”

(Puoane et al, 2005a: 92)

¹⁷ Obesogenic is an adjective “pertaining to or tending to cause obesity” (Dictionary.com, 2014).

This means that urbanisation is therefore linked to the below sections which deal with the determinants related to the cost of food and the idea of large corporate entities that influence our eating patterns.

2.7.2.3. The Cost of Food

Globally, unavailability and high prices are listed as the main constraining factors when it comes to eating healthily (Jetter et al, 2006: 38). An American market-basket study published in 2006 compared the costs of the U.S. Department of Agriculture's Thrifty Food Plan (TFP) that meets the minimum diet recommendations for a family of four on a modest budget with a healthier food basket that included the whole grains and leanest meats recommended for a healthy diet (Jetter et al, 2006: 39). They found that the healthier food basket costs more as a result of the high prices for whole wheat bread, whole grains, low-fat meat, and skinless poultry (Jetter et al, 2006: 39). This therefore emphasises the fact that the cost of healthier foods could be a constraining factor to consumers wanting to meet dietary guidelines (Jetter et al, 2006: 43).

Another American study, focusing on price barriers to eating more fruit and vegetables for low-income families, saw that higher-income consumers are more likely to meet dietary recommendations compared to the lower-income consumers (Cassady et al, 2007: 1909). Low-income consumers themselves reported that fruit and vegetable prices are a barrier to consumption as American households allocate only 15% to 18% of their food-at-home budget to fruits and vegetables (Cassady et al, 2007: 1910). The final findings of this study found that in order for consumers to meet dietary guidelines, they needed to devote 43% to 70% of their food budget to fruits and vegetables (Cassady et al, 2007: 1909) and that although there still is a need for the education of consumers about the importance of increasing fruit and vegetable consumption, these education programs need to consider the trade-offs required for families to purchase more fruits and vegetables (Cassady et al, 2007: 1914). Therefore, studies such as this have relevance as the potential Super 7 campaign focuses on the importance of fruit and vegetables while attempting to allow for discounts on selected items (Appendix A).

South African studies have also been conducted with relation to the cost of food items and mostly corroborate the view that the affordability of certain foods, along with the socio-

economic status of individuals, influence food-purchasing behaviours (Muzigaba & Puoane, 2013: 2). A study conducted in South Africa focusing on the cost of healthy foods in a predominantly black urban township in Khayelitsha found that lack of money was the major deterrent of frequent consumption of fruits and vegetables and other healthier foods (Muzigaba & Puoane, 2013: 18). Although this was the primary factor affecting food-purchasing behaviour, there is also the variability in the price of foods between larger and smaller food stores (Muzigaba & Puoane, 2013: 18). This is particularly due to the fact that smaller convenience shops ('spazas') generally seemed to have more expensive healthier food options compared to other larger grocery stores (Muzigaba & Puoane, 2013: 18) – a problem which is emphasised by the fact that the frequency of food purchased in these shops are higher compared to supermarkets (Muzigaba & Puoane, 2013: 18). Other factors that are related to the cost of food include the compositional socioeconomic position of an individual, which is a primary factor of access to resources such as home food storage facilities, private car and kitchen food preparation facilities (Muzigaba, 2010: 95).

Both international and national studies, highlight the fact that financial constraints have shifted people's concerns from healthy eating to consuming available and affordable food in order to survive (Puoane & Tsolekile, 2008: 12). Indeed, it has been shown that as a reaction to an increase in price, individuals from low SES groups will immediately reduce the quality of their diet, followed by a decrease in quantity if necessary (Meerman & Aphane, 2012: 8). However, despite Muzigaba and Puoane's study highlighting the fact that food prices are of a concern, they also state that "future research studies are needed to assess trends in food prices over an extended period of time and how this is related to food purchasing and consumption patterns" (Muzigaba & Puoane, 2013: 19). This is mainly due to the fact that food prices may fluctuate (Muzigaba & Puoane, 2013: 19).

2.7.2.4. 'Big Food'

Aside from prices, the food environment is also powerfully shaped by large scale national and transnational food corporations (otherwise known as 'Big Food'). This term is used to refer to large commercial entities that dominate the food and beverage environment (Igumbor et al, 2013: 1), including global (and SA based national) fast food restaurant chains and brand name snacks and products, as well as global producers of processed foods and drinks. These commercial entities include a number of very large multinational food and beverage

companies that are increasingly taking control of the world's food system – thus making the system, on a global scale, more of an oligopoly rather than a competitive marketplace (Stuckler & Nestle, 2012: 1).

Big Food has a large impact on many different countries, including South Africa, where they are a driving force behind the global rise in consumption of sugar-sweetened beverages (SSBs) and processed foods enriched in salt, sugar, and fat (Stuckler & Nestle, 2012: 1). According to a study conducted on major multinational food and beverage companies, it has been found that the top ten packaged food companies (namely, Nestle, Kraft Foods, Unilever, PepsiCo, Mars, Danone, Cadbury, Kellogg, General Mills and Ferro) account for 15.2% of global sales (Alexander et al, 2011: 1). While the top ten beverage companies account for 52.3% of total soft drink sales (including Coca-Cola with 25.9% and PepsiCo with 11.5%) (Alexander et al, 2011: 1).

In South Africa, there has also been an increase in the total sales of packaged foods and soft drinks (Igumbor et al, 2013: 1). For example, with regards to processed foods, a national study¹⁸ found that 6.8% of the population bought fast food (Steyn & Labadorios, 2011: 462), while the sales of snack bars, ready-made meals, and noodles rose by 40% between 2005 and 2010 (Igumbor et al, 2013: 1). With regards to soft drinks, compared to the worldwide consumption of 94 Coca-Cola products per person per year in 2012, South Africa had a consumption of 260 Coca-Cola products per person per year – up from 183 in 2002 and 177 in 1992 (The Coca-Cola Company, 2012). This means that due to the fact that Big Food has increased the consumption of SSBs and energy-dense processed foods, they could also be implicated in the rising levels of obesity and diabetes (Stuckler & Nestle, 2012: 1-2).

Before examining the different strategies adopted by Big Food to increase their availability, affordability, and acceptability in a food environment, it is also important to note that there has been growing concern about Big Food's role in creating an obesogenic environment. Michael Moss, A *New York Times* journalist, recently published a book concerning the ability of Big Food companies to get away with producing products that undermine the health of those that consume them (Blythman, 2013). This book, *Salt, Sugar, Fat: How the Food Giants Hooked Us*, is an examination of the three core ingredients that Big Food use most

¹⁸ (Steyn & Labadorios, 2011).

commonly – namely salt, sugar, and fat (Moss, 2013). Moss uses his book to highlight how Big Food relentlessly attempts to give their foods the greatest allure for the lowest possible cost – a drive that has inexorably lead them to the over use of these three ingredients (Moss, 2013: xxviii-xxix). Indeed, Moss shows that a) sugar not only sweetens, it replaces more costly ingredients to add bulk and texture (Moss, 2013: xxix), b) for little added expense, a variety of fats can be slipped into food formulas to stimulate overeating and improve mouthfeel¹⁹ (Moss, 2013: xxix), and c) salt has the ability to boost the appeal of processed foods (Moss, 2013: xxix). Therefore, when examining Big Food’s tactics to increase the overall availability, affordability, and acceptability, it is important to also keep in mind that the make-up of the food itself adds to each of these tactics – all of which are an attempt to boost themselves in the competition for more space on the grocery shelf (Moss, 2013: xxix).

Aside from the addictiveness of the various ingredients used in SSBs and processed foods (Moss, 2013), Big Food also uses a number of techniques to increase the availability of their products in every country. In South Africa, supermarket outlets (that market processed foods and SSBs) have started displacing traditional food retailers as the primary place from which South Africans purchase their food in both urban and rural areas (Igumbor et al, 2013: 4). For example, a case study in the rural Ciskei region of the Eastern Cape found that 64.8% of households in villages used supermarkets (Igumbor et al, 2013: 4). As Igumbor et al (2013: 4) claims, Big Food manufacturers rely on formal retail chains, such as supermarkets and fast food chains, in order to make their products more available. However, they also note that Big Food has used strategies to increase the availability of their products by working with the informal sector:

“Informal traders sell soft drinks, dairy products, bakery products, and snacks such as chips (crisps) in urban settlements and rural areas, and Coca-Cola, in particular, has worked hard to increase product sales and consumption through this channel.”
(Igumbor et al, 2013: 4)

This ‘exploitation’ of the informal sector has significant ramifications as informal vendors (particularly spaza shops) are, as stated above, still frequented more often by those living in

¹⁹ According to Moss, ‘mouthfeel’ “is the way a product interacts with the mouth, as defined more specifically by a host of related sensations, from dryness to gumminess to moisture release” (Moss, 2013: 42).

peri-urban areas compared to supermarkets (Muzigaba & Puoane, 2013: 18). Steyn and Labadarios (2011) refer to the food sold by these vendors as ‘street food’ and claim that at a national level, 11.3% of the South African population bought food from street vendors more than twice a week (Steyn & Labadarios, 2011: 462). This seems to be mainly due to the fact that street food is inexpensive, readily available, and meets the needs of immediate hunger (Steyn & Labadarios, 2011: 462). It also seems to be due to the fact that transport costs restrict regular supermarket trips in favour for centrally located spaza shops (Puoane et al, 2005a: 93). However, despite the utilisation of spaza shops to promote ‘Big Food’ products, these vendors could also be utilised with regards to nutritional interventions as they tend to have some level of influence with individuals’ food purchasing behaviours.

In terms of fast food, even though street food in South Africa is still sold at a higher rate than formal fast food (Steyn & Labadarios, 2011: 462), fast food restaurant chains have been increasing their outlets at a rapid pace. For example, the popular McDonald’s fast food restaurant chain established its first restaurant in South Africa in November 1995 and now has over 200 restaurants in all nine provinces (McDonald’s SA, 2014). Even within McDonald’s, the South African market has been its most successful as a record was set when South Africa opened 30 restaurants in just 23 months, at one stage opening 10 restaurants in 78 days (The Brand Museum, 2012). Another example of this rapid expansion comes from KFC, where the first store opened in 1971 (Maritz, 2012) and now boasts of over 500 stores in Southern Africa (KFC South Africa, 2014). While there are no McDonald’s in Grahamstown, the peri-urban setting has two KFC stores, both located near differing demographics.

As discussed above, the cost of food has a major impact on food purchasing behaviour. Therefore, Big Food understands that in order for their products to be successful, they need to make their products affordable. Supermarkets are able to keep their prices lower than traditional retail outlets as they cut out traditional wholesalers, consolidate their suppliers, and deal with larger volumes (Igumbor et al, 2013: 4). However, even though their foods are generally cheaper, supermarkets’ readily available healthier food options typically cost between 10% and 60% more than less healthy foods when compared on a weight basis, and between 30% and 110% more when compared on the cost of food energy (Igumbor et al, 2013: 4). Indeed, lean meat, fish, fruit, and vegetables, all of which are nutrient-dense food, generally cost more than the inexpensive processed food products (Igumbor et al, 2013: 4).

The third strategy that Big Food uses to increase its consumption is making their foods more acceptable (Igumbor et al, 2013). This is generally achieved through the various marketing strategies that Big Food employs, and is of interest to this study as it uses the media to encourage a certain type of behaviour. Indeed, lessons can be taken from the marketing strategies employed by Big Food in order to promote healthier foods (this idea will be focused on more strongly in Chapter 3 of this study). There are three main marketing strategies that Big Food uses in the South African food environment, namely, sales promotions, packaging, and advertising (Igumbor et al, 2013: 5). With regards to sales promotions, an example is PepsiCo's website that offers 'fans and followers' the opportunity to win prizes (Pepsi SA, 2013). Food packaging is also an important aspect with relation to health and nutrition as a recent trend includes appealing to health-conscious consumers through the use of certain statements on packages (Igumbor et al, 2013: 5). Even 'health images' are used to sell products as less educated individuals could recognize healthy foods by the presence of certain images (for example the picture of a heart, knife and fork) (Muzigaba & Puoane, 2013: 17). In terms of food advertising, this section will be explored further in Chapter 3.

Overall, the food environment is changing on a global level, and even though the link between Big Food and the changing rates of obesity and NCDs in South Africa is not clear, it is clear from the above information that they could be at least partially culpable (Igumbor et al, 2013: 5). And despite the fact that Big Food could also bring benefits – “improved economic performance through increased technology and know-how and reduced risks of under-nutrition” (Stuckler & Nestle, 2012: 2) – it still brings heavy risks with regards to nutrition. However, this is not the focus of this study – although it is still important to understand this industry in order to understand the global and local food environments.

2.7.3. Socio-Cultural Determinants

2.7.3.1. Education and Nutrition

Education is a key determinant of health and nutrition. Indeed, education can act as an important route in which disadvantaged groups can escape poverty and poor health (Dahlgren & Whitehead In Bamba et al, 2010: 289). This is seen by the fact that improved educational

qualifications improve job and pay prospects, which, in turn, increases an individual's standard of living – including their access to healthy diets (Dahlgren & Whitehead In Bamba et al, 2010: 289). Indeed, with regards to education, socioeconomic status (SES) and nutrition, studies of dietary habits of lower SES groups have shown a lack of nutrition knowledge, a lack of cooking skills, a lack of motivation, and a general disinterest in cooking (Darmon & Drewnowski, 2008: 1112). However, education not only affects SES and its related opportunities, but it also affects individual's cognitive abilities and their perceptions of the world around them. Therefore, this section will examine the implications that education has on nutrition and how it affects people's knowledge and skills with regards to food.

Education has been seen to play a fundamental role in nutrition as it aids the mental skills necessary to process nutrition information and acquire knowledge (Viswanath & Bond, 2007: S21). This therefore means that individuals with higher levels of cognitive skills are far more likely to recall messages and facts about healthy diets, thus making such health innovations and interventions as communication campaigns more effective (Viswanath & Bond, 2007: S21). Due to this fact, many public health professionals emphasise a stronger food culture for health – with an emphasis on education in order to increase knowledge about food and nutrition and support other skills relating to food (such as cooking skills) (Wilkinson & Marmot, 2003: 27).

In South Africa, education is increasing in the country as in 2011 the number of people aged 20 and older who had completed their Grade 12 increased from 21.5% in 2002 to 27.4% (Puoane et al, 2013: 118). This is also evident through the fact that the percentage of people with no formal education decreased from 10.8% in 2002 to 6.5% in 2011 (Puoane et al, 2013: 118). However, despite the fact that education levels in South Africa have been improving, the SANHANES-1 study found that South Africans have inadequate health knowledge, regardless of their education level and SES (Shisana et al, 2014: 188). In this survey, the 25 532 participants were asked 9 questions (four relating to fibre content, three relating to fat content, one relating to sugar and one relating to fruit) (Shisana et al, 2014: 177). A score of 0–3 was low, 4–6 was medium, and 7–9 was a high level of knowledge (Shisana et al, 2014: 177). The results of this survey saw that:

“Only one in five participants (22.6%) achieved a high score, the majority (62.9%) achieved a medium score and 14.5% achieved low scores. Nutrition knowledge tended to increase with age and peaked at the group aged 45–64 years.”

(Shisana et al, 2014: 14)

This information has important implications as lack of nutrition knowledge, apathy toward nutrition prevention messages, and an erroneous perception of body weight have been referenced as potential explanations for unhealthy dietary habits (Darmon & Drewnowski, 2008: 1112). Therefore, health education needs to be directed towards all South Africans in order to increase and improve knowledge relating to nutrition and dietary needs. And despite the fact that the SANHANES-1 survey recommends health education be aimed at all socioeconomic groups, the focus should still fall heavily on the poor as they are the most vulnerable in terms of not necessarily having the means of accessing health information (Shisana et al, 2014: 188).

In the World Health Organization’s 2004 Global Strategy on Diet, Physical Activity and Health, they recommend five strategies in order to increase individuals’ knowledge about diet. These include 1) education and public awareness, 2) adult literacy and education programmes, 3) marketing, advertising, sponsorship and promotion, 4) labelling, and 5) health claims (World Health Organization, 2004: 7-8). These strategies, as the WHO claim, should be communicated through multiple channels and should be in forms appropriate to local culture, age, and gender (World Health Organization, 2004: 7). This is particularly due to the fact that behaviour can be influenced by a myriad of sources, including schools, workplaces, educational and religious institutions, and by nongovernmental organisations, community leaders, and mass media (World Health Organization, 2004: 7).

2.7.3.2. Social Integration

Social integration is a complex field and generally refers to how an individual is connected to other individuals, groups, and institutions in their society (Viswanath & Bond, 2007: S21). Thus proving that culture, social networks, social attachments, and engagement with communities all fall under the idea of social integration. With regards to health, there has been an assumption that the greater the integration, the more likely the opportunity to engage in healthy behaviours or unhealthy behaviours (Viswanath & Bond, 2007: S21). This is due

to the fact that there are a number of mechanisms that come with social integration and affect certain health outcomes. These include: social support, reinforcing social norms, promoting access to resources, and fostering communication (Viswanath & Bond, 2007: S22).

Therefore, due to the fact that aspects of social integration involve the use of local mass media, the flow of information, and the enforcement or reinforcement of social norms (Viswanath & Bond, 2007: S22), exposure to cultural specific messages about nutrition could have an impact on certain individual's perceptions of nutrition.

However, in a country like South Africa, social integration is complex. For some, this is because we live in a multicultural society with numerous different traditions and customs that affect the way that we live, the way that we were raised, and the way that we relate to others (Bradshaw, 2008: 54). This means that messages relating to diet and nutrition can be complex and difficult to 'translate' within the different cultural groups. Therefore, such academics as Viswanath and Bond, suggest that messages and information should be relatively straightforward and practical (Viswanath & Bond, 2007: S22). This means that peers in certain social and cultural networks can engage and interpret messages in meaningful and understandable ways (Viswanath & Bond, 2007: S22).

According to SANHANES-1, cultural norms and beliefs regarding body image also seem to affect nutritional knowledge (Shisana et al, 2014: 179). This is particularly seen in certain cultural beliefs held by poor black Africans who see being overweight as a sign of affluence (Puoane & Mciza, 2009: 94). For example, an overweight woman is believed to be effectively supported by her husband, whereas being slim is associated with illness and unhappiness (Puoane & Mciza, 2009: 94). However, it is important to note that although these cultural beliefs exist, through education and the access to mass media, black South Africans are in conflict with whether being overweight or being thin is desirable. A study conducted by Puoane et al (2005b) found that:

“While in a black culture, especially in the older generation, a woman is admired if she has some padding over the hips, women who are exposed to media images, which portray thin women as attractive, become confused. They tend to want both.”
(Puoane et al, 2005b: 14)

This was further emphasised in 2010 by a study examining the perceptions of body image amongst black African girls aged 10-18, where some girls associated fatness with dignity and looking good, while at the same time recognising the health risks involved with obesity (Puoane et al, 2010: 33). This stands in contrast to another study²⁰ conducted amongst ‘Western’ adolescent girls who tend to have negative perceptions about their body image, perceiving themselves as overweight despite having a somewhat acceptable body size (Puoane et al, 2010: 33).

There are also other cultural activities that have often been attributed to the black African culture, but that is apparent in many other cultures. These include rituals and gatherings where there is a promotion of the over-consumption of a diet high in fat and sugar (Puoane & Mciza, 2009: 94). This is primarily due to the fact that successful social gatherings are partly rated by the abundance of food – regardless of its health status (Puoane & Mciza, 2009: 94). Another factor that affects the promotion of obesity through culture is that of urbanisation. This is seen with the fact that the consumption of traditional food is often associated with poverty (Puoane & Tsolekile, 2008: 12) and that after moving to a city, people tend to adopt westernised diets (which are high in fat content, and low in complex carbohydrates compared to traditional diets) (Puoane & Tsolekile, 2008: 12).

Therefore, through the examination of culture and social communities, it is obvious that social integration has an important impact on nutritional knowledge and behaviour. This means that communication theorists believe that public health campaigns should be ‘culturally tailored’ for different beliefs, values, and norms, in order for them to be most effective (Viswanath & Bond, 2007: S22). However, as Viswanath & Bond also claim, recommendations in dietary modification through communication could be rejected if they are in conflict with the audience’s culture or traditional food habits (Viswanath & Bond, 2007: S22). Therefore they suggest that media-centric interventions should inform consumers about healthy methods of food preparation and the substitution of unhealthy foods with healthy ones (Viswanath & Bond, 2007: S22).

²⁰ (Storz & Greene, 1983)

2.7.3.3. The Social Construction of Body Weight and Obesity

Another influencing factor that could potentially affect individuals' food consumption behaviours is that of the social construction of body weight and obesity. Many academics argue that body weight is not an objective reality, but results from individuals' behavioural beliefs – i.e. are socially constructed norms regarding body image and weight (Patterson & Johnston, 2012; Paunescu, 2014; Lorber & Martin, 2007; Monaghan, 2013; Rothman, 2008, etc.). These researchers and theorists also critique the current system of determining body weight and discussing obesity (Rothman, 2008). The discussion and acknowledgement of these arguments are of importance as it highlights the fact that there are recognised issues surrounding the way in which obesity is constructed and discussed within a society.

In the editorial for the *Journal of Gender and Feminist Studies*, Ramona Paunescu claims that “women's bodies, beyond being simple functional anatomic systems, represent social constructs, part of the cultural system that is continuously de-constructed and reconstructed” (Paunescu, 2014: 1). Paunescu puts emphasis on the fact that cultural norms and expectations puts certain social pressures on the female body – this is particularly seen when examining different cultures that reveal huge differences between cultures when it comes to body self-perception (Paunescu, 2014: 3).

However, body image is not only an issue for women. According to Lorber & Martin (2007: 228), perceptions and constructions of individuals' bodies comply with a society's accepted views of masculinity and femininity. Therefore, individuals attempt to shape their bodies according to how they should look based on their culture's expectations of their gender and age. Indeed, this is seen in the above section on social integration which examines the effect that one's culture has on beliefs surrounding nutrition and obesity. In South Africa, a local study on multi-ethnic women and their dissatisfaction with their body size found that black women experienced less pressure from men to adopt thinner body-sizes compared to other ethnic groups (Puoane & Mciza: 2009: 95). The media also plays a role in the social construction of the body. Indeed, Bates claims that: “unrealistic media ideals of female beauty have spawned a multitude of ‘body confidence’ campaigns, but many ... only seem to want to shift us from coveting one ideal for another” (Bates, 2014). An example of this is a study conducted with community health workers who generally valued an overweight woman while at the same time thought it would be more desirable if they were thin (Puoane et al,

2005b: 14). The study concluded that although women from this culture (particularly in the older generation) admired a woman if she had ‘some padding over the hips’, their exposure to media messages that covet thin women led them to become confused (Puoane et al, 2005b): 14).

But what does this mean for the way in which we talk about obesity? According to Patterson and Johnston, “the academic literature on obesity frequently bifurcates into two poles: a realist pole that treats obesity as a biomedical fact, a health risk and an ‘epidemic’, and a second, constructionist pole that adopts a critical view of obesity as a moral panic driven by political interests and cultural values” (Patterson & Johnston, 2012: 265). Essentially, Patterson and Johnston claim that on one side, there are anti-obesity messages that have equated thinness and good health (Patterson & Johnston, 2012: 266), while on the other hand, there is also a belief that fat bodies are prejudicially and simplistically equated with unhealthy bodies (Patterson & Johnston, 2012: 266). Therefore, Patterson & Johnston claim that there is an analytical gap between these realist and constructionist ideas, and that a dialogue between these two arguments needs to be explored (Patterson & Johnston, 2012: 266).

Overall, Patterson & Johnston claim that the realist and constructionist perspectives have shed light on the way in which obesity is discussed on a variety of platforms (Patterson & Johnston, 2012: 284). Indeed, they emphasise the fact that both realist and constructionist perspectives have important insights about obesity that counters the dominating public discourse (Patterson & Johnston, 2012: 284). Therefore, they encourage greater debate over the way in which obesity is presented from both sides of the realist- and constructionist-orientated perspectives.

Although it is important to note that these debates surrounding the social construction of body weight exist, it is beyond the scope of this study to go into each of the arguments into great detail. This is primarily due to the fact that this study is focusing on nutritional behaviours. Therefore, it is important to rather note the consequences that these debates have for nutrition interventions in particular – primarily the fact that instead of focusing on changing individuals’ body weights, nutritional campaigns should rather focus on encouraging individuals to obtain the proper nutrients. Indeed, the Health at Every Size (HAES) initiative acknowledges that the rhetoric surrounding obesity has resulted in food and body preoccupation, self-hatred, eating disorders, discrimination, and poor health (HAES, 2014).

Therefore, HAES claims that good health should be realised independent from considerations of size and that this initiative supports the adoption of healthy lifestyles by people of any size (HAES, 2014). This means that while understanding the debates and social constructions surrounding obesity and ‘fatness’ need to be realised, it is of more importance to focus on getting individuals to take part in healthy activities while not focusing on their body size or image.

2.8. Food-related policies

Before moving on to discuss how these various determinants affect the designing and implementation of a nutrition intervention, it is important to examine what is being done now in terms of bettering the global and national nutrition situation. Therefore, this section will briefly examine some of the policies relating to food that are being implemented. It can then be assessed whether or not these policies could be effective, or if there are still areas that need to be addressed. This section will begin with a brief discussion about the policies relating to ‘Big Food’ before examining food policies that are being implemented by the South African Department of Health.

2.8.1. Policies relating to Big Food

Some academics and policymakers take the view that ‘Big Food’ needs to be involved in improving the nutritional status of the populations they serve (Alexander et al, 2011: 1). Indeed, this statement makes a lot of sense and some Big Food companies have worked together to form alliances that set standards for their current practices. This is seen with such alliances as the International Food and Beverage Alliance (IFBA), made up of such Big Food giants as Ferrero, General Mills, Grupo Bimbo, Kellogg’s, Kraft Foods, Mars, Nestle, PepsiCo, the Coca-Cola Company and Unilever (Alexander et al, 2011: 1).

Through alliances such as these, many companies have recently made ‘self-regulatory pledges’ in response to public outcry (Sharma et al, 2010: 240). These regulations relate to four main initiatives: 1) addressing and limiting beverages and foods in schools, 2) limit food and beverage advertising aimed at children, 3) limit character licensing on foods, and 4) changing and standardising the food labelling system (Sharma et al, 2010: 240). In South Africa, companies such as Shoprite, Pick n Pay, Spar, and Woolworths have some of the

most active examples of CSR (corporate social responsibility) programs (Igumbor et al, 2013: 5). Although the focus of these programs varies, many of them relate particularly to nutrition education and sponsoring local sports tournaments (Igumbor et al, 2013: 5).

These self-regulation pledges have been welcomed by some as they believe that informed individuals will choose whether to eat unhealthy foods and need not be subjected to public health paternalism (Stuckler & Nestle, 2012: 2). However, many critics disagree with this self-regulation as they do not believe that conflicts of interest in Big Food companies can be reconciled, which is evident from the fact that many self-regulation pledges have not yet met their objectives (Stuckler & Nestle, 2012: 3-4). But despite these failures and limitations on the pledges, which Sharma et al outlines in their article, there have been suggestions for the implementation of a set of standards that the food industry should follow if their pledges (1) are to be considered good-faith efforts, (2) hold out hope for protecting the public's health, and (3) can be considered alternatives to government regulation (Sharma et al, 2010: 240).

Due to the fact that these companies with self-regulation pledges have not yet met their own guidelines, a more critical view has been taken in terms of how to curb the impact that Big Food's products have on diets. This view has been adopted as it recognises that profit is the primary goal of corporations, so self-regulation and working from within therefore become problematic (Stuckler & Nestle, 2012: 3). Therefore, critics of the self-regulation pledges suggest that strict public regulations need to be put into place, both on global and local levels, in order to restrict the promotion of unhealthy food and beverages.

2.8.2. Food Policies in South Africa

With the above section in mind, South Africa has already begun planning and implementing policies and regulations that relate to food and the prevention of NCDs. This is seen with the South African Department of Health's *Strategic Plan for the Prevention and Control of Non-Communicable Diseases 2013-17*, which emphasises dietary changes including:

- Less salt,
- Less fast and fried foods and snacks,
- Consumption of lean meat and low-fat dairy products,

- Avoidance of hard margarines in home and commercially baked products,
- Inclusion of 2-3 fish dishes per week,
- Consumption of whole grains, fruit, vegetables and legumes, and other traditional foods and dishes,
- And decrease use and intakes of sweetened (sugary) foods and drinks
(South African Department of Health, 2013: 37).

With regards to these goals, a number of strategies have been generated in order to meet South Africa’s NCD Targets (South African Department of Health, 2013). But despite having these strategies, the Department of Health also recognises that in order to achieve these objectives, inter-sectoral collaboration between governmental departments will need to take place. For example, with regards to obesity, it is impossible for individuals to simply change their behaviours through education unless healthy foods are made more accessible and available (South African Department of Health, 2013: 35). Therefore, the Department of Health would suggest the collaboration between at least the Departments of Agriculture, Trade and Industry, Finance, Basic and Higher Education (South African Department of Health, 2013: 30).

The reasons behind interventions at the risk factor level are due to the fact that addressing actual NCDs could cost large amounts of money. The WHO estimates that the annual cost for addressing NCDs in an upper middle-income country like South Africa is more than R1 billion and R1.125 billion for individual-based measures (South African Department of Health, 2013: 30). Therefore, these interventions could cost unrealistic amounts of money, especially in light of the current global economic climate. This means that the DoH uses the ‘Best Buy’ interventions of risk factor reduction and treatment (Table 1 & 2) as they relate to cost of implementation, health impact and cost effectiveness (South African Department of Health, 2013: 30).

Table 1 Adapted: The most cost-effective interventions to address diet, physical activity and obesity (South African Department of Health, 2013: 30)

RISK FACTOR / DISEASES	INTERVENTIONS / ACTIONS	COST OF IMPLEMENTATION (low=<=I\$1 per capita, high=>I\$2 per capita)	HEALTH IMPACT (DALYs per 1m)	COST EFFECTIVENESS (I\$ per DALY averted)

			population) (small<100large >1000)	(very= <GDP per capita, quite=1- 3GDP per capita)
HEALTHY DIET AND PHYSICAL INACTIVITY	Reduce salt intake	Low	Large	Very
	Food taxes on unhealthy food (foods high in fats and sugar) and food subsidies on healthy food (fruits and vegetables)	Low	Modest	Very
	Physician counselling	High	Large	Quite

Table 2 Adapted: Best Buys for Tackling Diet, Physical Activity and Obesity (South African Department of Health, 2013: 31).

	Cost in Rand per Head (2010)
Fiscal measures (e.g. taxes)	R0.20
Food advertising regulation	R0.90
Food labelling	R2.50
Worksite interventions	R4.50
Mass media campaigns	R7.50
School-based interventions	R11.10
Physician counselling	R11.80

Some of these interventions developed by the DoH have already been implemented through the use of regulations with relation to food content, and labelling and advertising. For example, as a reaction to increased national levels of salt intake, the government drafted Regulations in the Foodstuffs, Cosmetic and Disinfectants Act (Act 54 of 1972), which calls for a reduction of salt in processed foods by June 2016 and a further reduction by June 2018 (South African Department of Health, 2012). The benefits of reduced salt are twofold: firstly, it has been found that blood pressure is reduced significantly over an 8-week period when salt intake is reduced (Steyn et al, 2013). And secondly, the lowering of the salt content in bread, soup mix, seasoning and margarine by 0.85g/day would result in 7400 fewer deaths due to cardiovascular disease, as well as 4300 fewer non-fatal strokes per year (Steyn et al, 2013).

Another regulation that was recently put into effect is the reduction of trans-fatty acids in foodstuffs. This came as a result of concerns over the link between trans-fatty acids and increased risk of coronary heart disease, which has been found in epidemiological studies (Ascherio et al, 1999). The regulations were passed in February 2011 in the Foodstuffs, Cosmetic and Disinfectants Act of 1972 and prohibit the sale, manufacturing, and importation of any foods of which the content of Trans-Fat exceeds 2 grams per 100 grams of oil or fat (South African Department of Health, 2011: 4). This means that major sources of trans-fats, such as deep-fried fast foods, bakery products, packaged snack foods, margarines, and crackers (Mozaffarian, 2006: 1601), will be affected. However, these South African regulations are not specific about the labelling of naturally produced trans-fatty acids, meaning that some companies in such industries as the dairy industry will not be affected by these regulations (Puoane et al, 2013: 120).

New food labelling and advertising legislation has also recently come into effect which seeks to create a standard format for the labelling and advertising of all food products (South African Department of Health, 2014). This includes the prohibition of any claims on food labels and in advertising – so as to ensure that consumers are not misguided by untrue health claims (South African Department of Health, 2014).

The policies developed by the South African government (coupled with the self-regulation pledges and proposed public regulations on Big Food) could have a significant impact on the South African and global food environments. However, it is important to note that these regulations do not necessarily directly address the main determinants of nutritional status. Indeed, individuals who are uneducated and uninformed could add their own unhealthy ingredients back into the foods that have been regulated. Therefore, as the DoH themselves have admitted, nutrition interventions cannot rely on policies alone and thus need a multi-sectorial approach when it comes to implementing effective change with regards to consumers' consumption behaviours.

2.9. The Super 7 Campaign

In light of the above information on the current nutritional climate both globally and nationally, it is clear that nutrition interventions are required in order to decrease the different levels of malnutrition. This study therefore attempts to develop a series of guidelines that

could be utilised in nutrition interventions – particularly those that are media-centric in nature. In order to do this, a hypothetical campaign has been designed and will be referenced throughout this paper in order to develop and produce a series of guidelines that are enhanced through the examination of available information, sound theoretical knowledge, and the real world experiences of individuals from the target population.

The Super 7 campaign is a hypothetical project that aims to increase the intake of certain fruits and vegetables amongst the poorer population of South Africa – particularly those living in peri-urban areas. Drawing on the framework for promoting fruit and vegetable consumptions established by FAO and WHO in 2004, the campaign seeks to encourage consumers to buy certain fruits and vegetables through an educational campaign, and through methods such as offering discounts, creating attractive packaging, and developing media-based projects to encourage their consumption. It is proposed to focus on just seven inexpensive fruits and vegetables that are carefully chosen due to the nutrients that they provide (see Appendix A for a more detailed outline of these nutrients). The first three are apples, bananas, and carrots that usefully cluster into the acronym ABC, all of which are ready-to-eat foods. The second four foods in this proposed campaign are sweet potatoes, onions, tomatoes, and spinach (SPOTS). These are foods whose digestibility and palatability is increased when they are cooked as part of multi-ingredient dishes (Naude, 2013: 51). The campaign also aims to encourage consumers to increase their overall fruit and vegetable intake beyond these selected ‘super seven’ products. Therefore, even though the Super 7 foods are explored in other areas of this study, the campaign also aims at promoting the benefits of fruits and vegetables in general.

In terms of nutrition, fruits and vegetables are low in energy, comparatively rich in micronutrients, phytochemical and other bioactive compounds, and are good sources of dietary fibre (Naude, 2013: 46). Without any added fats or sugars, most fruits and vegetables are relatively low in calories and are important sources of nutrients – including foliate, magnesium, iron, potassium, fibre, and vitamins A, C, and K (Miller & Knudson, 2014: 2). Indeed, after examining the Super 7 foods (Appendix A), it is evident that fruit and vegetables have been associated with protection from and treatment of chronic diseases such as heart disease, cancer, diabetes and hypertension (NICUS, 2007a: 1). Therefore, nutritionists conclude that interventions aimed at improving the intake of fruits and vegetables amongst South Africans could potentially reduce the burden of nutrition-related diseases including

prevalent cancers (lung and gastrointestinal), coronary heart disease, ischaemic heart disease and cerebrovascular accidents in adults (Naude, 2013: 46).

A wide variety of fruits and vegetables should be consumed, with a particular focus on eating vegetables and fruits from the many different available categories (Naude, 2013: 51). This consumption of a wide variety of fruits and vegetables is to ensure that all the relevant vitamins and nutrients can be obtained. Even canned or frozen fruits and vegetables can be beneficial as research suggests that freezing and canning could preserve overall nutrient value (Miller & Knudson, 2014: 3). 100% fruit juice can also be a good source of micronutrients, although much of the fibre is lost (Naude, 2013: 51). However, individuals still need to be wary of many fruit juices in supermarkets, as many products are not 100% fruit juice and contain added sugar (Naude, 2013: 51).

Before beginning any nutrition intervention, designers need to understand their target audiences. As argued above, socio-economic status and geographic positioning can have an effect not only on individuals' consumption behaviours, but also on their perceptions of the accessibility and affordability of healthy foods. Understanding the current food environment with regards to the cost of food and the pervasive presence of 'Big Food' means that there is an awareness of the competing factors that affect nutrition on a foundational level. Indeed it is clear that in order to overcome the barriers laid out in these sections, an intervention needs to adopt the primary principles utilised by 'Big Food'. This includes the need for a campaign to increase its selected foods' availability, affordability, and acceptability.

Although the Super 7 campaign is conceptualised primarily as a media-centric nutrition intervention, there is still a need to address the affordability of these seven foods as well as increasing their presence in shopping centres and spaza shops.

Due to issues related to the social construction of body image and body weight, interventions aimed at purely increasing healthy behaviours should by and large not attempt to use body image as a method of encouraging different behaviours. Indeed, encouraging weight loss or weight gain could confuse South African consumers as there is already much confusion about the desirability for slim or overweight bodies, or, put differently, desirability is highly segmented by race, class and income. Therefore, campaigns focusing on nutritional behaviour change, especially if they aspire to appeal across segments, should rather encourage healthy

lifestyles and should ignore becoming mixed up in the debates surrounding the social construction of body image.

This is a schematic representation of what a Super-7 campaign would like, based on the insights generated in this Chapter (i.e. primarily an understanding of the social determinants of health).

Table 3: Initial Super 7 Campaign Strategies – insights drawn from Chapter Two

Initial Strategies	Explanations
Understanding the target audience	A key initial step in any media-centric nutrition intervention is to understand the target consumers. This initial Super 7 campaign focuses on isiXhosa speakers in the Eastern Cape. Specific insights into local discourses around food, body image and health would need to be generated by any campaign that hoped to resonate with this audience. Even regional factors, and degrees of urbanisation (Grahamstown is regarded as ‘peri-urban’) need to be taken into account.
Understanding the food environment	For the Super 7 Campaign, and for general nutrition campaigns, arguably the main factors that need to be taken into consideration are the cost of food and the prevalence of ‘Big Food’. These are both significant challenges in South Africa.
Understanding other constraints	Aside from the food environment, there could be other constraints preventing the target audience from participating in the desired behaviour. For this study, these include lack of education and the complexities of the lack of social integration in South Africa. Campaigns perceived as targeting only the poor are often rejected as stigmatizing in this context. So any campaign might have to target the entire community, rich and poor, black and white, while still developing segmented marketing materials.
Increasing Affordability	In order to place itself in the food environment, nutrition campaigns should attempt to increase the affordability of the foods which they promote. This is so that it can overcome the barriers associated with the cost of food. Therefore, for the Super 7 Campaign to be maximally effective, it would need to work with local suppliers and possibly supermarket chains, in an attempt to get some ‘at the till’ discounts for these products. Or, the packaging of these products could be done in such a way that allows for a discounted ‘bundle’ (i.e. the bundling of the apples, bananas, and carrots (ABCs) and the bundling of sweet potatoes, onions, tomatoes, and spinach (SPOTS)).
Increasing Availability	In order to overcome the pervasiveness of ‘Big Food’, nutrition campaigns should increase the availability of the food items that they are promoting. For the Super 7, this could include creating partnerships with local supermarkets and spaza shops in order to increase the availability and quality of the Super 7 fruits and vegetables.
Increasing	Along with increasing availability, another tactic to overcome the pervasive

Acceptability	power of 'Big Food' is to increase the acceptability of the Super 7 foods. This can be done in numerous ways, including the implementation of an educational component as well as through the use of the media in order to 'normalise' the consumption of the Super 7 foods.
Issue of Body Weight and Body Image	Due to the fact that there is much contestation with regards to body weight and whether it is socially constructed or not, nutrition campaigns should promote healthy eating without mentioning body weight/image. Therefore, the campaign could reduce malnutrition while not problematizing the issue of body weight.

Overall, there are clearly a number of tactics that can be utilised by the Super 7 campaign to reduce the various barriers that prevent individuals from performing healthy behaviours. However, due to the fact that this campaign is essentially media-centric, it also becomes important to examine the various media and behavioural theories that could be utilised in various nutrition intervention projects. Therefore, the next chapter will examine the various available theories and will attempt to incorporate them within the Super 7 strategies to further enhance the potential effectiveness of such a campaign.

CHAPTER THREE:

Media Theory and Behaviour Change Communication

3.1 The Role of Communication in Nutrition Interventions

With regards to the planning of media-centric nutritional interventions, a wide variety of factors need to be understood. The previous chapter provided an in-depth outline of the current nutritional situation as well as the determining factors that shape the South African landscape. They also outlined how notions of health, weight, and nutrition are socially constructed, and how they are influenced by various structural factors. These factors are the vital context that any intervention planners need to take heed of, in terms of understanding the current food environment (what people currently eat and why) and the social shapers that constrain and influence individual's dietary choices and habits. However, this chapter will focus particularly on ways in which the media can potentially influence and better the nutritional situation. Therefore, this chapter will begin by examining and assessing relevant theories from Media Studies and Behaviour Change Communication (BCC) that could be utilised in media-centric interventions. It will then move on to discuss practical applications and guidelines with regards to media-orientated health campaigns, and will thereafter draw from both theory and practice in order to further inform the hypothetical Super 7 Campaign.

Falling under the socio-cultural level in the determinants of nutrition, the media has similar effects as that of education and social integration. This is seen by the fact that the media can act as an educating agent while also acting as a method of social integration. With regards to health and the media, public health communication is one method of increasing the personal significance of health issues for audiences, promoting knowledge and information about appropriate diets, and changing norms and beliefs about healthy diets that could potentially change dietary behaviours (Viswanath & Bond, 2007: S20). Indeed, there is now substantial evidence that public health communications can be successful in preventing risky behaviours and promoting healthy ones (Viswanath & Bond, 2007: S20). However, according to many academics, the effects that the media have on individuals' education, social integration, beliefs and behaviour are still not clear-cut. Therefore, this chapter will examine the theories, models, and definitions surrounding media effects and behaviour change.

3.2 Media Study Theories

From international, national and local news, to movies, television programmes and music, we are constantly surrounded by media. Therefore, it seems easy to deduce that the media must

have some effect on our thinking and behaviour. Indeed, communication has been utilised by those in health education due to its perceived power and influence in shaping human affairs (Finnegan Jr & Viswanath, 2008: 364). As a result of this belief, different models are available to assess communication impact: empirical, critical, or applied approaches (Finnegan Jr & Viswanath, 2008: 364). This section will briefly examine a few of these models and theories in order to gain an understanding about the various perceived influences that the media have on audiences. It will then assess which of these theories are relevant for use in a media-centric nutrition intervention.

Many theories of communication have been organised in various ways, however, this section will examine relevant theories ranging from ‘short-term’ to ‘long-term’. Therefore, a variety of theories can be explained through their relation to individual, interpersonal, group/organisational, and community/societal levels. This is mainly due to the fact that there is no grand unifying communication theory, despite the fact that there is a pervasive impact of communication and that it has centrality to understanding human behaviour (Finnegan Jr & Viswanath, 2008: 364). As a result of this, this section will deal with theories circulating around media effects, before examining select theories that have particular relevance to health communication.

3.2.1 Media Effect Theories

‘Media effects’ is a term that is used to describe the impact that the media has through its dissemination of ideas, images, themes, and stories. Therefore, the media can help the knowledge, opinions, behaviours, and attitudes of individuals, groups, institutions, or communities (Finnegan Jr & Viswanath, 2008: 367). However, due to complex variables at play in society, the influence of the media is difficult to predict (Fourie, 2009: 229). Indeed there are many influencing factors that could affect the outcome of a media message – these include: “characteristics of target audiences (e.g. their readiness for change, the ways they process information), the complexity of the health issue, the presence of competing messages, and the nature of the health message” (National Cancer Institute, 2005: 30). This means that, in general, although researchers have used various techniques to determine the effects of the media, the results are still not clear-cut. At most, we can attempt to understand the different kinds of potential effects that the media can have on certain cognitive functions in our thinking (Fourie, 2009: 229).

There are a number of behavioural effects with regards to the media. These include the fact that media can influence not only our cognitive thoughts about a topic, but it can also affect our feelings and behaviours towards certain ideas. However, it is important to note that audiences may not always be aware of these effects that the media has on them – indeed, effects can be either overt or implicit (Fourie, 2009: 230). Therefore, it is difficult to judge how influential certain media messages are due to the fact that consumers themselves may not be aware of how the messages are affecting them. Other behavioural effects include those relating to time scale and message exposure. Indeed, short-term media exposure to a single message could have very little effect, while intermediate and long-term media exposure could have a variety of effects that shift people’s thoughts, feelings, and behaviours. However, other factors could be at play when examining the intermediate and long-term effects of media messages, thus making them difficult to isolate.

Both propaganda and media campaigns have certain intended effects that attempt to change individuals’ thoughts and feelings about a topic through carefully designed messages. However, there are also unplanned and unforeseen effects that propaganda, media campaigns, and indeed any type of media could have on their audiences. These include such things as cultural change, the encouragement or discouragement of socialisation, institutional change, changing or reinforcing perceptions of reality, or collective reactions from audiences (Fourie, 2009: 231-232). Due to the fact that media messages can have both planned and unplanned effects on their audiences (and the fact that many effects are not clear-cut), it is absolutely critical that such things as media-centric interventions need to carefully plan their campaigns in order to limit unforeseen and potentially negative effects on their target audiences. Therefore, media effect theories need to be critically examined and assessed in order to determine the best methods in which a campaign can proceed. In this study, there will be an examination and assessment of a few relevant media effect theories that are related to health intervention campaigns and that can be particularly employed by the Super 7 Campaign.

3.2.1.1 Two-Step-Flow Theory

The first model worth considering is the short-term impact theory known as the ‘two-step-flow theory’. This concept essentially posits that mass media users are not passive, isolated individuals, but members of a structured society (Fourie, 2009: 234-5). Therefore, media

users are active participants who use their own knowledge and experiences to make sense and interpret media messages. Developed by J.T. Klapper in the 1960s, this model rejects the ‘hypodermic needle’ theory which believed that the mass media had a very strong and pervasive effect on individuals and society (Neuman & Guggenheim, 2011: 172). The two-step flow theory concludes that media communications cannot change individuals’ behaviours on its own and that there are multitudes of contributing factors towards people’s actions (Fourie, 2009: 235). With regards to this study in particular, this theory is relevant as media campaigns need to recognise the fact that audiences are active receivers of messages and that there are a number of factors that could affect their reactions and perceptions of different media messages. In other words, with regards to nutrition interventions, any media produced needs to determine and take into account the various factors that affect individuals’ food consumption behaviours – a process which has already been attempted in the previous chapter.

When examining short-term media effect theories it is important to note that conclusions drawn about them are that their effects are relatively weak. For example, De Fleur and Dennis concluded that:

“... the preponderance of evidence about the effects of mass communication that emerged from these theories and decades of research, led to the general conclusion that the mass media are quite limited in their influences on people who select and attend to any particular message. In short, six decades of research revealed an overall picture of weak [short-term] effects.”

(De Fleur & Dennis In Fourie, 2009: 237).

Therefore, in terms of the short-term theories, there is little connecting them to strong media effects. Therefore, long-term effect theories need to be considered. This is because long-term media effect theories take into account the fact that media messages may not have an immediate impact on people’s thinking and behaviour, but that they can potentially affect behaviour over a longer period of exposure to media content (Fourie, 2009: 237). Although there are plenty of longer-term media effect theories, this study will primarily focus on two theories that provide some useful insights for those wanting to create media-based social change campaigns. These include the knowledge-gap theory, and the agenda setting theory.

3.2.1.2 The Knowledge-Gap Theory

Conventional wisdom has long held that public education can be used to resolve multiple social issues (Finnegan Jr & Viswanath, 2008: 371). However, it has been shown that public education is not as effective as people believe due to a variety of factors, including the fact that knowledge and information is not distributed equally across populations (Finnegan Jr & Viswanath, 2008: 371). Indeed, the knowledge gap hypothesis posits that:

“As the infusion of mass media information into a social system increases, segments of the population with higher socioeconomic status tend to acquire this information at a faster rate than the lower status segments, so that the gap in knowledge between these segments tends to increase rather than decrease.”

(Tichenor, Donohue & Olien In Kwak, 1999: 385).

Therefore, the Knowledge-Gap Hypothesis arises from a sociological tradition that emphasises how the structure and organisation of communities and societies function as a means of social control and conflict management (Finnegan Jr & Viswanath, 2008: 371). In terms of media effects, this hypothesis has advanced the ideas surrounding these effects in two important areas. Firstly, it contradicts the belief that media campaigns are straightforward and simple cures for social problems (Finnegan Jr & Viswanath, 2008: 371). And secondly, it suggests that media has different effects on people from differing social classes and social-structural conditions (Finnegan Jr & Viswanath, 2008: 371). Therefore, much like how Chapter Two emphasises the various determinants of nutrition, this theory draws attention to the fact that there is a role played by the social and structural environment in shaping media impact on individuals (Finnegan Jr & Viswanath, 2008: 371). As a result of this belief, researchers have developed ideas about certain contingent and contributory conditions that affect knowledge gaps and also present opportunities for applications in public health campaigns (Finnegan Jr & Viswanath, 2008: 372). These conditions include content and channel factors, social conflict and mobilisation, community structure and pluralism, and motivational factors.

In terms of the content and channel factors, many public health practitioners believe that health information should broadly appeal to SES groups – despite the fact that many studies have shown that the domain of health is heavily affected by SES-based knowledge gaps

(Finnegan Jr & Viswanath, 2008: 373). This is due to the fact that health affects every person in some way. However, this does not account for other factors that affect knowledge gaps. For example, the channels in which audiences receive media have some effects on the knowledge gap. This could be seen with the fact that consumers of print media are more likely to have a formal education compared to non-readers. Television and radio, on the other hand, reaches a far wider selection of consumers from different SES groups. Therefore, a point of entry for public health communications could be through the use of broadcast channels.

It is interesting to note that media studies have found that significant differences in knowledge are less likely when social conflict or community mobilisation occur (Finnegan Jr & Viswanath, 2008: 373). This is primarily due to the fact that social conflict increases public salience, which in turn causes greater interpersonal communication concerning certain issues. For example, the controversial Tim Noakes diet could get individuals interested in the topic of nutrition, whether or not they agree with the diet. It has also been found that even if overt conflicts are not present, mobilisation of certain groups and communities have a similar effect.

Although community structure and pluralism is a largely un-modifiable factor, they have still been shown to affect knowledge gaps (Finnegan Jr & Viswanath, 2008: 374). However, studies seem to have conflicting results when it comes to comparing large communities to that of small communities. This is due to the fact that some studies claim that large communities have larger levels of diversity and specialisation, and therefore are more likely to have large knowledge gaps (Finnegan Jr & Viswanath, 2008: 374). On the other hand, other studies have found that the opposite is true, and that, particularly in health communication, knowledge gaps are more likely in smaller communities. One explanation for this is that the diverse sources of information and media in larger communities give such societies an advantage over smaller ones (Finnegan Jr & Viswanath, 2008: 374).

Finally, motivational factors are often considered of high importance when discussing knowledge gaps. This is due to the fact that theorists Ettema and Kline (1977) argued that “gaps between higher- and lower-SES groups were not necessarily due to the effects of less formal education or economic deprivation but to differential levels of motivation, interest, and salience in specific topics” (Finnegan Jr & Viswanath, 2008: 374). However, this claim

has not been fully proven as there are many conflicting studies that have generated different results (Fredin, Monnett, and Kosicki, 1994; McLeod and Perse, 1994; Viswanath et al, 1993).

Overall, it is clear that individual-level and social-structural variables are important in explaining knowledge gaps (Finnegan Jr & Viswanath, 2008: 374). Therefore, it becomes obvious that there are areas in which modifiable factors can be addressed so that media interventions have a greater potential in addressing public problems. However, it is still important to note that studies surrounding knowledge gaps generally urge attention to the structural barriers that prevent effective campaigns (Finnegan Jr & Viswanath, 2008: 375). As a result, if a media intervention is to be successful in the field of nutrition, the determinants of this field need to be fully understood in order to counteract any potential barriers. Therefore, the Knowledge Gap Hypothesis could be the most important media theory with regards to this study as it seems to attempt to understand and confront the foundational and socio-cultural factors that could prevent a successful nutrition intervention.

3.2.1.3 Agenda Setting Theory

Agenda setting is the basic assumption that, consciously or unconsciously, the media create a particular image of reality (Fourie, 2009: 244). The original hypothesis of this concept “implied a strong if not direct link between the media’s agenda of important issues (reflected in news coverage) and the public’s opinion about what issues are important (the causal direction flows from the media to the public)” (Finnegan Jr & Viswanath, 2008: 375). Therefore, as Fourie claims, “the omission of certain events and issues, and the overemphasis of others, establishes a particular way for media users to think about reality” (Fourie, 2009: 244). Agenda setting generally involves three aspects: 1) setting what is covered by the media (media agenda), 2) setting what people should be thinking about (public agenda), and 3) setting the policy agenda concerning the regulatory or legislative actions on issues (National Cancer Institute, 2005: 31). Therefore, theorists claim that the agenda setting theory highlights the fact that the mass media may not tell the public *what* to think, but that they are more effective at telling the public what to think *about* (National Cancer Institute, 2005: 31).

Recent agenda setting research has gone beyond the simple logic of the media merely selecting which content to cover – they now posit that the media provide ways of thinking

about certain topics through the development and use of signs, symbols, terms, and particular sources of information (Finnegan Jr & Viswanath, 2008: 375). Therefore, as Finnegan Jr and Viswanath (2008: 375) claim, “groups, institutions, and advocates compete to identify problems, to move them onto the public agenda, *and* to define the issues symbolically”. This has important implications for public health communications as it highlights the importance of not only bringing health issues to the public’s attention, but to also frame them in ways that encourage behaviour change. With this in mind, the concept of framing becomes important in terms of media effects.

Compared to agenda setting, framing rather focuses on the media’s *representation*, treatment and even production of issues (Fourie, 2009: 245). As a media effect, “‘framing’ describes the influence on the public of the news angles used by journalists, the interpretative and ideological frameworks from which journalists report an issue, and the contextualisation of news reports within a specific (ideological) framework” (Fourie, 2009: 245). Therefore, a media frame can be defined as: “the central organising idea for news content that supplies a context and suggest what the issue is through the use of selection, emphasis, exclusion, and elaboration” (Tankard et al In Weaver, 2007: 143). In terms of public health communication, framing can be used to in order to positively highlight health behaviours, while negatively highlighting dangerous and unhealthy behaviours.

There is a lot of contestation about the different kinds of media effects, and whether the media effects model has any grounding in legitimate theory. However, elements of these media effect theories need to be taken into account when examining media-orientated behaviour change campaigns. This is due to the fact that two core questions in media effect theories include: “1) What factors affect the likelihood that a person will be exposed to a given message? 2) How do media effects vary with the amount of exposure to that message?” (National Cancer Institute, 2005: 30).

Although not all media theories can be relevant to public health communications, it is still important that these theories be discussed when designing potential health communication campaigns. This is primarily due to the fact that intervention designers should be aware of the effect that media-based interventions could have on potential audiences. Indeed, through this section, it becomes clear that media influence on the public can come from routine consumption of different forms of media as well as from planned distribution of media

through campaigns and interventions (Finnegan Jr & Viswanath, 2008: 384). However, due to the fact that there is much criticism over media effect theories, and that this study is focusing on health promotion, there still needs to be an examination and assessment of the primary health promotion theories that can also come into play when designing and implementing a media-centric nutrition intervention.

3.3 Behaviour Change Communication Theories

According to Fitzgibbon et al (2007: S64-S65), health intervention campaigns should draw from a variety of communication theories. This is due to the fact that various elements of different theories can be potentially useful, and that even though they should be carefully implemented, media interventions should still employ as large a number of tactics as possible. Therefore, along with the examination of media effect theories, there also needs to be an examination and assessment of an important theoretical model that draws from a variety of Behaviour Change Communications (BCCs) employed by health promotion practitioners.

It is important to note here that although this thesis draws primarily from a theoretical model under BCC, Social Change Communication (SCC) is also taken into account. While BCC theories primarily focus on changing individuals' behaviours, SCC attempts to focus on communities as a unit for change (UNICEF, 2015). At its core, Social Change Communication requires a non-linear model that is cyclical and leads to mutual change "rather than one-sided individual change" (Figueroa et al, 2002: 2). It requires opening up a dialogue, horizontal information sharing, equitable participation, local ownership and empowerment (Figueroa et al, 2002: 3). Therefore, although it does praise BCC models for discovering factors behind individuals' behaviours (Figueroa et al, 2002: 3), it critiques these models for not factoring in external constraints (both social and physical) that prevent certain behaviours while also being unable to target multiple social groups and subgroups (Figueroa et al, 2002: 2-3). As a result of the recognition of SCC in this study, there is a movement away from one single model from Behaviour Change Communication, and rather a focus on an integrated model that takes into account factors from SCC – primarily the inclusion of the Social Ecological Model (SEM) and a rejection of Knowledge, Attitudes and Practice (KAP) studies. Indeed, this can be seen in the previous chapter which understands the SEM position that there are various, interlinking factors that affect nutrition – from the individual to

personal relationships, community structures, organisational institutions, and the policy/enabling environment (UNICEF, 2004: 2). This is therefore a firm rejection of KAP studies, which follows the idea that knowledge is the primary obstacle to change (Gumucio, 2011: 5).

With these critiques in mind, this study will root itself in an integrated BCC model that takes into account the multiple interlinking internal and external factors. The Integrated Behavioural Model (IBM), which is a combination of three important health behaviour change theories, will be explored throughout this section in order to understand its relevance in using it when designing and implementing a media-centric nutrition intervention. The three primary theories that the IBM draw on include The Health Belief Model (HBM), The Theory of Reasoned Action and The Theory of Planned Behaviour (TRA/TPB), and Social Cognitive Theory (SCT) – all of which have often been drawn on in order to understand the effects of media exposure at the individual level (Finnegan Jr & Viswanath, 2008: 367). Therefore, this section will explore the IBM and its contributing theories so that the potential role of the media in behaviour change can be identified.

3.3.1 An Integrated Behavioural Model

An integrated health promotion theoretical model has been developed over the past few years and has been included in numerous discussions about health promotion theories and models (Montaño & Ksprzyk, 2008; Fishbein & Yzer, 2003; National Cancer Institute, 2005).

Dubbed the Integrated Behavioural Model (IBM) by Montaño & Ksprzyk (2008), this model is primarily based on TRA/TPB and incorporates other factors from SCT and HBM (Fishbein & Yzer, 2003). This is very similar to TRA/TPB (the belief that behavioural intent is the primary factor motivating certain behaviours (Montaño & Ksprzyk, 2008: 77-8)), as well as through the fact that it draws certain ideas from both SCT and HBM – ideas which will be explored throughout this section.

Although behavioural intent is shown to be the primary determinant of behaviour, IBM also posits that there are four other components that affect behaviour. These include (1) knowledge and skills to perform the behaviour, (2) salience of the behaviour, (3) environmental constraints, and (4) habit. For example, if a person is intending to eat healthier foods, they must also have a certain level of knowledge about which foods are healthy, as

well as the skills to prepare the healthy foods in the correct manner. Secondly, there should be minimal environmental constraints (such as the cost of food). Thirdly, eating healthy food should be salient and important to that person. Finally, depending on how often an individual has eaten healthily, this behaviour could become a habit – so that intention becomes less important in determining behavioural performance (Montaño & Ksprzyk, 2008: 78). An immediate implication of this section of the model is that different types of interventions will be necessary for people who have formed an intention but are unable to act upon it, compared to those who actually have little or no intention to perform the behaviour (Fishbein & Yzer, 2003: 166).

Therefore, if the environmental constraints are too high and the knowledge and skills are too low amongst a population, then an intervention will be most effective if it focusses on these aspects. The intervention will therefore differ for a population where the environmental constraints are low and the knowledge and skills are high, but the intention to perform the behaviour is absent. However, it is important to note that, similar to the TRA/TPB, behavioural intention also relies on attitude, perceived norm, and personal agency.

IBM defines two different types of attitudes that have equal effect on behavioural intention (Montaño & Ksprzyk, 2008: 78). These are described as experiential attitude and instrumental attitude. Experiential attitude is defined as “the individual’s emotional response to the idea of performing a recommended behaviour” (Montaño & Ksprzyk, 2008: 78). Therefore, individuals with negative responses to a behaviour are less likely to perform it, while those with positive responses are more likely to perform the behaviour. Instrumental attitude, according to Montaño and Ksprzyk, is cognitively based and is “determined by beliefs about outcomes of behavioural performance” (Montaño & Ksprzyk, 2008: 78) – very similar to the idea of attitude in TRA/TPB.

The second concept, perceived norms, reflects the social pressure on feelings to perform or not perform a particular behaviour (Montaño & Ksprzyk, 2008: 78). Therefore, as Fishbein and Yzer claim, “the more a person believes that specific others think he or she should or should not perform the behaviour in question, and the more motivated a person is to comply with those specific others, the stronger will be the subjective norm to perform or not perform the behaviour” (Fishbein & Yzer, 2003: 168). Perceived norms are also comprised of two important factors: injunctive norms (normative beliefs about what other, relative people think

about the behaviour), and descriptive norms (perceptions about what other individuals in a certain group are actually doing) (Montaño & Ksprzyk, 2008: 79). Including these different types of perceived norms therefore captures a sense of social identity amongst certain groups of people, which, according to some theorists, is an indicator of normative influences (Montaño & Ksprzyk, 2008: 79).

Finally, personal agency is also included in the IBM model as it takes the idea of perceived control from TRA/ TPB while combining it with the idea of self-efficacy from SCT and HBM. Therefore, although these factors have been described previously under different theories, personal agency takes into account both individual's perceived control that they have over a certain behaviour, and their confidence in their ability to perform the behaviour (Montaño & Ksprzyk, 2008: 79). See the below figure for a clear representation of this particular framework:

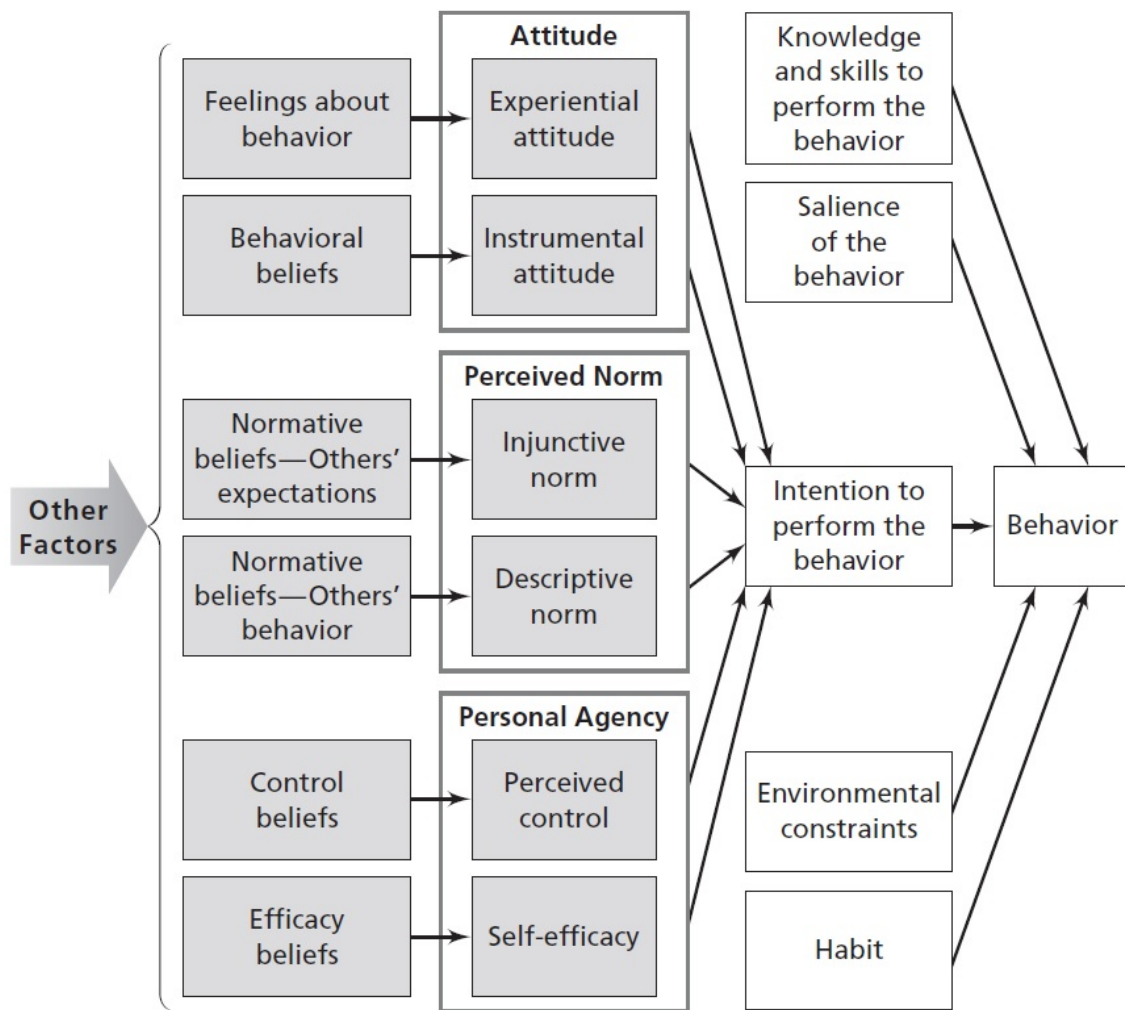


Figure 1: Integrated Belief Model (Montaño & Ksprzyk, 2008: 77)

Before examining the different methods in which this theoretical framework can be used to determine certain behavioural intentions, it is critical to identify the reason why this study values the IBM over other theoretical models. The main reason for this is the fact that the IBM, as stated above, is a combination of various widely used behavioural theories, including the HBM, the SCT, and the TRA/TPB (Fishbein & Yzer, 2003). This combination is useful as it takes various essential elements from each of these theories and combines them in a framework that is ideal for this study. Firstly, the IBM is largely based on the TRA/TPB belief that behaviours are primarily determined by behavioural intent. This is essential as many critiques of such theories as the HBM is that they view individuals as solely 'rational' decision-makers, and although this can also be said about the IBM, this framework seems to hold the idea that behavioural intent is made up of a variety of personal factors and beliefs, regardless of whether they are rational, logical, or correct by some objective standard (Montaño & Ksprzyk, 2008: 76). In fact, a main strength of the IBM is the fact that it provides a framework to discover those reasons and to understand individuals' behaviours by identifying, measuring, and combining beliefs relevant to individuals or groups (Montaño & Ksprzyk, 2008: 76).

Secondly, although the IBM agrees with the TRA/TPB with regards to the importance of behavioural intent, it also includes a major element from both the HBM and the SCT – that is the issue of self-efficacy (Montaño & Ksprzyk, 2008: 79). Although it is combined in the IBM with the idea of perceived control to form personal agency, the confidence and belief in one's ability to perform a behaviour seems to be an essential determining factor behind healthy behaviours (Orji et al, 2012: 18). Therefore, the IBM seems to agree with the notion that there is some level of personal agency involved in individuals' decision making.

Thirdly, the reason why this theoretical framework is considered superior to others is due to the fact that, unlike the TRA/TPB, the IBM recognises the fact that behaviour is not only made up of behavioural intent, but that it is also influenced by a number of external factors. These include the knowledge and skills to perform a behaviour, the salience of a behaviour, environmental constraints, and habit (Montaño & Ksprzyk, 2008: 77). Therefore, it seems as though the IBM is better-rounded when considering the fact that there are multiple factors that could potentially affect specific behaviours.

Finally, as will be seen below, using the relatively simple-to-understand framework of the IBM, it is possible to not only determine the individual determinants of people's behaviours and behavioural intents, but it is also easier to investigate and understand the interconnectedness between the various elements. The three categories of theoretical constructs in the IBM (attitude, perceived norm, and perceived agency) all have relative importance in determining behavioural intention, and differ between different behaviours and different populations (Montaño & Ksprzyk, 2008: 79). Although theorists can develop measures of attitude, perceived norm and perceived agency, they still cannot identify a particular population's behavioural beliefs without first examining and questioning the population in question (Fishbein & Yzer, 2003: 168). Therefore, in order to design an effective intervention to influence behaviour, investigators and researchers must go to members within certain populations in order to determine the degree to which behavioural intention is influenced by the various determinants (Montaño & Ksprzyk, 2008: 79). As a result of this belief, an essential step in the application of IBM is to conduct interviews with the population being studied in order to understand the attitudes, norms, and personal agency beliefs that they hold about a particular behaviour (Montaño & Ksprzyk, 2008: 81). Although some theorists believe that IBM and the related theories are too 'Western' (Airhihenbuwa & Obregon, 2000), it is exactly this elicitation process that makes these theories able to deal with cultural variation. However, it is important to note that this misrepresentation about the model being too 'Western' could have come from the fact that investigators often measure beliefs that *they* think should be relevant, rather than focussing on beliefs that are relevant within the different cultures (Montaño & Ksprzyk, 2008: 81).

As these three aspects (attitudes, normative beliefs, and personal agency) differ according to cultures and populations, it is also important to investigate and understand how external variables differ among various groups (Montaño & Ksprzyk, 2008: 81). An understanding of these external variables (including distal variables, demographic variables, culture, stereotypes and stigmas, personality, other individual variables, and exposure to the media) will therefore allow investigators an insight into whether or not interventions need to be designed differently for different segments of the population – particularly if there are clear differences in belief patterns (Montaño & Ksprzyk, 2008: 81).

According to the Fishbein and Yzer (2003), the first implication in using IBM is to identify the behaviour that is the target for change or reinforcement (Fishbein & Yzer, 2003: 168). This is

due to the fact that an important lesson taken from behavioural interventions is that they are most effective when they are directed at changing specific behaviours rather than behavioural categories or goals (Fishbein & Yzer, 2003: 168). Therefore, for an intervention aimed at encouraging healthy eating, investigators should aim to change one behaviour in particular (such as increasing the consumption of certain fruits and vegetables per day) rather than just encouraging individuals to generally eat healthier. The definition of a behaviour involves several elements: the action (getting/using/buying), the target (apples/bananas/carrots/etc.), and the context (at the supermarket/the pantry) (Fishbein & Yzer, 2003: 168-9). Therefore, it is clear that a change in any one of these aspects changes the behaviour under consideration (Fishbein & Yzer, 2003: 169).

These elements can also have the supplementation of time (Fishbein & Yzer, 2003: 169). For example, the consumption of fruits and vegetables should be done every day, including lunch-time and supper-time. Once these behaviours have been identified, the model can be utilized to explain why some individuals are performing the behaviour while others are not (Fishbein & Yzer, 2003: 169). Through this explanation, it is then easy for investigators to, firstly, determine whether intention is influenced primarily by attitudes, norms, or self-efficacy, and secondly, to identify the specific beliefs that discriminate between those who do or do not intend to perform the behaviour (Fishbein & Yzer, 2003: 169). Therefore, although the ultimate goal of media-centric health interventions should be to encourage or change a certain behaviour, it must be recognised that communication, at best, can only change or create specific beliefs (Fishbein & Yzer, 2003: 169).

Overall, the Integrated Behavioural Model is important for this study as it allows for a framework in which individuals' food consumption behaviours can be understood. Thereafter, through this examination of the factors that affect particular populations' behaviours, it should become easier to understand the methods and guidelines that would need to be implemented in order for a media-centric nutrition intervention to be successful. However, before the actual examination of individuals' food consumption behaviours in Grahamstown can take place, an examination and analysis of health communication campaigns and their guidelines needs to be done.

3.4 Health Communication Campaigns

Before examining the strategies and approaches used in various media campaigns, it is important to understand what media campaigns are in terms of public health communication, as well as understanding how successful these campaigns generally are. According to Snyder (2007), “the term *campaign* includes organised, communication-based *interventions* aimed at large groups of people and *social marketing* efforts that include communication activities” (Snyder, 2007: S32). Media campaigns have been used in the past and the present to promote a wide variety of health behaviours, including seat belt use, dietary change, medication use, exercise, dental care, social support, substance prevention and cessation, family planning, use of health services, and testing and screening for diseases (Snyder, 2007: S32). And through the use of traditional mediums (such as television, radio, and newspapers), media-based health campaigns have also used various other activities to spread promotion. Including posters, handouts, public service announcements, discussion groups, workplace or clinic-based counselling, and in-school presentations (Snyder, 2007: S32). However, such campaigns are often competing with factors such as pervasive product marketing, powerful social norms, and behaviours driven by addiction or habit (Wakefield et al, 2010: 1261). This therefore begs the question: how successful are media-based intervention campaigns? Can they change individual’s health behaviours – particularly those relating to nutrition?

According to the Wakefield et al’s review, mass media campaigns can indeed produce positive change or prevent negative actions in health-related behaviours (Wakefield et al, 2010: 1261). This is primarily due to the great potential media campaigns have in disseminating “well defined behaviourally focused messages to large audiences repeatedly, over time, in an incidental manner, and at a low cost per head” (Wakefield et al, 2010: 1261). However, as Wakefield et al notes, this potential is not always realised:

“Campaign messages can fall short and even backfire; exposure of audiences to the message might not meet expectations, hindered by inadequate funding, the increasingly fractured and cluttered media environment, use of inappropriate or poorly researched format (e.g., boring factual messages or age-inappropriate content), or a combination of these features; homogeneous messages might not be persuasive to heterogeneous audiences; and campaigns might address behaviours that audiences lack the resources to change.”
(Wakefield et al, 2010: 1261).

Therefore, in order for a media-based intervention to be successful, they need to be carefully planned out with informed theory-based strategies and approaches.

Overall, there are two methods that affect behaviour change: direct methods and indirect methods (Wakefield et al, 2010). Direct methods generally aim to directly affect audience members by appealing to cognitive or emotional responses (Wakefield et al, 2010: 1262). Therefore, these direct methods can be developed through such BCC theories as SCT, TRA/TPB, HBM, and IBM. An example of this could be a potential ‘anti-sugar’ campaign that emphasises the risks involved with sugar and the benefits of decreasing its use, while at the same time associating sugar with diabetes and other related illnesses, as well as offering sugarless alternatives.

Indirect causations could also occur with the implementation of behaviour change campaigns. Wakefield et al identifies three ways in which this is possible. Firstly, media messages can set an agenda for interpersonal discussions within an individual’s social network, which, in combination with actual exposure to a message, could potentially reinforce (or undermine) certain changes in behaviour (Wakefield et al, 2010: 1262). Therefore, such media effect theories as the Agenda Setting theory has great relevance to such indirect implications of mass media health campaigns. Secondly, due to the large reach of mass media campaigns, social norms can be created that change a population’s behaviour without each individual having been directly exposed or persuaded by the campaign (Wakefield et al, 2010: 1262). For example, with relation to nutrition, a household’s primary grocery shopper could expose other individuals in a household to new, healthier food options that were discovered through a media-based nutrition campaign. Therefore, this aspect can be related the Accumulation and the Social Expectation Theories that are discussed under media effects. Finally, media campaigns can encourage public discussion and lead to changes in public policy, resulting in constraints, and therefore changes, on individuals’ behaviours (Wakefield et al, 2010: 1262). Therefore, through such theories as Agenda Setting, nutrition campaigns around the reduction of sugar intake could lead to discussions taking place for interventions at a policy level (for example, placing a tax on sugar-sweetened beverages (Manyema et al, 2014; Green, 2014)).

In terms of nutrition, reviews of studies highlight that media-orientated nutrition campaigns are only moderately effective (Wakefield et al, 2010; Anderson et al, 2009). Compared to this, physical activity promotion campaigns are slightly more effective with Anderson et al

finding that these interventions are highly effective (Anderson et al, 2009: 13), while Wakefield et al only found that these interventions are moderately effective (Wakefield et al, 2010: 1263). With regard to nutrition campaigns in particular, intensive campaigns with simple, focused messages seem to have the greatest impact (Anderson et al, 2009; Wakefield et al, 2010). For example, “later media campaigns focused on increasing consumption of fruit, vegetables and low-fat milk, and were deemed more successful, especially when people were provided with access to healthy foods or had health disorders for which changes in diet would be beneficial” (Wakefield et al, 2010: 1265). It has also been found that nutritional media campaigns have informed policy changes, especially in terms of labelling. For example, the introduction of labels providing nutritional information on certain products has increased the likelihood of individuals selecting healthier foods (Wakefield et al, 2010: 1265).

However, despite these fairly positive reviews, there are a number of issues with media-based nutrition intervention campaigns. Assessment of nutrition campaigns shows that short-term changes can be achieved, while sustained effects are difficult to maintain after campaigns have ended (Wakefield et al, 2010: 1265). Therefore, media campaigns should plan for methods to create longer lasting effects, or to develop cost-effective long-term campaigns. However, there are some serious and notable obstacles that can impede longer-term population-level behaviour changes (Wakefield et al, 2010: 1266). These include “competing environmental factors, such as easy access to marketing of energy-dense food, the complexity of recommendations for nutritional and physical activity behaviour in different population sub-groups, and changes over time in recommendations made by health educators” (Wakefield et al, 2010: 1265-6). Therefore, in order to counteract these barriers and in order to develop more successful nutrition promotion campaigns, a certain amount of strategies need to be developed and implemented.

3.4.1 Health Promotion Campaign Strategies

Fitzgibbon et al (2007) discusses six themes that should be used when developing communication campaigns: “1) draw from a variety of communication theories; 2) use strategies that are relevant to the target audience; 3) apply marketing strategies used by the private sector; 4) take action on multiple levels; 5) think broadly about evaluation; and 6) recognise potential communication inequalities” (Fitzgibbon et al, 2007: S64). There are also

various other factors that fit into these ‘themes’ and need to be taken into consideration with regards to strategizing a media campaign. These include clear campaign goals, understanding the desired outcomes, determining communication activities and channels, and effective message content and presentation (Snyder, 2007).

When designing an intervention campaign, it is important to understand a variety of theories that the campaign can draw from. There have been numerous theories discussed in this chapter – all of which can be used when implementing behaviour change interventions. Overall, BCC theories such as the Health Belief Model, the Social Cognitive Theory, the Theory of Reasoned Action/Theory of Planned Behaviour, and the Integrated Behavioural Model need to be used in conjunction with communication theories drawn from media effects (Fitzgibbon et al, 2007: S64-S65). However, marketing theory and social marketing principles are also important theories to consider. With regards to the marketing theory, the “4 Ps of marketing – place, price, product, and promotion – are key concepts in commercial marketing that have been adapted to social marketing and health communication” (Fitzgibbon et al, 2007: S65). Therefore, certain aspects developed from marketing could be imperative to public health campaigns. With social marketing principles, these can be used to structure the environment to support recommended health behaviours by making it simpler for consumers to act on those recommendations (Fitzgibbon et al, 2007: S65). Drawing from a variety of behavioural and communication theories means that campaigns can understand the most effective methods in which behaviour change can be encouraged. Through the understanding and acknowledgement of various theories, health-related media campaigns should therefore define various campaign goals, outcomes, and objectives. At the beginning of any health communication campaign, goals and desired outcomes should be the first aspects that are identified. Campaign goals should ideally describe what the campaign is meant to achieve within a specific time frame (Snyder, 2007: S34). As a part of this, these goals should state the desired outcomes, the target populations, and the campaign’s objectives (Snyder, 2007: S34).

The second ‘theme’ discussed by Fitzgibbon et al (2007) is using strategies that are relevant to the target audience. Therefore, Fitzgibbon et al posits that:

“Knowing the audience and understanding their existing knowledge base, cognitive abilities, beliefs, values, current dietary behaviours, barriers to change,

communication patterns, and information processing can help communicators develop message strategies that are personally relevant and that will resonate in ways that lead to behaviour change.”

(Fitzgibbon et al, 2007: S65).

Yet, as Snyder (2007) claims, deciding on target populations should depend on what is learnt from research with those potential populations and the economic realities of the organisation conducting the campaign (Snyder, 2007: S35). Indeed, the economic realities of a public health organisation can become an issue when selecting target audiences, as creating unique strategies for each target group could become strategically and financially overwhelming. Therefore, Snyder proposes that, as an alternative, a campaign can economise by sending standardised messages to all target groups, acknowledging diversity through the utilisation of actors from different demographic groups (Snyder, 2007: S35).

Communication activities and channels are also important aspects to take into consideration – not only when designing the overall campaign, but also when deciding on the intended target audience. Generally, communication activities refer to such strategies as public service announcements, discussion groups, workplace or clinic-based counselling, and in-school presentations, while communication channels refer to the method in which messages are delivered (such as television, radio, newspapers, or the Internet). The reason why both these aspects are important to the intended target audiences is that different demographic groups consume different forms of media depending on what they have access to and what their preferences are. However, such media channels as television and radio have been considered to be generally accessible from different social groups, despite the fact that programme preferences differ (Fitzgibbon et al, 2007: S66). Snyder (2007) also notes that communication activities and channels should be used in such a way so as to reach the highest percentage of the target population multiple times (Snyder, 2007: S36). Therefore, communication campaigns should attempt to develop as many communication activities and use as many channels as possible. This is primarily due to the fact that using multiple media platforms will increase the frequency of exposure to a certain message, thus increasing the chances of individuals retaining a campaign’s ideas (Snyder, 2007: S36).

A very important strategy that should be used in various behaviour change campaigns, particularly those that encourage healthy eating, is that of drawing on, or learning from, the

marketing strategies used by the private sector (Fitzgibbon et al, 2007: S66). Indeed, an understanding of the target population, a carefully crafted message strategy, and decisions about appropriate mediums for delivering messages are cornerstones of marketing theory (Fitzgibbon et al, 2007: S66). Therefore, the idea of ‘branding’ has become popular in recent health campaigns (Fitzgibbon et al, 2007: S66). And, as Fitzgibbon et al notes, in public health campaigns, the brand is “a set of prevention or health promotion behaviours that can be interpreted as representing an appealing lifestyle for a specific audience” (Fitzgibbon et al, 2007: S66). However, although using marketing strategies could be highly effective, public health campaigns rarely have the funding compared to that of large corporate entities (Fitzgibbon et al, 2007: S66). Therefore, Fitzgibbon et al suggests that creativity and innovation are essential for effective applications of marketing strategies in public health nutrition campaigns (Fitzgibbon et al, 2007: S66).

Creative methods for applying marketing-like strategies to public health campaigns should therefore focus on message content and message production. Through the use of theoretical models, campaign organisers should create informed message content that encourages behaviour change (Snyder, 2007: S36-7). This can be achieved through a number of methods, including the emphasis of information that is new to the target group and essential for behaviour change (Snyder, 2007: S37). Along with this, messages should attempt to subvert preconceived notions amongst target audiences, while also dealing with ‘how to’ and ‘when to’ knowledge (Snyder, 2007: S37). According to overviews of behaviour change campaign reviews, consistent, coherent, simple and clear messages must be disseminated through multiple channels and in forms that are appropriate to local culture, age and gender (Anderson et al, 2009: 13). Others suggest that in terms of nutrition campaigns, media messages should encourage an “enjoyable pattern of diet and activity choices as part of a long-term overall healthful lifestyle” (American Dietetic Association, 2007: 1230). However, the way in which messages are presented can be just as important as the message content itself. This is due to the fact that the way in which messages look and sound can have an impact on the effectiveness of a campaign amongst the target population (Snyder, 2007: S37). Indeed, messages need to capture audiences’ attention, while at the same time allowing them to easily remember the message content. In order to do this, Snyder (2007) suggests a number of strategies that can be implemented:

- “Using multiple executions (different versions of the same underlying concept);

- Being creative and novel;
 - Refreshing media messages often;
 - Depicting people who are clearly members of the target population;
 - Keeping messages of high quality;
 - Using explicit, intense, emotional, or entertaining messages;
 - and by creating logos, slogans, and jingles”
- (Snyder, 2007: S37).

Yet through all of this, it still needs to be clear that information used in message content and presentation is credible and consistent (Snyder, 2007: S37).

Evaluating the effectiveness of a public health campaign should also be a fundamental step in the planning of any media-based health behaviour intervention. This is due to the fact that understanding the effects of different campaigns can allow it to be easily replicated in other areas. However, as Fitzgibbon et al claims, “public health campaign planners often use unrealistically high behaviour change standards to judge the effectiveness of their programs” (Fitzgibbon et al, 2007: S67). Therefore, as a result of this, nutrition communicators must also select creative and innovative evaluation methods for determining the reach and impact of their campaigns (Fitzgibbon et al, 2007: S68).

One final factor that Fitzgibbon et al touches on briefly is that campaign planners need to recognise potential communication inequalities (Fitzgibbon et al, 2007: S68). As discussed with the Knowledge Gap Hypothesis, public health communicators need to take into account that not all individuals have access to the same media channels and content. Therefore, public health campaign planners need to focus on using either universal or multiple media platforms, in order to make sure that their messages are easily accessed by their target populations.

3.4.2 Edutainment

Drawing on multiple media and behavioural theories such as narratives and modelling, edutainment is an effective tool in promoting certain health behaviours. Also known as Entertainment-Education (EE), edutainment is defined as “the intentional placement of educational content in entertainment messages” (Singhal & Rogers, 2002: 117). Certainly,

mass media entertainment programmes that employ the use of stories have been widely used as a method of educating, informing and influencing social and individual change (Soul City Institute, 2013: 1). Edutainment is therefore any communication that employs popular culture to educate and challenge people (Soul City Institute, 2013: 5). The Soul City Institute expands on this definition by describing exactly how edutainment achieves this:

“The field known as edutainment uses popular entertainment formats to tackle serious social issues in a bold and entertaining way. Stories can draw audiences into the centre of an issue, move people emotionally and catalyse discussion and debate.”
(Soul City Institute, 2013: 1)

There are also various types of edutainment, ranging from small-scale, localised programmes (such as a community dramas, a village storytelling event or a puppet show) to wider-reaching, large-scale programmes like television and radio dramas, soap operas, game shows, reality shows, talks shows, and magazine programmes (Soul City Institute, 2013: 7). The extent to which these projects can be expanded obviously depends on the resources available to health promoters. Some theorists believe that the success of edutainment is enhanced by supplementary activities that accompany integrated communication campaigns (Singhal & Rogers, 2001: 346). However, as the Soul City Institute claims, creating an ongoing EE programme is more likely to have success, regardless of whether you choose a single medium or a multimedia approach (Soul City Institute, 2013: 7). This can also allow for the possibility of a wide variety of health issues that can be covered, while at the same time retaining a base of audience members (Soul City Institute, 2013: 7). Therefore, when considering edutainment strategies, health promoters need to research the viability of a long-term edutainment project.

Although edutainment in South Africa has fundamentally focussed on serious health issues that are apparent in society (such as HIV/AIDS, TB, domestic violence, etc.), the grounding in sound communication theory allows for edutainment to be applicable to any behaviour change campaign, including those surrounding nutrition. Therefore, theorists such as Singhal and Rogers, suggest that EE projects should draw from a combination of theories and models that can be easily applied to various programmes (Singhal & Rogers, 2001: 346). Although they claim that Bandura’s Social Learning Theory (the basis of SCT) is the most common example utilised in EE programmes (Singhal & Rogers, 2001: 346), there are also plenty of other theories considered important in edutainment. These include the TRA/TPB, Lewin’s

Theory of Change (TOC), Social Identity Theory (SIT), and the Information-Motivation-Behaviour Skills Model (IMBSM) (Soul City Institute, 2013: 13). Although all of these theories differ in some way, they all attempt to change behaviour through modelling, self-efficacy, emotion, dialogue and debate, social norms and social identity (Soul City Institute, 2013: 13). Therefore, edutainment attempts to change behaviour through the use of both behaviour change theories and health communication theories.

In terms of audience response to edutainment, a study conducted around the factually accurate American drama *ER* found that audiences are:

“... sophisticated, astute, insightful and media-literate. They produce complex, multi-layered, sometimes contradictory and/or unexpected interpretations ... They generate meanings in their encounters with flexible texts, meanings which cannot be predicted by content analysis of broadcasts alone. The success of health promotion through continuous fiction is precisely rooted in a recognition of the public’s impressive abilities and diversity.”

(Davin, 2004: 155)

This has also been found through multiple South African edutainment examples such as *Tsha Tsha*, *Soul City*, and *Intersexions*. An interesting idea to note is that Davin (2004) also found that British and American medical dramas (such as *ER*) were more effective than documentaries. This is primarily due to the fact that audiences were more critical of documentaries that often exclude ‘off-camera’ aspects and cut out large segments during the editing process (Davin, 2004: 148). However, with such programmes as *ER*, viewers were more lenient as they anticipate entertainment and are surprised and delighted to find useful material (Davin, 2004: 149). Therefore, Davin notes that “form and content are intertwined: expectations about form may affect the perception of content” (Davin, 2004: 149). Overall, however, Davin attributes the success of edutainment to various factors:

“It is by empathising with characters, by assessing the dis/advantages of different courses of action, by discussing storylines with relatives and friends, by filling in the blanks, by creating narratives, by playing games with the stories, etc., that viewers engage with, and learn from, broadcasts.”

(Davin, 2004: 155)

In terms of nutrition, a recent radio drama in Somalia called *Tiraarka Qoyska* was created to improve child health and nutrition (Landman & Muriithi, 2015). Aired on BBC Somalia, the edutainment campaign was largely seen to be successful due to the combination of drama and discussion, as well as the wide reach of radio to many parts of urban and rural Somalia (Landman & Muriithi, 2015: 6-7). However, it is important to note that building a successful EE campaign audience base takes time and that partnerships also need to be created in order to overcome any structural barriers to changing behaviours (Landman & Muriithi, 2015: 11).

In South Africa, there have been plenty of highly successful EE programmes, including *Soul City*, *Tsha Tsha*, and, most recently, *Intersexions*. In order to make successful edutainment programming like these, the Soul City Institute suggest eleven points that need to be taken into consideration in the planning stages of health promotion programming (Soul City Institute, 2013: 18). These include:

1. A good balance of education and entertainment
2. Integrate the messages
3. Good quality
4. Personal relevance
5. Be aware of sensitivities that may impact on the effectiveness of your programme
6. Sound research
7. Consider multimedia
8. Give it time
9. Be guided by sound social and behaviour change theory
10. Be careful of unintended messages
11. Ensure robust monitoring and evaluation

(Soul City Institute, 2013: 18)

Therefore, through this list, it is easy to see that edutainment uses the same basic guidelines and strategies as many other forms of health promotion campaigns. However, due to the use of narratives and their general ongoing nature, edutainment could be a more effective method of behaviour change communication.

3.5 Conclusion: Using Theory to Further Refine the Super 7 Campaign

This chapter covers three aspects that can be used to inform various strategies for the Super 7 Campaign. These include media effect theories drawn from Media Studies, the Integrated Behavioural Model (IBM) drawn from Behaviour Change Communications, and health communication campaign strategies drawn from practical examples. However, it is important to note that all of these aspects interlink in various ways and that understanding them together can lead to an effective planning of a media-centric nutrition intervention. Therefore, this section will once again examine the Super 7 and discuss potential ideas and guidelines that can be used to develop the media aspect of this hypothetical campaign.

Once the various behavioural factors have been isolated, it then becomes important (with regards to the media side of an intervention) to set a certain agenda (Agenda Setting Theory). This agenda should be used to not only create a certain reality about particular health behaviours, but it should also be used as an opportunity to educate and entertain audiences. For example, with regards to the Super 7 Campaign, the media can be used to not only promote the consumption of the seven fruits and vegetables, but it can also be used, in an entertaining way, to educate audiences about why the consumption of these food is deemed important. The setting of this agenda should also be used to influence and change social norms surrounding certain health behaviours. In the Super 7 Campaign, this can be done through the application of the modelling theory and the social expectations theory. In other words, the Super 7 can encourage fruit and vegetable consumption through the depiction of potentially respected individuals partaking in the behaviours promoted by the campaign.

An additional step with regards to the media aspect of any campaign is to make sure that this agenda setting is effective through the implementation of media messages through as many channels and methods as possible. For example, the Super 7 Campaign should not restrict itself to advertising solely in the supermarkets themselves, but it should also utilise mediums as televisions, radios, newspapers, and social media in order to reach as many people as possible. As stated above, reaching as wide an audience as possible increases the effectiveness of any campaign, therefore, the Super 7 should not only utilise as many media channels as possible, but it should also make sure that the messages are consistent and persistent. Indeed, this follows the accumulation theory which believes that repetitive exposure to a message can influence an individual's behaviour.

Table 4: Theoretical Insights for the Super 7 Campaign – drawn from Chapter Three

Further Strategies	Explanations	Theory
Employ a variety of theories	Drawing from a variety of theories is essential to any behaviour change communication campaign. This is due to the fact that a variety of tactics can be developed from these theories in order to make a campaign more effective. For the Super 7 Campaign, the following theories were selected due to their relevance: IBM, Agenda Setting, Knowledge Gap, Modelling Theory, Social Expectations Theory, and Accumulation Theory.	
Isolating behavioural factors	Following on from ‘Understanding the Target Audience’ in Chapter Two, nutrition interventions need to also understand the multitude of internal and external factors that affect the target audiences’ behaviours. Therefore, interventions need to find out from the target audience themselves in order to discover the factors that affect their behaviours. However, as noted when discussing BCC and its critiques, it also needs to be understood that these factors are all interlinking and that there is no linear solution that can be identified. In this study, the IBM was utilised with the use of focus groups in order to isolate certain behavioural factors.	IBM
Set an agenda	Interventions need to set an agenda and bring their issues to the forefront of the audiences’ minds. This is so that campaign organisers can create a certain reality around target behaviours. Therefore, with regards to the Super 7, the topic of nutrition needs to be repetitively disseminated in order to get people thinking about nutrition and how it affects their health. This idea of agenda setting isn’t to tell people what to do, but to rather get people thinking and talking about the topic of nutrition and the consumption of Super 7-like foods.	Agenda Setting
Create a brand	Related to agenda setting is the idea of branding. In order for an agenda to be promoted and present in people’s minds, branding techniques could be incorporated. This is so that media campaigns are not only more omnipresent, but that they are also more recognisable. Therefore, for the Super 7, this can be done through the special branding of ABCs & SPOTS, as well as through the persistent promotion and education surrounding the Super 7 foods.	Agenda Setting
Educate	In any nutrition campaign, educating the audience should be the primary concern. Using sound evidence-based information, the Super 7 Campaign should contain educational material that can be distributed in various ways. For example: through packaging, advertising, and infomercials. Educational messages should also be simple	Knowledge Gap

	and easy to understand – and should be aimed at any person that may come into contact with the campaign – even those that are not the target audiences. It is also important to note that these education techniques should also encourage debate and open up dialogues within communities. This is in order to limit the linear process of disseminating information and encourage active participation in the education process. This can be done in the Super 7 Campaign through the use of social media and edutainment.	
Entertain	Although Edutainment is not specifically a theory in itself, media-orientated interventions should employ strategies from this branch of media in order to create a campaign that is attractive and engaging, while educating at the same time. With the Super 7 this could potentially be done through the use of nutrition information and ‘product placement’ in already established edutainment programmes.	Edutainment
Change the social norm	Changing the social norm is a difficult and highly complex process. With the Super 7, fruit and vegetable consumption could be promoted through the depiction of potentially respected individuals from the target community partaking in the behaviours promoted by the campaign.	Modelling & Social Expectations
Employ a variety of mediums	Using a wide variety of channels and methods can be used to reach as many individuals as possible. It is also important to make sure that the messages are consistent and persistent so that individuals can have multiple exposures to them. With the Super 7, this could be done through the utilisation of advertising primarily through the radio, television, and print media. The campaign would also need to ensure longevity in order to make sure that the messages are as persistent as possible.	Accumulation

Overall, there are various other specific strategies that can be drawn from media theory, behavioural theory, and practical guidelines. However, with regards to the Super 7 in particular, these specific strategies can only be fully teased out once an examination of the target audience has been completed. Therefore, the next chapter will examine the various factors that came out of the focus groups in order to refine and sharpen the final guidelines for not only the Super 7 Campaign, but also for media-centric nutrition interventions in general.

CHAPTER FOUR:

Validating Data and Experience via a Grahamstown Case Study

4.1 Phase One: Semi-Structured Interviews

The first phase of the study was to gather information from the various health care facilities around Grahamstown in order to understand the statistics and available information pertaining to obesity. The focus on obesity is, as stated in Chapter 1, due to the fact that the UMSC project was primarily focusing on obesity amongst women in Grahamstown. The interviews were conducted primarily with the nurses in charge of chronic care in the various clinics. They included their own personal observations, coupled with statistics from the Makana Sub-District Department of Health (Appendix C). Table 6 below is a simplified table of the responses from the nurses with the question sheet attached (Appendix E).

With regards to the availability of awareness campaigns, the answers from the interviews were often more detailed and included information that the majority of the awareness campaigns were conducted one-on-one or in small groups with a dietician. It was also noted that these awareness campaigns were only aimed at those whose treatment included a change in diet – meaning that these campaigns were not available for the general public. However, there was one exception. In the Joza Clinic, there were group workshops that were held for the broader Grahamstown community about healthy diets and obesity-related illnesses. This differs from other clinics which only included sessions for patients exclusively.

With regards to the question about how nurses deal with obesity-related illnesses, they were excluded from the table as they were generally the same. Nurses would deal with obese diabetic and hypertensive patients by 1) having one-on-one lifestyle modification consultations with them, before 2) prescribing them medication, and then 3) perform follow-up evaluations. Sometimes the patients would be referred to a dietician who would visit the clinics at least once a week, or they would attend group lifestyle modification sessions.

Table 5: Responses from Semi-Structured Interviews with Clinic Nurses

	Sub-District Health Department	Tantyi Clinic	Middle Terrace Clinic	Raglan Road Clinic	N.G. Dlukulu Clinic	Settler's Day Clinic	Joza Clinic	Anglo African Street Clinic	Settler's Hospital
Diabetes Mellitus Prevalence and Hypertension Prevalence: April 2012 – March 2013									
Diabetes per 1000	192.2	18.1	60.2	10.5	17	49.8	16.6	20.0	+/- 140 per month
Hypertension per 1000	753.2	121.0	152.7	74.8	109.2	109.3	104.6	81.6	+/- 140 per month
Perceptions of Factors Relating to Obesity									
Gender most affected by obesity	Women	Women	Women	Women	Women	Women	Women	Women	Women
Main factors behind obesity	Location	Poverty-related	Eating Habits	Poverty-related	Age	Multiple Factors	Diabetes and Hypertension	Unknown	Age
Areas most affected by obesity	Joza Area	Tantyi	All Areas	Vukane	Extension 6 and 7	The Location	Joza	Unknown	The Location
Perceptions of available resources about obesity									
Sufficient Information Available	Yes	No	No	No	Yes	No	Yes	Sometimes	Yes
Sufficient Medication Available	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Availability of Awareness Campaigns	Yes	No	Yes	Yes	Yes	No	Yes	Yes	Yes

The final decision was to conduct interviews in three primary areas – the Joza area around Joza Clinic, the Fingo area around Anglo African Street Clinic and Raglan Road Clinic, and the suburban area of Westhill around Settler’s hospital. The reasons for these choices are as follows:

- Joza Area
 - In terms of hypertensive and diabetic patients, the Joza area does not have any significant figures. However, due to the fact that the Joza clinic is unique in terms of their public workshops surrounding healthy lifestyles, this area stands out in relation to the other clinics.
 - The Joza area is relatively distant from the town centre, yet still remains the central hub of the township. There are various municipal facilities including a library, a clinic, a youth hub, multiple spaza shops, and multiple centres.
 - In terms of ethnicity, race, and class, the Joza area primarily houses black isiXhosa individuals who are living in abject poverty.
 - In terms of obesity, some of the nurses identify Joza as having the highest levels of overweight and obesity.
- Fingo Village
 - In terms of hypertensive and diabetic patients, Anglo African Street Clinic and Raglan Road Clinic (both of which serve the Fingo area) have some of the lowest rates.
 - The Fingo area is closer to Grahamstown’s centre compared to Joza. This may have significance with regards to its low rates of obesity related illnesses.
 - In terms of ethnicity, race, and class, the Fingo area primarily houses black isiXhosa individuals who are living in abject poverty.
 - The Fingo area clinics also seem to not be adequately prepared for giving information to their patients regarding healthy lifestyles.
- Westhill Area
 - The area of Westhill is a suburban area around Settler’s Hospital – the primary health care facility in Grahamstown.
 - The primary reason for the choice of this area is due to the fact that it generally houses middle-class individuals.

- In terms of ethnicity and race, the Westhill area predominantly has white individuals.

Overall, these three areas differ from each other in numerous ways and it was therefore decided to conduct a series of focus groups with individuals from those areas. However, before moving on to the second phase where focus groups were conducted, community partners had to be selected and trained.

4.1.1 Community Partners

Through the Grahamstown-based NGO, uMthathi, a number of community partners were identified. uMthathi is an organisation in Grahamstown who's vision is "for increasing numbers of people in the Eastern Cape to improve their quality of life through further developing the knowledge, skills, activities and networks necessary for healthy living" (uMthathi Training Project, 2014). Through this vision, uMthathi primarily trains individuals around the Makana District in gardening and healthy living. One of their projects includes creating community 'heroes', who are trained to spread the information that they receive from various uMthathi workshops. From these community 'heroes', four members were chosen to be the community partners for this project.

These individuals were selected due to the fact that not only have they been trained in spreading ideas around 'healthy living', but also due to the fact that they have all had previous experiences with 'opening up dialogues' in the Grahamstown communities. All of them are employed by either Grahamstown schools or the Grahamstown church systems. The two female community partners included Vatiswa Joni and Beauty Mxosana (with Pamela Veliswa Sandi replacing Beauty in Phase Three), while the male community partners included Xolani Nxuzula and Tembela Magadla. Before the first focus groups were conducted, the community partners were required to attend two workshops with the main researcher and were then required to conduct two separate practice focus groups with Rhodes University students.

At the workshops, the particulars of the project were described to the community partners and they were asked for some input with regards to the first discussion guide²¹ and the sample selection and gathering process. The community members were articulate and understood the project relatively easily and quickly.

4.2 Phase Two and Three: Focus Groups

Drawing from the Integrated Behavioural Model (IBM), the data from the focus groups were analysed in order to discover a number of commonalities and differences that could influence a media-orientated nutrition intervention. Overall, there were three main themes that were found with the help of IBM. These revolved around the behavioural factors of Perceived Norms, Environmental Constraints and Habit.

4.2.1 The Socialisation and Peer Pressure of Food and Body Weight

The first main theme that emerged from the focus groups is that of **Socialisation and Peer Pressure**. It seems as though this theme is the biggest contributor to individuals' nutritional behaviour. Almost every focus group pointed out that their family and friends contribute towards their eating patterns. This is due to a number of reasons. These reasons range from the socialisation surrounding nutrition in the family unit, to the peer pressure that the participants feel from friends and relatives.

The first factor with this theme is that many individuals claimed that their eating habits are formed from childhood. Many individuals were raised eating certain foods – these foods depended on the family's income, their food preferences, and the desire that parents had to help their children eat healthily. According to the older female focus group, many of the women fed their children what they could while attempting to keep them away from fatty foods that could make them unhealthy. However, as they have stated, this has been difficult to do due to financial constraints. There was also a claim that most of their sons actually gain weight after they are married due to the cooking done by their younger wives.

²¹ Appendix G

“Me, I didn’t have overweight children, when they are growing up, but after they are married they become overweight. So I don’t know whether they don’t control themselves or their wives are doing over cooking, I don’t know. Then after that, their health breaks, they become sick because they are not used to being overweight.”
(Female Participants, F1 Joza Older, March 2014).

In the younger female focus groups, the participants often spoke about how their parents affected their food consumption patterns.

“I think it depends how you grew up eating. If your parents, if you grew up with your parents feeding you fruit and veg, you're going to think when you go to the shops, you're going to have to buy fruit and veg.”
(Male Participant, M5 Students, June 2014).

However, through the discussions in various focus groups, it is also clear that there could be two potential issues with the formation of eating habits during childhood. The first has to do with the fact that many parents might have incorrect ideas about proper nutrition and perpetuate the consumption of unhealthy foods and methods of cooking.

“My mother has high blood pressure, but she doesn’t watch her diet, she wants more of oil or salt. If you cook healthy food, she complains that there is no salt, no oil, she wants more all the time – and she will say it’s not nice. She likes meat with fat and also spices – she doesn’t care if her pressure is up, she just eats what she wants to eat. And she is also overweight because of the way she eats.”
(Female Participant, F2 Joza, March 2014).

The second issue with regards to the formation of eating patterns through childhood is that despite the fact that many of the student participants are being forced to eat vegetables at home, they also claim that as soon as they are no longer forced to eat these foods, they are less likely to eat them.

“I think we grew up forced into those vegetables, so now when we are away, we just take advantage of the fast foods and [laughter]... when you were told, you know, that

you are going to eat sweet potatoes, you're going to eat this, it's going to be healthy all the way, so being away from home you take advantage [laughter].”

(Male Participant, M5 Students, June 2014).

With many of the groups – particularly those that do the main grocery shopping for their households – the participants’ food purchasing behaviour not only relied on what was cheap and maybe on what was healthy, but also on the food preferences of their other family members. This once again highlights the power of the socialisation of food within the family unit. One woman from the female parents’ focus group claimed that her extended family does not enjoy certain foods and that she may have to avoid certain foods when she goes grocery shopping.

“But there's a problem at home, ne? Because if you have a sister or a cousin, they say 'haai, I don't eat cabbage or carrots', so whereby you start to cook, you have to think about him or her, that I cannot cook this, because he can't eat it, or she can't eat it. So it's better to cook one thing, you see? Or some will say that they don't like oil, 'I don't want oil', so it's a problem...”

(Female Participant, F4 Parents, June 2014).

Sometimes the parents would also ‘spoil’ their children and buy them food that they like, despite knowing that it could be potentially bad for them. However, despite the fact that the family unit seems to have a major influence on individuals’ food consumption behaviours and habits, it seems as though the participants also sometimes judge the way in which their families eat – or they attempt to consume a different diet from those of their families.

“They like fast food, I like veggies and I also like meat, but I wanted to eat my own meal, so I don't judge them, I'm not judging them, I am telling them that this way is the right way - because they want to eat fast food every day, Monday to Sunday.”

(Translator, F4 Parents, June 2014).

Therefore, it seems as though there could be other factors that affect individuals’ views of different foods as well as their food consumption patterns. Many of the individuals claim that they do not check the nutritional information of food, and that they rather rely either on their

own experiences with certain foods, or they rely on the suggestions of both friends and family members.

“We mostly do what other people do, like buying the same stuff that you saw from your friend’s house, or your neighbour”

(Male Participant, M3 Fingo, April 2014).

This means that individuals often do not necessarily think about the nutritional status of the food, but rather consume items that they have already had previously.

“Maybe your spouse has bought the product before, so you just go for it. For example, it’s Oros, maybe she said it’s alright and then you taste it and it’s alright, so it’s alright. So when you go to the shop and buy it, you already know how it tastes.”

(Male Participant, M1 Joza Older, March 2014).

Through this line of thought, it becomes clear that individuals often base their food consumption behaviours on the behaviours of others – even those that are not within the family unit. The power of this socialisation with food can sometimes even trump some environmental constraints. For example, even though there are often issues with expired food in the Grahamstown community, individuals will still consume these foods:

“Looking at the expiry date or something, it happens that it's expired, but because other people are taking it, they will still take it.”

(Translator, M4 Parents, June 2014).

Apart from individuals sometimes basing their actions on others with regards to food consumption, many of the participants also noted that culture often plays a role in the food consumption patterns of people in South Africa.

“There's different cultures in the country, we eat differently, we eat differently. Like us Xhosas, we have a specific way that we eat, I think all of us have eaten porridge before, like mielie meal porridge, but other cultures don't usually do.”

(Male Participant, M5 Students, June 2014).

Indeed, some of the younger male groups in particular claim that eating meat is a sign of not only tradition and culture, but that it also increases one's social status.

“Remember in order to become one of the Xhosa men, you have to eat a lot of meat [laughter and mumbling] and then they have to see that you are the man.”

(Co-facilitator, M5 Students, June 2014).

Even when comparing themselves to other cultures and races, the male participants believe that culture and tradition are one of the factors that affect individuals' food choices.

“I personally think that us blacks, we don't really think about the nutritional things [laughter]. We think about the taste, like, if it tastes well, then that's the only thing about it... it's not really about if this thing is healthy.”

(Male Participant, M5 Students, June 2014).

However, according to an older male participant, it is actually the erosion of food-related traditions that is causing problems with people's health.

“That food was good in terms of health, because people weren't always getting sick when they ate that food. There were not a lot of clinics then, but now there are plenty of them because people are always sick. The reason is that people are not eating healthy.”

(Male Participant, M1 Joza Older, March 2014).

Therefore it seems as though there are differing views of the role of tradition within individuals' eating behaviours. This does, however, highlight the fact that changing individuals' behaviours that conflict with their traditions could be potentially problematic for a nutrition intervention as these social norms have been enforced for decades and perhaps centuries. However, it is important to note that, throughout the focus groups, it seems as though there is a consensus that it could potentially be the fault of both the overconsumption of traditional and modern foods that lead to unhealthy diets.

Another factor that falls in this theme of the socialisation of food is that individuals often feel peer pressure when it comes to their food purchasing behaviour due to the fact that buying

certain foods can affect one's social status. Many of the participants, particularly the men, claim that buying 'expensive' fast food and superfluous unhealthy foods gives individuals a high social status compared to the consumption of purely fruits and vegetables and certain cheap foods. Indeed, the men believed that eating more fast food and meat makes individuals appear wealthy, thus increasing their social status.

"I think its image, how people see you. I think... that's what people do, it's like, they want to flaunt like... they've don't got the money, but they just want to flaunt so that people think that you are... you don't have problems."

(Male Participant, M5 Students, June 2014).

Being able to feed yourself and your family with food that is viewed as luxurious can aid in the perception that you are wealthy and successful. While having a family that is very thin and who eats only samp and beans can diminish one's social status. Therefore, many individuals (particularly the younger men) feel a desire (or feel pressured) into buying fast food and massive amounts of unhealthy snacks. Sometimes individuals also feel peer pressure from their families as many of their parents want them to not be thin so that it is clear to others that they are providing for their children.

"My dad doesn't want to see one of his children thin, he starts thinking that he is not giving us enough food and he worries too much. [Laughter] That means that my father likes my body the way it is, even though I want to lose weight. If he sees me losing weight, he starts talking and asking questions if I'm stressed or if something bothers me. And he wants me to gain more weight than the weight I have."

(Female Participant, F3 Fingo, April 2014).

Therefore, it is clear that as a sign of social status, an individuals' body image can be used to show that s/he is not only well-fed, but that s/he is also relatively wealthy and of high social status.

"Having a big body, you get respect, like one example, at home, if you are the man of the house, you must be bigger than your kids so that anyone can see who is the father around the house."

(Male Participant, M3 Fingo, April 2014).

On the other hand, slimness is often associated with illness and lack of resources. Indeed, being too thin is primarily associated with HIV/AIDS. However, it is important to note that although being overweight can increase an individual's social status, many of the participants agreed that according to the isiXhosa culture, there is a fine line between too thin and too fat.

“I think that in our culture, you have to have meat in your body and a little bit of fat, but you mustn't be thin or too fat.”

(Female Participant, F2 Joza Younger, March 2014).

Therefore, there seems to be mixed feelings when it comes to the concept of obesity and overweight. Indeed, there also seemed to be different views relating to overweight and gender. Many of the participants seemed to believe that men should only have a big belly while women are generally 'fat' all over.

“If you are a man and you are too fat, you become an insult to the women. They will say your body's like a female – you have a female body – even the structure of your body is a female structure – ‘a man cannot be like this’, that is what they will say.”

(Male Participant, M1 Joza Older, March 2014).

Throughout all of the focus groups, it seemed to become very clear that the desire to lose weight was very individualistic. And even though the participants received varying comments about their weight from friends and family, the majority of them did not seem to care about losing or gaining weight. This means that including encouragement over weight loss/gain could be ineffectual when designing a media-based nutrition campaign as individuals seem more interested in being healthy than drastically losing/gaining weight.

Although this was not touched on in all the focus groups, it became clear that individuals' eating patterns are also viewed to be based on gender stereotyping. Indeed, according to a discussion in the younger female Joza focus group, there is a large difference between the eating habits of both men and women.

“Participant 1: The difference between men and women is that they don't think the same, they don't think alike.

Participant 2: Men eat more than women. They like to eat the whole loaf of bread. Men think that they are the ones who should eat more than women. They always demand more food.

Participant 3: The immune system, men think they have stronger immune systems compared to women, and they also think that the HIV is going to take longer. [They are going to live longer with HIV before seeing any symptoms]. They like to say that they should eat more than women because they say that they are working harder.” (Female Participants, F2 Joza Younger, March 2014).

This therefore highlights that the perceived norms for men and women in the Grahamstown community is different. Men are expected to eat more while the women are expected to make sure that their husbands/families are well fed. However, despite this perceived norm, the attitude of these younger women highlight the fact that they do not seem to agree with this idea and that they are questioning the truth behind the men’s claims.

An interesting topic that arose in a few of the focus groups is that of modelling – an idea which falls into the theme of Socialisation and Peer Pressure. The modelling theory in media studies refers to when a media user encounters a form of action portrayed by a person (model) in a media presentation/representation – they then duplicate this action. There were two main ideas brought up by participants that refer to this idea of modelling. The first has to do with the idea of product placement and celebrities using certain food products on television and in adverts.

“Translator: And also if... let's say for example, I remember yesterday when I was watching this movie... of this guy... National Security, eh, when I was watching the movie, that guy was eating Lays, which I was like, ok. Because I know that we see the Coca Cola brand in each and every movie, then I was like 'now I see Lays in that movie', I feel like 'ok'. If you see something like Simba... Nik Naks in one movie, you see, and then the moment that you see Simba chips, you will want them because you saw it in a movie. That's how I buy, because most of the things, I saw them on TV, than seeing them from my friends or from the location.

Participant: Ja, look at Pepsi. People buy Pepsi, because there's always a celebrity drinking it [laughter].”

(Male Participants, M5 Students, June 2014).

This would suggest that product placement in movies and television, as well as the idea of modelling, might be an effective method in order to spread knowledge about certain products. It also seems as though perceived norms from IBM and SCT are at play here as using certain respected models and individuals to perform certain behaviours on television means that it could become viewed as the ‘norm’. Therefore, it seems as though it’s not only family and friends that are at play when it comes to the theme of perceived norms, but that models from television and movies often normalise certain behaviours that individuals may try to imitate.

The second idea surrounding the concept of modelling is that of the ideal body image portrayed in various media. Many of the participants brought up the fact that the models and actors on television are often very slender people and that overweight individuals do not have the same opportunities as these models. They even claim that overweight people are only on television when they’re being used to show the negatives of obesity and the benefits of losing weight.

“Those who are overweight, if they are in magazines, they are encouraged to lose their weight so that they can have nice bodies. Also, exercises are encouraged for them. Even in their shows, they are exercising and they are always encouraged to lose their weight. Overweight is not good. Like Biggest Loser [referring to the television show].”

(Female Participant, F3 Fingo, April 2014).

However, despite the fact that many of the women spoke about how television demonises overweightness while it promotes thinness, it does not, at least from the comments in the focus groups, seem to be impactful enough or influential enough for them to want to take any action to lose weight. Most participants understood that being very overweight is a relatively negative health wise, but many said they would only lose weight if they ‘wanted be on television’. Therefore, the modelling theory with regard to body image might not work effectively here due to the fact these women might not relate to slender models – viewing them as being separate from their world. This tells us that ideas around body weight and well-

being often precede the influence of TV in some cases, and that individuals often filter out that which does not have relevance to them.

Overall, however, individuals seem to rather act out the perceived norms of their peers and family members. Therefore, media-centric nutrition interventions should focus on changing social norms through the utilisation of the Modelling and Social Expectation Theories. However, they still need to be careful when doing this as they must select ‘models’ that the target audiences can relate to.

4.2.2 The Environmental Constraint of Cost

Despite the power of socialisation and peer pressure surrounding food consumption behaviour, there seems to be another powerful theme that affects nutritional behaviour. This has to do with the **Environmental Constraint of Cost**. The cost of food seems to be the primary deterrent for purchasing healthier foods:

“Vegetables are very important to eat regularly, it’s healthy, but it’s difficult to reach the different kinds of it because of money and poverty. So we are the victims of the starch because we start with it when we are in the shop because they are affordable.”
(Female Participant, F1 Joza Older, March 2014).

Many of the participants pointed out that although fruit and vegetables might cost the same as a bag of rice, the bag of rice would last them a whole month while the fruit and veg would be finished quickly or would go off before the end of the month.

“It’s a money scarcity, because you see 10kg of rice, you know it’s not good alone, but you have to buy it, you won’t get it if you spend your money on vegetables. Although the vegetables are in a healthy state, and then you find the vegetables’ price, for example, is R40, that R40 is closer to that rice, and then when you see that the rice can last you for the whole month, and then maybe the veg will last you a week and then it’s over – otherwise you want that healthy food, but the thing is the money shortage.”
(Male Participant, M1 Joza Older, March 2014).

However, the actual cost of food for one individual is not the only issue with money – many participants are also a part of a large household and have to factor in the cost of food for a wide variety of people. Therefore, they often can only afford to buy the cheaper, unhealthier alternatives to fruit and vegetables, etc. Indeed, many of the participants claim that the first thing they look at when shopping is the price of the products.

“The first is the lack of money and a lack of job creation for our children. So they all depend on us. We want to buy something healthy, but because of the number in the house, we cannot afford that. We then decide to buy starch because then everyone can have a slice of bread. And with samp and beans, the pot will be full. The other problem is that we live on the grant and it is not enough for us, our children and our grandchildren to eat healthily. For example, maybe you eat meat and veg on the first day of your pay and after that you eat the starch in order to afford for the whole month until the next grant.”

(Female Participant, F1 Joza Older, March 2014).

As seen with the above quote, food purchasing behaviour also seems to be affected by the time of the month. When individuals have money at the end or the beginning of the month, they will often spend more money on foods such as fruits and vegetables. However, as the money for the month runs out, they will buy food that is cheaper and more likely to last them longer. Therefore, fruit and vegetables take a back seat to products like rice and potatoes.

This idea is further emphasised during certain times of the year when money is in relative abundance. Many of the participants comment on the fact that the December festive season is the time when their money is spent on food ‘luxuries’ such as fast food. This therefore emphasises the fact that nutrition interventions need to encourage the consistent consumption of fruits and vegetables by discussing their importance within healthy diets.

The cost of transport is also a major issue in this theme. Many of the participants live a fair distance from their local supermarket and have to factor in the cost of transport when they do their grocery shopping. Therefore, this either limits the amount of times that they can restock their groceries, or it means that they have to visit their local spaza shops which often have food of poorer quality. Therefore, nutrition interventions also need to increase the availability

of certain foods if they are to make them accessible for individuals who cannot afford regular trips to the supermarket.

Living closer to shopping malls could also ease the tension of travelling costs. However, this could also have a negative aspect in terms of both formal and informal fast food.

“I had them a lot last year where I was staying because we were near the shopping centre. If I had R22 I will go to the centre to buy a Tuesday Special at Hungry Lion. It’s worse in PE. There are many people who are selling fast food, but now I’m here in Grahamstown, you have to go to town for fast food, so it’s not easy.”

(Male Participant, M2 Joza Younger, March 2014).

Even with the potential cost of transport, many of the participants claim that still had fast food more than a few times a week. From the demographic surveys, this becomes clear as 39% of the women and 26.5% of the men claimed that they consumed fast food ‘a few times a week’. Many of the participants claim that they will spend any extra money that they have on fast food, instead of saving it towards something else. When in town, the participants claim that if they have enough money left over after their daily activities, they will go to the local KFC or another fast food chain. This is not only due to the fact that they are ‘addicted’ to these foods via habit, but it is also due to the fact that buying fast food increases their social status.

But despite the fact that many of the participants still consume fast food, they also recognise that it is often too expensive and that buying food from grocery stores is not only of priority, but is also viewed to be cheaper.

“I think it's cheaper to buy it at Shoprite, because you're not going to eat it at one, you're going to go for another round, or three. Like if you're going to buy KFC, it's for yourself, so I prefer Shoprite although KFC is nicer.”

(Female Participant, F4 Parents, June 2014).

Overall, this theme is fairly clear-cut: if one doesn’t have money, then it’s difficult to afford not only ‘luxury’ foods such as fast foods, but it’s also difficult to effectively feed one’s family with healthy foods that go rotten. It is also important to note here that an increase of

income and a decrease of food costs (through discounts, etc.) leads to an increase in individuals' self-efficacy and thus their perceived purchasing power. However, it is also important to note that discounting certain foods could lead to an increase in the consumption of formal and informal fast foods – so this needs to be kept in mind when designing a media-based campaign. In other words: How can a campaign increase an individual's food purchasing power while decreasing their desire for fast food?

4.2.3 The Desire for Knowledge and Change

The final theme is that of individuals' **Desire for Knowledge and Change**. While many claim that they get information from various sources (including the media, official health sources, family, and personal experiences), there does not necessarily seem to be much of a desire for increasing knowledge and changing unhealthy nutritional behaviours. However, before examining what prevents individuals from changing their food consumption behaviours, it is important to examine the sources of knowledge that affect the participants' eating habits. To start off with, all of the participants recognised that there are healthy foods and that there are unhealthy foods. The idea of balance came through strongly in many of the groups.

“We must not put more starch on one plate. We must put a spoon of veg and a spoon of different veg. So when you mix it, you make for yourself a way for you to eat a balanced meal. You must make all the portions equal on your plate. You make it better for your body to have all that it needs. So you gain energy because all the nutrients are there to fight the sicknesses. If those nutrients are not enough, your body becomes down and you are not fresh – there's something short in your body”
(Female Participant, F1 Joza Older, March 2014).

Overall, individuals claimed that it was easy to gain information about nutrition from various official sources, including clinics, doctors, nutritional pamphlets and various media sources (primarily newspapers, radio, and television). However, it is important to note that the participants seem to agree that they often rather use their own experience than knowledge from official sources. This was particularly true for the older participants.

“As we are eating, we find that if you are eating lots of fatty things, although it is nice, it is not good for your health. Because as we are growing up, our parents tell us, if you are eating a lot of fatty foods, you become fat. But now according to our age, you must choose to even remove the skin of the chicken because there are a lot of fats in it. So even if the top skin of the chicken is nice, you must say bye-bye because you have a lot of fats.”

(Female Participant, F1 Joza Older, March 2014).

However, this experiential knowledge can have a downside as, even with the younger participants, the experience of taste can influence the perceptions and knowledge around those foods.

“Most of the time we don’t buy things because they are healthy, but we buy them because they are nice and they are tasteful. And then we haven’t yet looked at the health or the unhealthy.”

(Male Participant, M1 Joza Older, March 2014).

Therefore, although some people have some knowledge about healthy diets, individuals’ attitudes (particularly their feelings about healthy eating) can affect their desire for knowledge and change. For example, many of the participants claim that they eat just because they are hungry – not worrying about how unhealthy certain foods are.

Therefore, nutritional beliefs and behaviours are in fact based on a combination of knowledge from external sources, as well as experiential knowledge. However, the problem with individuals using high levels of experiential knowledge could mean that the desire for new knowledge through external sources decreases. Therefore, media intervention developers need to be creative when attracting individual’s interest with regards to their campaigns.

Aside from their own experiences and what feels ‘right’ in their bodies, the older women also found out a lot of nutritional information when they had to go to the doctors for treatment.

“The doctor told me not to use soft drinks like Coke, he told me to use water more than those drinks. Instead of soft drinks, I should take a little bit of concentrate juice – not to be too sweet.”

(Female Participant, F1 Joza Older).

However, despite the fact that the older ladies increased their knowledge by visiting the doctor, their habits seem to overrun what is said by the doctor.

“I drink a lot of Coke because that meat makes me thirsty and I just drink one glass after another. But I still love it, even if it makes me sick, I don't know what can make me stop loving my meat and Coke.”

(Female Participant, F1 Joza Older, March 2014).

This therefore highlights the power that habit has over the desire for change in particular. Indeed, individuals who are often seen to be slaves to their habits with regards to food consumption have a relatively low desire for change. Some of the members made an interesting analogy between smoking and food in this regard:

“Because if you're used to do something, it's not easy to go back, for example, if you are a smoker, it's not easy to stop smoking.”

(Male Participant, M5 Students, June 2014).

However, it is also possible that individuals do not understand how habits form and how they persist. This is particularly evident when individuals do not know that even consuming fast food a few times a week could lead to some powerful habits.

“Because you don't eat it most of the time, it's not there. And also, if it's not in front of you, you don't crave meat, but once you see KFC, you just go 'mmm, I just want to eat it' and then that craving will go away and then it's not a habit, it's only a craving. There's that advert on TV for KFC, that guy will be walking right through with a truck, but once he gets inside KFC, you can see his face 'ah, now I'm happy, I'm eating my burger', and after that, the craving is gone.”

(Female Participant, F4 Parents, June 2014).

Through this combination of attitude and habit, personal tastes come about that either cause an individual to stop participating in that behaviour (having negative feelings towards the behaviour) or it can cause them to repeatedly take part in that behaviour (having positive

feelings towards a certain behaviour). This in turn changes the behaviour into a constant habit. For example, a participant from one of the female groups has positive associations with Kota, therefore, purchasing and consuming Kota has become a habit for her:

“Because, now, you know, another thing is, there's a smart shop near where I live, so I think, 'oh my goodness', they're calling my name every day, they're calling my name. I swear when they're making those Kotas, they're calling my name.”

(Female Participant, F5 Students, June 2014).

Indeed, habit seems to be one of the highest influences on people's food purchasing and consumption behaviours. For example, when shopping, people buy different foods in a different order – even though the layouts of most supermarkets have vegetables and fruits right in the front of the store. This behaviour may be primarily due to the environmental constraint of money, but it seems as though for most people this has become a habit.

Another example of the power of habit comes from the fact that many people have large amounts of sugar in their tea and that they are often not willing to change it. For example, in the mixed gender focus group, the amount of teaspoons of sugar in tea ranged from three to five. (Not to mention the fact that even though most of these participants were extremely poor, they were still in the habit of having fast food once a month (M4 Parents, June 2014: 3)). In the male students group, the issue of sugar and tea was once again raised:

“I remember, my grandmother, if I'm coming from school, I should prepare a cup of tea for her, if a visitor comes, it should be another cup of coffee, another cup of tea... after supper, it's another cup of tea, you see? How many teaspoons of sugar in one day? You see?”

(Translator, M5 Students, June 2014).

It is of course important to mention the power of habit under this theme as the formation of these habits can inhibit an individual's desire for change and for furthering their knowledge – even if they already have some informed knowledge about healthy eating behaviours. Indeed, this was particularly seen when discussing television adverts which promoted fast food. And although many of the participants may know that they're bad for them, they often claim to

have a craving for fast food after it shows on the television. It particularly seems as though this craving comes from an individual's previous experience with regards to that fast food:

“I know how KFC tastes, so whenever I see that on TV, I'm like 'oh goodness!'”
(Female Participant, F5 Students, June 2014).

Indeed, many of the participants claim that when they see fast food adverts, they think about getting it the next time they have money. When asked, the focus group participants stated that it's often the way that they advertise the food, rather than any of the taglines in the actual television advertisement.

“So it's almost the way they are advertising it, because there will be licking some fingers and then when they are licking those fingers, you can feel that it's nice, so it have to be really something that is good.”
(Translator, M4 Parents, June 2014).

However, it still seems as though it is not only the food advertised that makes the adverts memorable. Many of the participants seem to recall adverts based on the sounds and jingles that accompany the visuals. This impact that adverts have on individuals therefore highlights the fact that marketing and advertising could in fact be used to increase one's desire for knowledge and change (whether it's for good or for bad), and that implementing these strategies into a media campaign could be beneficial.

But despite remembering the adverts, it was also noted that the participants seem to know that what appears in the advert does not necessarily reflect how the meal actually looks and tastes.

“I think they sometimes, they make it look tastier than it actually is... you see there is another advert about chicken, grilled chicken, it's like marinating and stuff and you think 'yor' [laughter] I think it's not going to stop them. Jor, they brush it nicely... I think that's why I remember it - it looks tastier than it actually is.”
(Male Participant, M5 Students, June 2014).

But despite the fact that individuals often know that the food in the adverts are only made to *look* nice, they still often buy from fast food places. They even claim that some of the food is

made to look healthy – which, in turn, makes them believe that those particular products are healthy.

“I think it's McDonalds, when they advertise their burgers, um, ja, they will put the lettuce, the tomatoes, the cheese, the thick cheese, they will make it seem healthy, but you won't know it's not, but when you get to think about it, you realise it's not healthy, but when they advertise it, it seems healthy.”

(Female Participant, F5 Students, June 2014).

Another important method of advertising and marketing that affects individuals' desire for certain foods often has to do with the packaging of those products. Many of the participants claim that eye-catching products – both in their placement in supermarkets and their bright packaging – are often major factors in their food purchasing behaviour (behind cost, quality and availability). They even claim that the size and shape of the packaging can make a difference. This was particularly found amongst the younger participants who claimed that collectables also aid in people buying particular products (like the unique shapes of certain alcohol bottles (M5 Students, June 2014: 26)).

Through the conversation of informing labels, the idea of people's ignorance was discussed. Many of the participants seemed to believe that the primary factor behind individuals' lack of desire for knowledge and change is that of ignorance. They believed that individuals do not take an active interest in what is healthy for them and they therefore do not have the knowledge about healthy foods, nor do they have the desire to change potentially unhealthy habits. This was particularly emphasised when discussing the over consumption of alcohol in Grahamstown.

“I'm not sure how to put it, but we've got ignorance, or ignoring what should help us, and focusing on what won't help us. For example, you get someone who's getting one thousand rand a month won't be able to buy enough grocery for him or for her, but maybe during the month, you see him or her in the taverns, drinking, when you take that money if they can't get nutrition or healthy food. From that money, they budget to go and buy alcohol... sometimes they don't even buy alcohol for the, I mean [mumble] you see them around.”

(Translator, M5 Students, June 2014).

Even in terms of cooking, some of the participants did not know healthy methods of cooking certain foods. Although they did know that there are clearly some preferable methods in which to cook foods in healthy ways, they were often unclear of any actual methods of doing this. This was particularly seen with the student groups as they were aware that such items as spinach should be cooked in certain ways, but they were unclear as to the exact method. Therefore, it seems as though many individuals believe that education is the key to increasing individuals' desire for changing unhealthy behaviours.

“Back in the days, people didn't know about nutrition and vitamins and stuff, but now, even though we know, people are spoilt, maybe in the near future, information will be shared, people will be taught. Which means people will know about ways to be on diet and do exercises. So we might have people that are not bigger than now, because the information will be out and people will know about obesity and overweight.”

(Male Participant, M2 Joza Younger, March 2014).

Indeed, many seem to believe that the issue of malnutrition and ignorance stems from primarily a lack of education and a lack of a desire for knowledge. But despite the faith that many of the participants place in education, it seems quite common that individuals are only concerned about changing their lifestyles and caring for their bodies if they are already sick or ill. In other words, keeping healthy is not one of their top priorities when they are not overtly sick. This is particularly emphasised by an anecdote from the older female focus group:

“I was a tea lover, when I'm not taking tea or coffee, I get a headache and dizziness, so I decided not to take it anymore. I tried Rooibos tea, because someone told me that Rooibos is weaker than regular tea and is healthier. What I love about Rooibos tea without sugar, I don't feel headaches even if I only take one cup and I have an appetite for healthy foods for the whole day. When I drank regular tea, I would feel headaches and I wouldn't have an appetite. If you give me normal tea, the food must wait for the whole day. Sugar, I love it, but it has a lot of problems, according to my feelings.”

(Female Participant, F1 Joza Older, March 2014).

Therefore, it could be said that education and experiential knowledge can have an effect on individuals and lead to positive changes. However, it still seems as though this only comes about when the person is already feeling sick.

The idea that education is a primary method to change individuals' behaviours highlights the perceived norm that an individual's weight and unhealthy lifestyles are completely their own choices. It shows that individuals are not aware of the fact that there are often multiple factors influencing others' food consumption behaviours. This therefore brings up the fact that there are a number of environmental constraints that inhibit individuals' desires for knowledge and change. For example, the constraint of time was brought up when participants discussed not only the preparation time for food, but also the concern over exercise.

“Some people don't have time. For instance, in terms of exercise, some people don't have time. They get to wake up early in the morning and they get to do some things, chores, and get to work, come from work late, get to do some stuff and there's no time for exercise.”

(Female Participant, F5 Students, June 2014).

This concern for time therefore causes some individuals to either purchase formal or informal fast food, or it causes them to buy unhealthy foods that are quick and easy to prepare.

Overall, this section highlights the fact that there are numerous factors at play with regards to individuals' desire for knowledge and change. Indeed, it seems that overall, environmental constraints, the power of individual's habits, and the socialisation and peer pressure surrounding food are the number one influences with regards to people's desire to change their food consumption behaviours. Therefore, nutrition interventions need to find creative methods of appealing to target audiences in order to encourage change and increase knowledge.

4.2.4 Discussing a possible Super 7 campaign

Although this was rather a topic of conversation than a direct theme, the Super 7 discussion is an important aspect that needs to be examined separately from the other themes. This is

primarily due to the fact that participants from the second phase of focus groups were asked questions about their thoughts on the Super 7 Campaign (Appendix A) and to contribute their own ideas in order to make it more effective. Therefore, this discussion primarily focuses on increasing individuals' desire for knowledge and change.

When asked about the Super 7 Campaign, all of the participants believed it was a good idea at a high level. Many of them seemed to like and eat, on occasion, all of the Super Seven foods, and even for those who were sceptical over the claimed benefits of the food suggested that they would try out the Super Seven foods – particularly if there were discounts on them. Therefore, in turn, many believed that such a campaign could be quite successful if it was implemented in certain ways. Indeed, the participants were asked about multiple factors surrounding the campaign – including the ideas of specials and discounts, advertising and marketing, and the availability, affordability and quality of the foods in question.

Environmental constraints were the first issues that were problematized. Because, even though most of the items of the Super 7 list are viewed as affordable, sweet potato is often viewed as being both scarce and expensive. However, despite the relative cheapness of the other six foods, many still claim that purchasing healthy foods comes down to the issue of finances. Therefore, it is obvious that many of the participants believed that adding discounts on the selected food would be more effective than any other types of advertising and promotion.

“Discounts and that. Because sometimes you have to... it doesn't... well, advertising them is sometimes not enough, because if you notice, when it comes to this food, this junk food, when they advertise them, they make sure that it's a cheap, it has attractive price [group agreement], a price that people will want to buy it, rather than having... because now if you think of apples, like for instance, a packet of apples will cost me about R10, but I know for a fact that when I buy, um, my Kota, it will definitely be about R8 or something, you know, so now, I think discount, there's discount at Lions, so you're attracted.”

(Female Participant, F5 Students, June 2014).

However, despite the power of discounts, many of the participants would only take these items on top of the food that they regularly buy. In other words, placing discounts on these products might not be the only factor to change people's food purchasing habits.

The participants were also asked as to the most effective method for these products to be advertised and marketed. There were many ideas that were shared in all the focus groups with different ideas being generated in the majority of them. Firstly, with the female parents, there was a discussion about the packaging of the Super Seven items. They claimed that the items should be packed together in certain combos and that it should be possible to 'build your own pack' with a certain combination of the Super Seven foods.

Along with this, many of the parents believed that packaging should also capture children's eyes in order to promote the products amongst youngsters who can potentially influence their parent's food purchasing power to a certain degree.

“It's like that picture of Ben 10. [Mumble] I will also buy that fruit or veg if there's something there for kids, it will start to catch your child. Also you will start to buy it - 'ah, let me try this thing'. Fortunately, when you start to give it to them, they will start to want it.”

(Female Participant, F4 Parents, June 2014).

The second idea, which was discussed during the mixed parents' focus group, had to do with the way in which the products were visible inside of their packages. All of the participants claimed that the products should be packaged in bright and vibrant packaging, but that there should also be a transparent piece where one can see the freshness of the fruit or vegetables.

Indeed, many of the focus groups seemed to believe that the packaging of the products is highly important. The participants agreed that not only should there be bright and vibrant colours, but that the products should be made to stand out in comparison to other products.

“Make them stand out, make them stand out. Like if you walk into a shop and you find a logo for special cooking oil, then you're going to look for it. So I think that it was something that makes it stand out.”

(Male Participant, M5 Students, June 2014).

With the male students, ideas around labelling were discussed at length. Many of them felt that nutritional information should not only be given on the packages, but that it should stand out – much like the warning label on a cigarette box.

“I would say like, if you see on that picture there, the warning sign, it's big, so they must like do it like that so that people can notice. Like to see, that stuff there.”

(Male Participant, M5 Students, June 2014).

Therefore, it is clear that marketing and advertising the Super 7 foods could also make a major difference – along with discounts and specials. However, a very important issue was raised in the female students' focus group. This had to do with the fact that although many people may purchase these items if they had discounts on them, many of them were unaware on how to prepare these foods in healthy ways – this concern particularly applied to the younger participants. Therefore, many of the participants seemed to think that the Super 7 packaging should also include instructions as to the healthiest ways for preparing each of the foods – particularly the vegetables.

“When it comes to porridge, they give you the instructions at the back, like you must add hot water and one spoon of sugar and everything. So I think they should do so.”

(Female Participant, F5 Students, June 2014).

Through these instructions and the nutritional information on the packages, many of the participants seem to believe that the Super 7 Campaign can spread awareness, knowledge and education about the Super 7 foods (and potentially healthy foods in general).

“It could be a good idea because it will help others, by helping that one person, the other one will pass to another one so that it will be a chain. Because if you help another person, the other person will tell a person that has a problem with the healthy way... and they will say 'this and this can help you and this and this and this'.”

(Male Participant, M5 Students, June 2014).

“I don't know whether I'm still on your question, but, in terms of educating residents, people know that these things are... they always know that apples are healthy and

stuff, there's no need to go on educating them further, because they know everything, but it's just that they don't want to be told what to do...”

(Male Participants, M5 Students, June 2014).

With regards to the last comment on education, it’s interesting to note that the participant claims that individuals do not want to be told what to do. This is a perceived norm that has often come up in focus groups. It seems as though telling people exactly what to do could lead to an unsuccessful campaign as many of the participants do not like being told what to do themselves.

This is particularly interesting in light of the fact that individuals also do not want to be told to consume products that could help them lose weight. Rather, individuals would react better if the products were encouraged by depicting their nutritional qualities and their contributions to one’s health. However, it is still important to note that not all the participants felt the same way. The participants from the female students group claimed that they would indeed consume the Super Seven products if they were told it helped them lose weight.

In the male student focus group, another interesting topic arose when the students talked about the Super 7 foods being grown in the location (township) in Grahamstown. In the previous phase of focus groups, it was mentioned that many individuals grow their own vegetables in their gardens, and according to the participants in this group, many of these people then sell their excess vegetables for a bit of profit.

“In the location, there are people who grow those things in the location and then they can sell them. It depends where you buy it, because if you buy it at Shoprite then you are getting it at a higher price than if you buy it from the person who are selling them in, for example the location, you can get it less. So it depends who you're buying it from.”

(Male Participants, M5 Students, June 2014).

Therefore, it could be possible for the Super 7 Campaign to encourage individuals to grow and sell their own Super Seven foods. This means that not only could the vegetables be sold for cheaper than from the store, but that the foods would be much fresher than those

transported from out of town. Indeed, a project like this could even encourage local entrepreneurship and business.

Another idea that was brought up in this focus group was the idea of using infomercials to educate viewers on the Super Seven foods.

“They can have, like, a TV show all for those products and educate people more. Like this morning, I put on my radio in my car as I came to the college and there was a question on the radio, uh, this person... they're asking on the radio, what is the difference... you get the electrical cigarette and you get a normal one, so they ask what is the difference between them? How does it taste and all that stuff... So that is how I can say they can educate people like that... having shows like that and tell them what they need to be doing.”

(Male Participants, M5 Students, June 2014).

Therefore, it seems as though official sources from the television and radio stations need not come from commercials, but can also come from certain programmes that educate individuals and stimulate debate. This could indeed be an interesting method of educating and informing individuals about the Super Seven foods.

Overall, it seems as though there was plenty of input on the Super 7 Campaign. Many of the participants were keen to contribute ideas in order to increase the desire for knowledge and change amongst individuals from Grahamstown and broader areas. Through this discussion, it was plain to see that marketing and advertising, as well as education, and counteracting environmental constraints could be the best methods for a campaign like the Super 7 to be effective. Essentially, increasing individuals' desire for change and normalising the consumption of healthy foods, while at the same time decreasing environmental constraints, could lead to positive outlooks and changes with regards to individuals' food consumptions.

4.3 Phase Four: Observational Data from Spaza Shops

In this phase of the research, eleven spaza shops were observed in order to determine not only the availability of the Super 7 food items, but also to discover to some extent the food purchasing behaviours of individuals in Grahamstown. The eleven spaza shops that were

chosen were spread out around the Grahamstown area – although many of them operated in the same fundamental areas. Traditionally, spaza shops are small ‘grocery’ stores that are operated out of the owner’s house. However, most spaza shops have now moved into their own buildings that are located in fairly central areas. Overall, only one of the spaza shops was operated from a person’s home.

The first thing to note is that all of these spaza shops have varying degrees of popularity. Even those that were situated close together could have varying levels of success. However, it was difficult to gauge the exact popularity of these spaza shops as there was no easily accessible and reliable data with which the owners could refer to. However, it was obvious that some were more popular than others due to the fact that men and women were hanging around only a few of them. According to the owners, the busiest time of the month was the beginning and the end when people had money and that the busiest time of the year was December. On the opposite end of the scale, the middle of the month had the least customers while the least busy time of the year was November (when people were saving up for the festive season). The students also frequented the spaza shops closest to local schools where both sweets and fruits are readily available. This information highlights the fact that aiming the Super 7 foods at children could also be effective.

However, despite the popularity of some of the spaza shops, almost all of them had a very unappealing stock of fruit and vegetables. Out of the Super 7 foods, only five of them were sold at all outlets, with spinach and sweet potato being the two vegetables that were least common. From the remaining foods, apples and bananas were the most visible in the store, often being located right at the front. However, many of these fruits were dirty and appeared to be of low quality. This could potentially be due to the fact that they were not stored in a refrigerated area to keep them fresh. The only products that appeared appealing were carrots as they were the only fruits and vegetables that were packaged and appeared fresh. According to the owners, people did buy their fruits and vegetables, but they were not the most popular products, with basic foods such as bread and mielie meal/samp overtaking the desire for fresh vegetables and fruit. Indeed, throughout my observations of the different spaza shops, not one person purchased a fruit or vegetable. Therefore, increasing the quality of the Super 7 foods supplied to spaza shops could increase their appeal, and thus increase their popularity.

When asked about their supply, the owners claimed that there was a delivery truck from Grahamstown's Fruit & Veg that would deliver produce whenever they needed. However, the need to restock these items varied from spaza shop to spaza shop. At best, there were a few of the shops that would restock their fruit and veg once a week. However, the majority of the spaza shops only restocked their supply once a month – highlighting the fact that fresh fruit and vegetables are clearly not in demand in certain areas.

Overall, the observational data from the spaza shops highlights the fact that the Super 7 foods are not in high demand and that the stocks of fruits and vegetables are of low quality. However, these shops have a certain potential to get involved with the Super 7 Campaign and could be encouraged to promote certain fruits and vegetables. This is primarily due to the fact that although popularity of the spaza shops differ, they are still being frequented by all types of people in the Grahamstown community.

4.4 Summary

Overall, the main findings of this research suggest that the three most powerful influential factors that affect people's food consumption behaviours is that of socialisation and peer pressure, the environmental constraint of cost and, thirdly, what this study has called the power of habit and the desire to change. It was clear just how powerful the social shaping of individual's habits and attitudes towards certain types of foods are. This is particularly due to the fact that family members and friends often encourage certain types of behaviours that eventually form into habit. Costs and availability, not unsurprisingly, were also significant shapers of collective and individuals' food consumption behaviours. Various habits that are formed around food – related to social and community 'collective' eating experiences often inhibit individuals' desire for knowledge and change, even where there is an inkling that aspects of current diet are unhealthy in the short and long term. Overall, as many studies have shown, people are very set in their ways. Even contemplating changing is difficult – thinking about how actual sustainable change could be achieved is even harder – and that is just in the focus groups. In the real world, if a fruit and vegetable promotion campaign was to be implemented, such a campaign would need to address all these issues.

CHAPTER FIVE:

Conclusions and Recommendations

5.1 Overall Findings

The three core themes that emerged from the focus groups resonate with many of the themes explored in Chapter Two pertaining to the determinants of nutrition. Indeed, it is clear to see that on a structural level, the environmental constraint of cost was one of the major issues facing individuals attempting to live healthy nutritious lifestyles. On the socio-cultural level, social consumption (eating with family and friends etc.) shape individual's food consumption behaviour through the socialisation and generalised peer pressures surrounding food that seem to be present from an early age. Finally, on a behavioural level, due to the power of habit, individuals often seem to have a relatively low desire for change (although they still have a fair desire for knowledge). Of course all three of these factors interact and influence each other, while at the same time influencing other factors that all affect individuals' eating behaviours.

But aside from these three primary themes, it is also important to note that there may be other unseen factors impacting on individuals from Grahamstown that did not come through clearly in the focus groups. Although these could be difficult to find, it is through the examination of the various external factors in Chapter Two that attempts to examine all the determinants that affect individuals' food purchasing and consumption behaviours. Therefore, it is important to keep all of these factors in mind when designing a media-orientated nutrition campaign.

With regards to the IBM discussed in Chapter Three and utilised in the analysis of the focus group data, it is clear to see that the three themes are obviously the primary factors influencing individuals' food consumption behaviours. For example, individuals' knowledge and habit seem to have a direct impact on their attitudes and therefore their desire for further knowledge and change. This is seen with the fact that individuals generally tend to have positive attitudes towards healthy lifestyles and healthy foods as a result of their *knowledge*. However, they do also seem to have positive attitudes towards fast food, both formal and informal, as a result of their *habit*. Therefore, attitude seems to be defined by these external factors of knowledge and habit. Of course, through the analysis of the IBM, it is clear to see that the environmental constraint of cost has a direct impact on participants' personal agency due to the fact that cost is the primary constraint that every participant claims to be true. Therefore, it is clear that many have a low level of personal agency due to the fact that they believe that they cannot lead healthy lives without a decent level of income. Finally, the third

theme fits nicely into the IBM as the socialisation and peer pressure surrounding food is clearly part of an individuals perceived norms. Therefore, both individuals' beliefs and actions surrounding food behaviour has a heavy influence on those around them – particularly through the family unit and through friends.

However, it is important to note that this research has managed to prioritise the most influential factors that impact on these behaviours in Grahamstown amongst resource poor isiXhosa men and women. Therefore, this information could be used to generate effective media-orientated nutrition campaigns aimed at individuals living in similar circumstances.

5.2 Revisiting the Super 7 campaign

After having completed an examination of the Super 7's specific target audience, a step-by-step process can be developed in order to further the ideas around the implementation of such a campaign. This process can then be used to inform a set of guidelines that can be generally applied to nutrition interventions aimed at resource-poor isiXhosa men and women. This is a schematic representation of this process.



Figure 2: Steps Needed for a Successful Super 7 Campaign

Step One: Understand the audience

This entire thesis is essentially the process that is needed in order to understand the behaviours of the target audiences of the Super 7 Campaign. Through this examination, it is clear that the people of Grahamstown are primarily influenced by social norms, the environmental constraint of cost, and the relatively low desire for change. Therefore it is clear that individuals of Grahamstown are limited in their nutritional choices on an individual-

societal-, and environmental-level. This links closely to the ideas discussed in Chapter Two which examines the current nutritional landscape in South Africa and the multilevel nutritional restrictions that are present within South African society – namely that of personal agency, socio-cultural determinants (such as social integration), foundational determinants (such as the cost of food and the presence of ‘Big Food’), and national and international food policies. Indeed, in order for the Super 7 Campaign to be successful, these three primary themes need to be addressed in the steps that follow.

However, before looking at the next steps, it is also important to note here that although body image can play a factor in individuals’ behaviours, it seems as though discussing body weight in the Super 7 Campaign should be strongly discouraged due to the fact that Grahamstown citizens are more concerned with being healthy than with losing or gaining weight. This is a result of the complex issues around body weight in the isiXhosa culture and the tendency to filter out what is at direct conflict with culture.

Step Two: Create Partnerships

One of the biggest inhibiting factors when it comes to eating healthy is that of the environmental constraint of cost. Indeed, many of the participants claimed that when grocery shopping, they always examine the cost of the products first, thus basing their choice on cost effective products. Therefore, in the Super 7 Campaign, the constraint of cost should be lessened through the creation of partnerships with local supermarkets, grocery stores and spaza shops. By creating these partnerships, one could encourage the implementation of discounts to be placed on the Super 7 items. There should of course be a set of criteria that determines these discounts. For example, if a customer purchases all the ABCs (apples, bananas, carrots), they could be allowed a certain discount, while purchasing all seven fruits and vegetables could allow for an even larger discount. Another result of creating partnerships with supermarkets and local food stores is that the availability, and perhaps even the quality, of the promoted items will increase – both of which are tactics used by ‘Big Food’ to increase their presence and normalisation. Therefore, through the process of increased accessibility on all levels, the consumption of the Super 7 foods could become more normalised within Grahamstown and thus be more readily accepted and consumed.

Other important partnerships could also include those with local schools and entrepreneurs. These partnerships could revolve around the implementation of community, school, or

individual gardens that produce some of the Super 7 foods for school lunches and local businesses. This has the added benefit of not only making the foods more affordable and accessible, but it could also act as a multilevel educational tool disseminated through the community about gardening and nutrition. Therefore, these types of partnerships could further normalise the consumption of Super 7 foods and dissipate some of the restrictions of the environmental constraint of cost.

Step Three: Product Branding and Placement

As discussed in Chapter Three, creating a brand is of utmost importance when it comes to aiding in the agenda setting process. This is due to the fact that a memorable brand and clear product placement not only makes a campaign more recognisable, but it could also aid in the omnipresence of other media utilised by that campaign. With regards to the Super 7, this can be done in numerous ways:

Firstly, in order to make the products more appealing to both adults and children, bright and colourful logos and mascots should be designed to accompany the Super 7 foods. This idea primary comes from the focus groups where parents suggested that fun colours and mascots could not only attract parents and children, but also other individuals.

Secondly, the Super 7 foods should be placed in the grocery stores where they are visible and clearly part of a promotional campaign that allows for discounts. Therefore, products should be grouped on the shelves according to their acronyms of ABCs (apples, bananas, carrots) and SPOTS (sweet potatoes, onions, tomatoes, spinach). This placement can be accompanied by logos, mascots and educational information that give a variety of information – ranging from fun facts about the Super 7 foods to methods of cooking those particular foods in the healthiest of ways.

Thirdly, if funding permits, easy packaging and bundling of the Super 7 foods should be made available. This could be as simple as clear plastic bags that can be filled with groupings of the Super 7 foods. This packaging should be relatively simple so as to be as cost effective as possible. However, it should also contain some useful information and cooking recommendations to aid as educational material.

Overall, the tactics from this section not only fall into the idea of agenda setting, but also incorporate the knowledge gap theory (through the educational materials), the accumulation theory (through the dissemination of multiple forms of media), and even the modelling and social expectation theories (through the use of logos and mascots).

Step Four: Advertising and Marketing

Advertising and marketing also fall under the banner of agenda setting. Indeed, this could be the most effective method of getting people thinking about the Super 7 Campaign and nutrition in general. Therefore, various advertising and marketing strategies should be employed in order to normalise and make the Super 7 foods more acceptable. This can be done in numerous ways:

Firstly, according to the agenda setting and accumulation theories, the Super 7 Campaign should utilise as many media channels as possible to promote the Super 7 foods – these should include television, radio, and newspaper adverts, as well as the utilisation of social media. The advertising should therefore also be as appealing as possible through clever ‘storylines’ and catchy soundscapes that increase their memorability and omnipresence. Through this and the use of social media, the Super 7 Campaign will not only create a space for individuals to just think about nutrition, but will also allow for a space in which individuals want to communicate and discuss with each other about the topic of nutrition.

Secondly, partnerships could be created with local radio stations and newspapers to incorporate educational supplements about the Super 7 foods within their regular programming. This can be through edutainment programmes or through regular programming. The important thing here is that any education supplements should include a role model that is respected and relatable to the target audience and that the material is relevant to people’s lives. This is so that the consumption of the Super 7 foods and other healthy foods can become normalised and the issues around the desire to change and the peer pressure and socialisation of food can be positively affected.

Step Five: Ensure Longevity

Of course the most difficult step is to ensure the longevity of the Super 7 Campaign. This is due to the fact that there could be a number of logistical constraints, including cost. However, in order for this campaign to effectively change the social norms around healthy eating in

Grahamstown, it needs to employ some methods to ensure its longevity. Fortunately, through the creation of certain partnerships, (for example, with local entrepreneurs), this could be achieved through the encouragement of independent entrepreneurship from the Super 7 Campaign. Also, creating adverts that can be repeated is one method of creating longevity. Overall, it is difficult to discuss effective methods of increasing longevity until the campaign has actually been implemented. This is mainly due to the fact that finding out the short-term effects of the Super 7 Campaign can only be done once it is actually implemented.

5.3 Guidelines for Potential Media-Based Nutrition Interventions

Below is a table that outlines a variety of evidence-based guidelines that could be potentially used to implement effective media-centric nutrition interventions. The guidelines draw from a combination of the literature reviews in Chapters Two and Three, as well as the results from the Grahamstown case study surrounding the hypothetical Super 7 Campaign.

Table 6: Evidence-Based Guidelines for Media-Centric Nutrition Campaigns

Increase Affordability	Creating specials and discounts on selected healthy foods should be one of the primary goals of all nutrition interventions, even those which are media-orientated. This is due to the fact that many individuals need to have their personal agency increased by decreasing certain visible environmental constraints such as cost. Therefore, media-orientated campaigns should focus on creating partnerships with supermarkets and other grocery store outlets to create specials and discounts on selected items.
Ensure Quality	When selecting items to be promoted through nutrition campaigns, organisers need to select quality foods that are not only cost efficient, but also contain healthy nutrients that increase customers' health. This selection process should include research into not only the product's nutritional statuses, but it should also include research into its availability and cost price.
Increase Availability	Nutrition campaigns should support local businesses and entrepreneurship by making their products available to local supermarkets and spaza shops, thus allowing individuals living far away from supermarkets to have constant access to healthy foods. Another method of increasing availability is to ensure that these local stores have the capacity to keep high quality products such as fruits and vegetables by encouraging correct storage practices.
Educate	Media-centric health interventions should increase education and knowledge about healthy diets and lifestyles. Unfortunately, there is not one single effective method that can be used on its own. Therefore, media-orientated campaigns should utilise as many platforms as possible in order

	<p>to educate individuals about their products.</p> <p>Education should also begin at the school-level, encouraging young students to become informed about healthy lifestyles and diets. This could counteract any bad nutritional habits that are formed in the family unit and could lead to increased awareness of healthy diets from a young age.</p> <p>Vegetable gardens should also be encouraged at under-resourced schools. This could not only increase the availability of healthy foods for children, but it could also teach young children important life skills.</p> <p>It is important to note that media campaigns should not dictate information towards their audiences. They should rather engage the audience by generating debate over the best methods to follow healthy lifestyles and diets. Talk shows and other programming on broadcasting platforms could be the most effective tools for encouraging local debate around the topic of nutrition.</p>
Normalise	<p>The socialisation and peer pressure surrounding food consumption is seen to be a major factor that influences individuals' eating habits. Therefore, media-orientated nutrition interventions should attempt to normalise the consumption of healthy foods. This can be done in numerous ways, depending on the target audience and the culture in which the target audience lives. Generally, media campaigns should attempt to increase the social status associated with healthy foods by not only educating audiences, but also by increasing their availability and affordability. As a result, positive associations could be applied to these healthy foods, thus increasing its social status.</p> <p>Respected and trusted individuals could also be used in order to normalise healthy foods included in nutrition campaigns. However, it is important to note that although audiences admire and respect local celebrities, it is important that they should be able to relate to them. Therefore, selecting slim fashion models from wealthy areas in large cities to promote nutrition campaigns could be ineffectual as many living in resource poor situations cannot relate to this lifestyle.</p>
Reward Positive Behaviours	<p>Rewarding individuals for their healthy behaviours could be an effective method to increase the popularity of foods promoted by nutrition interventions. Much like the Discovery Vitality programme²², nutrition interventions could utilise a system that rewards customers for purchasing healthy products. Methods of rewarding positive behaviours include such things as giving discounts to customers or creating competitions and giveaways to those partaking in the healthy behaviour.</p>
Packaging	<p>Many individuals react positively towards attractive packaging and placement of certain products. Therefore, improving the packaging of healthy items could increase its popularity. This can be done in numerous ways:</p>

²² (Discovery Vitality, 2015).

	<ul style="list-style-type: none"> • Use vibrant colours and patterns to attract consumers. • Ensure the quality of fresh fruit and vegetables by using transparent plastic in the package design. • Incorporate a recognisable ‘mascot’/design a ‘mascot’ that appeals to adults and children. • Promote the campaign within the stores themselves. • Place promoted products within the customers’ eye lines. • Educate consumers by including facts and healthy cooking instructions on the front and back of the packaging.
Advertising	<p>Nutrition campaigns should focus on more than pure education – they should also create attractive and memorable advertising that draws the audience in. When promoting certain products, nutrition campaigns should utilise the following ideas in their advertising:</p> <ul style="list-style-type: none"> • Use as many mediums as possible (from radio to television to print media) • Making the nutrition campaign products appear appealing in adverts should be a top priority – directly after making the advert informative • Create jingles, logos and taglines that are memorable. • Utilise the idea of modelling. Just like with packaging, nutrition campaigns should increase the social status of healthy foods by utilising the concept of modelling and including respected and recognised individuals within their adverts.

5.4 Conclusion and Implications for Further Study

A media-based nutrition campaign aimed at resource poor isiXhosa individuals could potentially be highly effective – if implemented in the correct fashion. This of course has cost implications: when compared to the budgets of ‘Big Food’, it begs the question of how such campaigns might be able to achieve a similar level of visibility and traction. However, it is worth noting that media campaigns, such as these, need to be carefully planned and that they need to be target audience specific. Therefore, although these guidelines developed from this research may be peri-urban, resource poor, and isiXhosa specific, the same research method can be applied to any target audience in order to generate a similar list of guidelines.

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Appendix A

The ‘Super 7’ Campaign

The Super 7 campaign works on a similar thought process as the ‘five-a-day diet’, which encourages people to eat at least five different types of fruits and vegetables every day. However, the Super Seven campaign will encourage people to include seven specific fruits and vegetables into their everyday diet. These food items include apples, bananas, carrots (ABCs), and sweet potatoes, onions, tomatoes, spinach (SPOTS).

The ABCs

Apples

Bananas

Carrots

The ABCs are on-the-go foods that can easily be peeled and eaten raw as part of a meal or as a part of a nutritious snack. Therefore, the ABC foods are perfect for children’s school lunches and for adult’s work lunches. This means that the Super 7 campaign will try to package these fruits and veg into affordable lunchbox-type packaging that school kids, and even adults, can take with them for lunch.

SPOTS

Sweet

Potato

Onion

Tomato

Spinach

The SPOTS are all vegetables that are often used in cooking. Although most of them can be eaten raw, many prefer to cook the items in SPOTS. Therefore, these items will be packaged together into affordable packages that consumers can buy and use together in cooking.

As a way of encouraging these foods further, discounts and attractive packaging may be used in order for consumers to find these items more appealing. However, this document does not

go into such detail – but will rather look at the Super 7 foods in particular in order to understand their health benefits, their seasonality, their cost, and the best ways in which to prepare them. But first, this paper briefly examines selected minerals and vitamins that are common in each of these Super 7 foods.

Selected common Super 7 minerals and vitamins and their health benefits

Calcium

Super 7 top three: Spinach, carrots, sweet potatoes

“The major inorganic component of bones and teeth; the total body content of an adult is about 1-1.5kg (15-38mol). The small amounts in blood plasma (2.1-2.6mmol/L, 85-105mg/L) and in tissues play a vital role in the excitability of nerve tissue, the control muscle contraction, and the integration and regulation of metabolic processes.”
(Bender, 2009: 97-9).

Calcium is therefore good for strong teeth and bones, and its intake should be increased with the ageing process to “prevent bone thinning (osteopenia in a mild form and osteoporosis in a severe form with a high risk of bone fractures)” (Opie, 2011: 109).

Iron

Super 7 top three: Spinach, sweet potato, carrots

Iron is an essential mineral. It aids in transporting oxygen to the body cells, thus making sure that organ systems get enough oxygen to function properly (Organic Facts, 2011).

Iron deficiency is “the most prevalent micronutrient deficiency globally” (Academy of Science South Africa, 2013: 120). In South Africa particularly, there is a reported rate of 40% for anaemia and 67% for low iron stores in 6-12 month-old infants, while the national prevalence of anaemia was estimated at 24.1% (Academy of Science South Africa, 2013: 120). Therefore, a greater focus needs to be placed on food items that are high in iron, particularly spinach, which has the highest level of iron compared to the other Super 7 foods by more than 2mg per 100g (USDA National Nutrient Database, 2014).

Magnesium

Super 7 top three: Spinach, bananas, sweet potatoes

Magnesium is “necessary for energy metabolism, maintaining muscle and nerve function, heart rhythm, a healthy immune system and maintaining blood pressure” (Nordqvist J, 2014d).

Potassium

Super 7 top three: Spinach, bananas, sweet potatoes

“An essential mineral, widespread in nature; the human body contains about 125g, mostly intracellular. Reference intake for adults is 3.5g/day; abundant in vegetables, potatoes, fruit (especially bananas).”
(Bender, 2009: 434)

Potassium also has a whole host of health benefits that are “important for heart and bone health and reduces the risk of stroke and coronary heart disease” (Weaver, 2013: 368)

Vitamin A

Super 7 top three: Carrots, sweet potatoes, spinach

Vitamin A is “essential for the health and well-being of an individual” (NICUS, 2007b: 1).

This is because vitamin A can be beneficial in the following areas:

- Growth – vitamin A helps children grow and develop properly
- Resistance to infection
- Vision – vitamin A plays a role in maintaining good eyesight

(NICUS, 2007b: 1).

Vitamin A deficiency (VAD) is “common in many developing countries, being second only to iron deficiency as the highest nutrition-related problem in these countries” (Academy of Science South Africa, 2013: 39). Therefore, foods rich in vitamin A should be consumed on a regular basis and include carrots, sweet potatoes and spinach. Vitamin A supplementation can also “reduce the risk of child morbidity and mortality, as well as the risk of severe diarrhoea and measles” (Academy of Science South Africa, 2013: 39).

Vitamin C

Super 7 top three: Spinach, tomatoes, bananas

“Ascorbic acid. Historically inadequate intake of vitamin C led to scurvy, especially common among sailors unable to obtain fruits and vegetables during long voyages. It has three main areas of function: i) as a general (non-enzymic) antioxidant, including the reduction of oxidized vitamin E in cell membranes; ii) as a coenzyme in the hydroxylation of lysine and proline in the synthesis of collagen and elastin, and hence essential for the normal function of connective tissue; iii) as a coenzyme in the formation of noradrenaline.”

(Bender, 2009: 558)

Vitamin C can also potentially reduce the risk of cardiovascular disease and cancer, while modestly protecting from the common cold (Opie, 2011: 97). However, “the data with Vitamin C are controversial. There have been no large well-designed prospective outcome studies” (Opie, 2011: 97).

Vitamin E

Super 7 top three: Spinach, carrots, tomatoes

Vitamin E “functions primarily as an antioxidant in cell membranes, protecting unsaturated fatty acids from oxidative damage” (Bender, 2009: 560). Vitamin E could also potentially protect against cognitive decline (Opie, 2011: 96). However, not all studies and academics agree with these findings and warn against people from using Vitamin E to replace other preventative measures (Opie, 2011: 96-7).

Folate

Super 7 top three: Spinach, carrots, onions

Folic acid is “a major component of the leafy vegetables found in the Mediterranean diet” (Opie, 2011: 162). Therefore, it is obvious that spinach has the highest level of folic acid compared to the other Super 7 foods (194µg per 100g) (USDA National Nutrient Database,

2014). Although there is conflicting data about the various health benefits that come from folate, it is still important to understand the health areas that folic acid could be implicated.

Folate could potentially aid in these conditions:

- Haemopoietic
- Developmental defects
 - Neural tube defects
 - Congenital heart defects
 - Down Syndrome
 - Preterm birth
 - Orofacial clefts
- Cardiovascular disease
- Neuropsychiatric
 - Impairment of cognitive functions
 - Depression
- Cancer
 - Colorectal cancer
 - Breast cancer
 - Prostate cancer
 - Other cancers
- Leukaemia

(Academy of Science South Africa, 2013: 89-94).

Overall, these seven fruits and vegetables contain all the nutrients and minerals that individual's need to maintain a healthy diet. Therefore, this report will now focus on each of the Super 7 foods – outlining their nutritional status, their health benefits, any potential precautions, their cost and availability, and different preparation options.

Apples

Definition:



“Fruit of the tree *Malus sylvestris* and its many cultivars and hybrids; there are more than 2000 varieties in the British National Fruit Collection. The first apple seeds in North America are believed to have been planted in 1629 in Massachusetts Bay by Gov. John Endcott. Crab apples are grown mainly for decoration and for pollination of fruit-bearing trees, although the sour fruit can be used for making jelly. Cooking apples are generally sourer

varieties than dessert apples, and have flesh that crumbles on cooking; cider apples are sour varieties especially suited to the making of cider. One apple (110g) provides 2.2g of dietary fibre and supplies 40kcal (165kJ).”

(Bender, 2009: 34)

Nutritional Status:

Nutrient		Apples, raw, with skin		Nutrient		Apples, raw, with skin	
Proximates	Unit	Value per 100g		Minerals & Vitamins	Unit	Value per 100g	
Water	g	85.56		Calcium, Ca	mg	6	
Energy	kcal	52		Iron, Fe	mg	0.12	
Protein	g	0.26		Magnesium, Mg	mg	5	
Total lipid (fat)	g	0.17		Phosphorus, P	mg	11	
Carbohydrate, by difference	g	13.81		Potassium, K	mg	107	
Fiber, total dietary	g	2.4		Sodium, Na	mg	1	
Sugars, total	g	10.39		Zinc, Zn	mg	0.04	
				Vitamin A, RAE	µg	3	
				Vitamin B-6	mg	0.041	
				Vitamin C	mg	4.6	
				Vitamin K	µg	2.2	

Vitamin E	mg	0.18
Niacin	mg	0.091
Folate, DFE	µg	3

Table 7: Adapted table of nutrients of Apples, raw, with skin (USDA National Nutrient Database, 2014)

Health Benefits:

According to a recent series of articles published on Medical News Today, apples rank number one on their top 10 healthy foods list (Nordqvist C, 2014). This is because apples are “rich in Vitamin C (a powerful natural antioxidant), B-complex vitamins, dietary fiber, phytonutrients (which help protect the body from the detrimental effects of free radicals), and minerals such as calcium and potassium” (Nordqvist J, 2014b). Indeed, a collection of research studies have found numerous health benefits of apples, including:

- Improving neurological health
- Preventing dementia
- Reducing risk of stroke
- Lower levels of bad cholesterol
- Reduce the risk of diabetes
- Ward off breast cancer
- Preventing vascular deaths among people over 50

(Nordqvist J, 2014b)

Precautions:

One of the negative aspects of apples is the fact that they hold the second highest amount of natural sugars amongst the Super 7 foods with 10.39g in a 100g serving of raw, unskinned apples (USDA National Nutrient Database for Standard Reference, 2014). This means that there could be fear of these sugar levels as they could be implicated in diabetes. According to the American Diabetes Association, however, “the natural sugar in fruit does not pose a danger to diabetics” (Appleby, 2014). Therefore, individuals should not be too concerned over the levels of sugar as “the health benefits of fruit do trump its relatively high sugar content” (Schuna, 2014).

Another potential danger of apples is the fact that its seeds contain trace amounts of cyanide (Nordqvist J, 2014b). However, you would have to consume a large amount of seeds in order for it to be effective – although you should still avoid eating the seeds (Nordqvist J, 2014b).

One final negative effect of apples is that, according to a study published in the Journal of Dentistry, fruits such as apples “could be up to four times more damaging to teeth than carbonated drinks” (King’s College London, 2011). However, as Professor David Barlett says, “It’s not what you eat, it’s how you eat it – an apple a day is good, but taking all day to eat the apple can damage teeth” (Barlett In King’s College London, 2011). Therefore, Barlett suggests that apples should rather be consumed during meal times in order to reduce its damage to teeth.

Overall, the benefits of apples far outweigh the negatives – and although people need to be aware of the potential dangers, an apple a day *could* keep the doctor away.

Seasonality and Availability:

Although apples are available all-year round at supermarkets, the table below highlights the official times that apples are in season.

Spring			Summer			Autumn			Winter		
Sept	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	June	July	Aug

Cost:

At the time of writing, the following costs were seen at four of the main grocery stores in Grahamstown.

Pick ‘n Pay: R25.95/1.5kg

Checkers: R22/1.5kg

Fruit and Veg: R16.99-R21.99/1.5kg

Shoprite: R18-R25/1.5kg

Optional ways of preparation:

Apples are best eaten raw with the skin still on. Therefore, apples, along with bananas and carrots, make the best on-the-go snacks.

Apples can also be peeled and used in baking – however, one needs to be careful of foods that add extra sugar to the apples.

Bananas

Definition:

“Fruit of the genus *Musa*; cultivated varieties are sterile hybrids, and so cannot be given species names. Dessert bananas have a high sugar content (17-19%) and are eaten raw; plantains (sometimes known as green bananas) have a higher starch and lower sugar content and are picked when too hard to be eaten raw.



One medium banana (100g) is a good source of vitamin A; a source of vitamins B6 and C, and copper; contains 0.3g of fat, of which 33% is saturated; provides 3g of dietary fibre; supplies 86kcal (360kJ). The sodium content is low (1.2mg/100g) so bananas are used in low-sodium diets”

(Bender, 2009: 51)

Nutritional Status

Nutrient			Nutrient		
Bananas, raw			Bananas, raw		
Proximates	Unit	Value per 100g	Minerals & Vitamins	Unit	Value per 100g
Water	g	74.91	Calcium, Ca	mg	5
Energy	kcal	89	Iron, Fe	mg	0.26
Protein	g	1.09	Magnesium, Mg	mg	27
Total lipid (fat)	g	0.33	Phosphorus, P	mg	22
Carbohydrate, by difference	g	22.84	Potassium, K	mg	358
Fiber, total dietary	g	2.6	Sodium, Na	mg	1
Sugars, total	g	12.23	Zinc, Zn	mg	0.15
		74.91	Vitamin A, RAE	µg	3
		89	Vitamin B-6	mg	0.367

Vitamin C	mg	8.7
Vitamin K	µg	0.5
Vitamin E	mg	0.10
Niacin	mg	0.665
Folate, DFE	µg	20

Table 8: Adapted table of nutrients of Bananas, raw (USDA National Nutrient Database, 2014)

Health Benefits:

Bananas are very interesting fruit – today, they “are grown in at least 107 countries and are ranked fourth among the world’s food crops in monetary value” (Nordqvist J, 2014c). But what about the health benefits of bananas? Firstly, compared to the other Super 7 foods, bananas are high in potassium (358mg per 100g – ranked second after spinach) and has the lowest level of sodium (1mg per 100g – ranked the same as apples) (USDA National Nutrient Database, 2014). Therefore, bananas are perfect for low-sodium diets and have a whole host of health benefits thanks to potassium.

Bananas are considered to have the following health benefits:

- Decreasing blood pressure (due to low sodium and high potassium)
- Lessens the chance of developing asthma
- Reduces risk of cancer
- Increases heart health
- Is beneficial to diabetics
- Help treat diarrhoea
- Preserves memory and boosts mood

(Nordqvist J, 2014c).

Precautions:

Consuming high levels of potassium “can be harmful for those whose kidneys are not fully functional” (Nordqvist J, 2014c). Therefore, high potassium foods should not be consumed when taking beta-blockers (a type of medication that “can cause potassium levels to increase in the blood”) (Nordqvist J, 2014c).

Other than this, bananas pose no other risks and negatives.

Seasonality and Availability:

Due to the fact that bananas are grown all over the world, they are always ready in supermarkets. However, below is a table that details the seasonality of bananas.

Spring			Summer			Autumn			Winter		
Sept	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	June	July	Aug

Cost:

At the time of writing, the following costs were seen at four of the main grocery stores in Grahamstown.

Pick ‘n Pay: R22.95/1.5kg

Checkers: R12.99/kg

Fruit and Veg: R10.99/kg

Shoprite: R12.99/kg

Optional ways of preparation:

Banana peels act as a sort of ‘container’ that can be peeled when ready to eat. Therefore, bananas should be stored with their peels on at room temperature (Nordqvist J, 2014c). And incorporating bananas in your diet can be done in one of the following ways:

- Eaten when ripened as a portable snack
- Slice a banana into your morning cereal or oatmeal
- Mashed bananas can be used to replace oil or butter when baking
- Peeled and frozen bananas make great additions to smoothies
- In 2008, the Morning Banana Diet fad recommended “eating a banana in the morning along with water, eating a normal lunch and having dinner before 8pm” (Nordqvist J, 2014c).

Carrots

Definition:



“The root of *Daucus carota*, commonly used as a vegetable. A 100g portion is a rich source of vitamin A (5-10mg carotene); provides 2.5g of dietary fibre; and supplies 35kcal (145kJ). Peruvian carrot is arracache.”

(Bender, 2009: 108)

Nutritional Status:

Nutrient		Carrots, raw		Nutrient		Carrots, raw	
Proximates	Unit	Value per 100g		Minerals & Vitamins	Unit	Value per 100g	
Water	g	88.29		Calcium, Ca	mg	33	
Energy	kcal	41		Iron, Fe	mg	0.30	
Protein	g	0.93		Magnesium, Mg	mg	12	
Total lipid (fat)	g	0.24		Phosphorus, P	mg	35	
Carbohydrate, by difference	g	9.58		Potassium, K	mg	320	
Fiber, total dietary	g	4.74		Sodium, Na	mg	69	
Sugars, total	g	88.29		Zinc, Zn	mg	0.24	
		41		Vitamin A, RAE	µg	835	
				Vitamin B-6	mg	0.138	
				Vitamin C	mg	5.9	
				Vitamin K	µg	13.2	
				Vitamin E	mg	0.66	
				Niacin	mg	0.983	
				Folate, DFE	µg	19	

Table 9: Adapted table of nutrients of Carrots, raw (USDA National Nutrient Database, 2014)

Health Benefits:

Carrots are considered to be part of the umbelliferous vegetables – along with celery, cilantro, parsley and parsnips (NICUS, 2007a: 4). They are an excellent source of vitamin A (having 835 µg per 100g serving (USDA National Nutrient Database, 2014)) – the highest amongst the Super 7 foods. The antioxidant beta-carotene is what gives carrots their orange colour and are absorbed in the intestine to be converted to vitamin A during digestion (Nordqvist J, 2014e). They can also come in varying colours from purple to yellow to red – with each colour having different antioxidants (Nordqvist J, 2014e).

There is a large body of evidence that suggests that “increased intake of antioxidant-rich fruits and vegetables reduce cancer and cardiovascular disease risk” (Nordqvist J, 2014e). Therefore, carrots can have certain health benefits that reduce the risk of the following cancers:

- Lung cancer
- Colorectal cancer
- Leukaemia
- Prostate cancer

(Nordqvist J, 2014e).

Carrots can also help with a person’s vision, but, contrary to popular belief, carrots can only help with vision for those that already have a vitamin A deficiency (Nordqvist J, 2014e). This is because vitamin A deficiency (a problem in many developing countries such as South Africa) can cause the deterioration of normal vision. Therefore, the high levels of vitamin A in carrots can help correct this issue and even improve vision in those with vitamin A deficiency (Nordqvist J, 2014e).

Other possible health benefits include:

- Blood sugar regulation
- Delay the effects of aging
- Improve immune function

Precautions:

The overconsumption of vitamin A can be toxic to humans. However, it cannot be done through diet alone and is usually associated with the overdosing of vitamin A supplements (Nordqvist J, 2014e).

The overconsumption of carotene “may cause a slight orange tinge in skin colour but is not harmful to health” (Nordqvist J, 2014e).

Seasonality and Availability:

Carrots are available year-round, but only available locally “during their biannual season in the spring and fall” (Nordqvist J, 2014e).

Spring			Summer			Autumn			Winter		
Sept	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	June	July	Aug

Cost:

At the time of writing, the following costs were seen at four of the main grocery stores in Grahamstown.

Pick ‘n Pay: R6.66/kg

Checkers: R4.99/750g

Fruit and Veg: R8.99/kg

Shoprite: R3.99/750g

Optional ways of preparation:

Carrots are a very versatile vegetable and can be eaten raw, steamed, boiled, roasted, and as an ingredient in soups and stews. They can also be bought fresh, frozen, and canned – none of which affect its nutritional value.

Carrots should be stored in a plastic bag in the refrigerator. And it’s best to remove the green stalks before storing as they can draw out the moisture and nutrients from the roots (Nordqvist J, 2014e). They should also be peeled and washed before consuming.

Shredded carrots can be used in a number of dishes, including coleslaw, salad, wraps, and even baked goods. Baby carrots can even be used as a portable snack, or could accompany other vegetables with herbed dips and hummus.

However, the best way to get the most nutritional value from carrots is to eat them raw or steamed (Nordqvist J, 2014e).

Sweet Potatoes

Definition:

“Tubers of the herbaceous climbing plant *Ipomoea batatas*, known in Britain before the Irish potato. Also known as kumara. The flesh may be white, yellow, or pink (if carotene is present); the leaves are also edible. A 200g portion is a rich source of vitamins A (as carotene if pink) and C; a source of iron and vitamin B1; provides 4.5g of dietary fibre; contains 0.4g of fat, of which 16% is saturated; supplies 170kcal (700kJ).”



(Bender, 2009: 435)

Nutritional Status:

Nutrient		Sweet Potatoes, raw, unprepared		Nutrient		Sweet Potatoes, raw, unprepared	
Proximates	Unit	Value per 100g	Minerals & Vitamins	Unit	Value per 100g		
Water	g	77.28	Calcium, Ca	mg	30		
Energy	kcal	86	Iron, Fe	mg	0.61		
Protein	g	1.57	Magnesium, Mg	mg	25		
Total lipid (fat)	g	0.05	Phosphorus, P	mg	47		
Carbohydrate, by difference	g	20.12	Potassium, K	mg	337		
Fiber, total dietary	g	3	Sodium, Na	mg	55		
Sugars, total	g	4.18	Zinc, Zn	mg	0.30		
		77.28	Vitamin A, RAE	µg	709		
		86	Vitamin B-6	mg	0.209		
			Vitamin C	mg	2.4		
			Vitamin K	µg	1.8		
			Vitamin E	mg	0.26		
			Niacin	mg	0.557		

Folate, DFE	µg	11
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Table 10: Adapted table of nutrients of Sweet Potatoes, raw, unprepared (USDA National Nutrient Database, 2014)

Health Benefits:

Ranked number 7 on Medical News Today’s recent list of top 10 healthy foods, sweet potatoes are “rich in dietary fibre, beta carotene, complex carbohydrates, vitamin C, vitamin B6, as well as carotene (the pink, yellow ones)” (Nordqvist C, 2014). Compared to the other Super 7 foods, sweet potato has a high level of vitamin A (NICUS, 2007b: 3) – second only to that of carrots (USDA National Nutrient Database, 2014). Sweet potato is also highest in terms of total dietary fibre, the second highest in terms of calcium, zinc, iron, protein and vitamin B6, and third highest in terms of potassium and magnesium (USDA National Nutrient Database, 2014).

Sweet potatoes are often associated with better nutritional quality than regular white potatoes. However, this is not the case – both regular potatoes and sweet potatoes contain different vitamins and minerals that are needed in the body (Corleone, 2013).

Precautions:

Despite all its health benefits, sweet potatoes constitute part of potatoes, tubers, and legumes, whose inclusion as a vegetable is controversial (Agudo, 2005: 5). This is because the starch content of potatoes and tubers can range between 12% and 50%, thus meaning that several dietary guidelines have classified them as cereals (Naude, 2013: 51). Some dietary guidelines even “explicitly exclude them from the recommendation to increase intake of vegetables” (Agudo, 2005: 5). However, sweet potatoes still contain high levels of vitamins and minerals and should still be consumed.

Seasonality and Availability:

Spring			Summer			Autumn			Winter		
Sept	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	June	July	Aug

Cost:

At the time of writing, the following costs were seen at four of the main grocery stores in Grahamstown.

Pick ‘n Pay: R14.95/kg (special)

Checkers: R19.99/kg

Fruit and Veg: R18.99/kg

Shoprite: R19.99/kg

Optional ways of preparation:

Sweet potato can “substitute for white potatoes in many recipes” (Tremblay, 2014).

Therefore, sweet potatoes can be baked, mashed, or roasted and can be used as healthy side dishes. However, you should always cook your sweet potatoes – you should not eat them raw.

You can also add healthy fats to help facilitate the absorption of vitamin A by coating roast sweet potato with a layer of olive oil (Tremblay, 2014).

Onions

Definition:



“Bulb of *Allium cepa*; there are many varieties with white, brown, and red (purple) skins. A 60g portion, raw, supplies 20kcal (80kJ).”

(Bender, 2009: 392)

Nutritional Status

Nutrient		Onions, raw		Nutrient		Onions, raw	
Proximates	Unit	Value per 100g		Minerals & Vitamins	Unit	Value per 100g	
Water	g	89.11		Calcium, Ca	mg	23	
Energy	kcal	40		Iron, Fe	mg	0.21	
Protein	g	1.10		Magnesium, Mg	mg	10	
Total lipid (fat)	g	0.10		Phosphorus, P	mg	29	
Carbohydrate, by difference	g	9.34		Potassium, K	mg	146	
Fiber, total dietary	g	1.7		Sodium, Na	mg	4	
Sugars, total	g	4.24		Zinc, Zn	mg	0.17	
		89.11		Vitamin A, RAE	µg	0	
		40		Vitamin B-6	mg	0.120	
				Vitamin C	mg	7.4	
				Vitamin K	µg	0.4	
				Vitamin E	mg	0.02	
				Niacin	mg	0.116	
				Folate, DFE	µg	19	

Table 11: Adapted table of nutrients of Onions, raw (USDA National Nutrient Database, 2014)

Health Benefits:

Onions form part of the allium vegetable family – along with garlic, shallots, chives, and leaks (NICUS, 2007a: 4). They come in a variety of sizes, shapes and colours and it is estimated that “105 billion pounds of onions are harvested each year worldwide” (Ware, 2014). In terms of nutrition, onions may not have the highest level of minerals and vitamins compared to the other Super 7 foods, but it does still have many advantages to health:

- Reduces risk of various types of cancer, including
 - Colon cancer
 - Prostate cancer
 - Esophageal and stomach cancer
 - Improves sleep and mood through its levels of folate
 - Improves skin and hair
- (Ware, 2014).

Precautions:

Although there are not many negatives with regards to onions, it is still important to remember that “it is best to eat a diet with variety than to concentrate on individual foods as the key to good health” (Ware, 2014).

Seasonality and Availability:

Spring			Summer			Autumn			Winter		
Sept	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	June	July	Aug

Cost:

At the time of writing, the following costs were seen at four of the main grocery stores in Grahamstown.

Pick ‘n Pay: R10.95 each (special)

Checkers: R9.99 each

Fruit and Veg: R9.99 per kg

Shoprite: R6.00 each

Optional ways of preparation:

When selecting onions, make sure that you pick ones that are dry and firm, and have little scent before they are peeled (Ware, 2014).

In terms of cooking, onions can add a great flavour to any dish “without adding extra calories, fat or sodium” (Ware, 2014). They can be sautéed, roasted, or grilled – and can even be used fresh/raw on top of salads and sandwiches.

Tomatoes

Definition:

“The fruit of *Lycopersicon esculentum*, introduced into England as an ornamental plant in 1596. One medium-sized tomato or six cherry tomatoes (85g) is a good source of vitamin C; provides 1.3g of dietary fibre; supplies 13kcal (54kJ). A 100ml portion of tomato juice is a rich source of vitamin C; a source of vitamin A (as carotene); provides 3g of dietary fibre; supplies 12kcal (50kJ).”

(Bender, 2009: 535)



Nutritional Status:

Nutrient		Tomatoes, red, ripe, raw, year round average	Nutrient		Tomatoes, red, ripe, raw, year round average
Proximates	Unit	Value per 100g	Minerals & Vitamins	Unit	Value per 100g
Water	g	94.52	Calcium, Ca	mg	10
Energy	kcal	18	Iron, Fe	mg	0.27
Protein	g	0.88	Magnesium, Mg	mg	11
Total lipid (fat)	g	0.20	Phosphorus, P	mg	24
Carbohydrate, by difference	g	3.89	Potassium, K	mg	237
Fiber, total dietary	g	1.2	Sodium, Na	mg	5
Sugars, total	g	2.63	Zinc, Zn	mg	0.17
		94.52	Vitamin A, RAE	µg	42
		18	Vitamin B-6	mg	0.080
			Vitamin C	mg	13.7
			Vitamin K	µg	7.9
			Vitamin E	mg	0.54

Niacin	mg	0.594
Folate, DFE	µg	15

Table 12: Adapted table of nutrients of Tomatoes, red, ripe, raw, year round average (USDA National Nutrient Database, 2014)

Health Benefits:

There is lots of debate about whether a tomato is a fruit or a vegetable – with some classifying it as a solanaceous vegetable along with peppers and eggplants (NICUS, 2007a: 4) – however that is not of concern here. Just like the other Super 7 foods, tomatoes have various health benefits and “goes beyond providing just basic nutrition, additionally preventing chronic disease and delivering other health benefits due to beneficial phytochemicals such as lycopene” (Nichols, 2014). Lycopene is an antioxidant that gives tomatoes their rich, red colour and “account for 80 percent of lycopene consumption” (Nichols, 2014). Tomatoes are also high in vitamin A, C and folic acid – the second highest with regards to vitamin C in the Super 7 foods, and the third highest in terms of vitamin E and K (USDA National Nutrient Database, 2014).

Tomatoes can be beneficial in the following ways:

- Help prevent some types of cancers – such as prostate and colorectal cancer
- Lowers blood pressure
- Decrease the risk of diabetes
- Help with healthier skin
- Lowers constipation – due to high water content and fibre
- Prevents certain problems during pregnancy
- Helps with depression

(Nichols, 2014)

Precautions:

Just like with bananas, tomatoes contain high levels of potassium. Therefore, high potassium foods should not be consumed when taking beta-blockers (Nichols, 2014).

According to the Environmental Working Group’s ‘Dirty Dozen’ list, cherry tomatoes are in the top 12 produce that have pesticide residual on them (Environmental Working Group, 2014) – along with apples and spinach.

Even though individuals react differently, those with gastro-esophageal reflux disease “may experience an increase in symptoms, such as heartburn and regurgitation, when consuming highly acidic foods such as tomatoes” (Nichols, 2014).

Seasonality and Availability:

Spring			Summer			Autumn			Winter		
Sept	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	June	July	Aug

Cost:

At the time of writing, the following costs were seen at four of the main grocery stores in Grahamstown.

Pick ‘n Pay: R17.99 per kg

Checkers: R14.99 per kg

Fruit and Veg: R12.99 per kg

Shoprite: R15.99 per kg

Optional ways of preparation:

According to Medical News Today, tomatoes should be stored at room temperature as refrigeration may cause tomatoes to lose their flavour (Nichols, 2014).

However, they do also give some helpful tips:

- Add tomatoes to salads
- Dip cherry tomatoes into hummus or plain yogurt dip for a snack
- Add sliced tomatoes to sandwiches and wraps
- Use tomatoes to make sauces when cooking pasta
- Use diced or canned tomatoes in soups
- Make your own salsa with tomatoes and onions
- Add diced tomatoes to your omelettes or scrambled eggs

(Nichols, 2014).

Spinach

Definition:



“Leaves of *Spinacia oleracea*, introduced into Sicily by invading Saracens in the early 9th century. A 90g portion is a rich source of vitamin A (as carotene), folate, and vitamin C; provides 5.4g of dietary fibre; and supplies 25kcal (100kJ). The content of oxalic acid renders much of the iron and calcium that are presently unavailable.”

(Bender, 2009: 501-2)

Nutritional Status:

Nutrient Spinach, raw			Nutrient Spinach, raw		
Proximates	Unit	Value per 100g	Minerals & Vitamins	Unit	Value per 100g
Water	g	91.40	Calcium, Ca	mg	99
Energy	kcal	23	Iron, Fe	mg	2.71
Protein	g	2.86	Magnesium, Mg	mg	79
Total lipid (fat)	g	0.39	Phosphorus, P	mg	49
Carbohydrate, by difference	g	3.63	Potassium, K	mg	558
Fiber, total dietary	g	2.2	Sodium, Na	mg	79
Sugars, total	g	0.42	Zinc, Zn	mg	0.53
		91.40	Vitamin A, RAE	µg	469
		23	Vitamin B-6	mg	0.195
			Vitamin C	mg	28.1
			Vitamin K	µg	482.9
			Vitamin E	mg	2.03
			Niacin	mg	0.724
			Folate, DFE	µg	194

Table 13: Adapted table of nutrients of Spinach, raw (USDA National Nutrient Database, 2014)

Health Benefits:

Although only ranked number 6 on Medical New Today’s list of top 10 healthy foods (along with other leafy green vegetables), spinach seems to contain some of the highest levels of nutrients compared to the other Super 7 foods (Nordqvist C, 2014). Dark leafy greens like spinach “provide protein, iron, vitamins and minerals” (Nordqvist J, 2014d). Indeed, compared to the other Super 7 foods, spinach is highest in protein, calcium, iron, magnesium, potassium, zinc, vitamin C, vitamin E, and folate, third highest in vitamin A, and lowest in sugar (USDA National Nutrient Database, 2014).

The potential health benefits that come from spinach include:

- Diabetes management
- Cancer prevention
- Asthma prevention
- Lowers blood pressure
- Increases bone health
- Healthy skin and hair
- Promotes regularity

Precautions:

Suddenly increasing your intake of vitamin K-rich foods while on blood-thinners can cause blood clotting and therefore should be avoided (Nordqvist J, 2014d).

Seasonality and Availability:

Spring			Summer			Autumn			Winter		
Sept	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	June	July	Aug

Cost:

At the time of writing, the following costs were seen at four of the main grocery stores in Grahamstown.

Pick ‘n Pay: R7.99 per bunch

Checkers: R12 per 300g

Fruit and Veg: R7.99 (undisclosed amount)

Shoprite: R11.99 per 250g

Optional ways of preparation:

Spinach is “a very versatile vegetable that can be eaten raw or cooked” (Nordqvist J, 2014d). It can be incorporated into a number of dishes, including pastas, soups and casseroles. Baby spinach leaves can be kept in the fridge and used as a salad or sandwich topping instead of iceberg lettuce (Women’s Health, 2009). You can also make a hot side dish by sautéing olive oil, garlic, black pepper, and spinach in a skillet to make wilted spinach (Women’s Health, 2009).

Appendix B

Department of Health Clearance Form (Clinic Questions Included).



Province of the
EASTERN CAPE
HEALTH

Epidemiological Research and Surveillance Management
Ground floor • Grosvenor Lodge • Taylor Street • King William's Town ~
Private Bag X0038 • Bhisho 5605 • REPUBLIC OF SOUTH AFRICA ~
Tel: +27 (0) 40 608 1922/0856 • Fax: +27 (0) 43 642 1409 or +27 (0) 86 662 1322 •
Website: ecdohi.gov.za

TO: MR Chris Booth

Team Leader: RU Discovery Health Journalism Centre

I would like to confirm that the Eastern Cape Department of Health has looked at your request to gather some information that will help you to prepare for your research study. However, kindly be informed that the information that you are permitted to collect is solely for preparation of your study as per your request. No information will seek to address the objectives of your study will be collected until such time you complied with all the Eastern Cape Department of Health requirements.

Permission is therefore granted to collect only information that seek to assist you on the following questions

1. If you think of the last six months, how many cases of obesity related illnesses and conditions have you seen?
2. In your opinion, does your clinic/ hospital have the necessary information and other resources – like adequate medicine and adequately trained staff – to deal with patients who are obese or are affected by obesity related conditions?
3. In your opinion, among the patients you see, would you say obesity affects women more than men? Why would this be?
4. In your opinion, who are most likely to develop obesity and obesity-related conditions?
5. Based on your observations, which wards are most impacted by obesity?
6. Can you tell me about the efforts at this clinic/hospital to create awareness about the effects of obesity and obesity related illnesses?
7. And lastly, when you diagnose patients with obesity related illnesses, what are the recommended next steps for these patients?

NB: You are still expected to submit your ethics approval which thereafter be granted the final permission to conduct research

Your cooperation in this regard will be highly appreciated.

Yours Faithfully

Zonwabele Merile

Manager: Epidemiological Research & Surveillance Management

Appendix C

Sub-District Statistics

Table 14: Prevalence of Diabetes and Hypertension in the Makana Sub-District

Indicator			
Facility	IndicatorName	IndType	Annual
ec Anglo African Street Clinic	Diabetes mellitus prevalence	per1K	20.0
	Hypertension prevalence	per1K	81.6
ec Grahamstown Mobile 1	Diabetes mellitus prevalence	per1K	53.0
	Hypertension prevalence	per1K	357.9
ec Grahamstown Mobile 2	Diabetes mellitus prevalence	per1K	35.6
	Hypertension prevalence	per1K	362.2
ec Grahamstown Mobile 3	Diabetes mellitus prevalence	per1K	47.4
	Hypertension prevalence	per1K	363.8
ec Joza Clinic	Diabetes mellitus prevalence	per1K	16.6
	Hypertension prevalence	per1K	104.6
ec Middle Terrace Clinic	Diabetes mellitus prevalence	per1K	60.2
	Hypertension prevalence	per1K	152.7
ec NG Dlukulu Clinic	Diabetes mellitus prevalence	per1K	17.3
	Hypertension prevalence	per1K	109.2
ec Raglan Road Clinic	Diabetes mellitus prevalence	per1K	10.5
	Hypertension prevalence	per1K	74.8
ec Settlers Day Hospital	Diabetes mellitus prevalence	per1K	49.8
	Hypertension prevalence	per1K	109.3
ec Tanty Clinic	Diabetes mellitus prevalence	per1K	18.1
	Hypertension prevalence	per1K	121.0

Appendix D

Ethical Clearance Form

Ethics Clearance: 2013Q4-4

Principal Investigator: Chris Booth

Dear Mr Booth,

This letter confirms that your research proposal with tracking number 2013Q4-3 and title: *Health Literacy and Nutrition: The impact of the media on perceptions of health and nutrition amongst South African men and women from three areas of Grahamstown* was given ethics clearance by the Rhodes University Ethical Standards Committee on condition to clarify the following stipulations before starting data collection:

- 1) The recruitment process is still not clear: how will the researcher and his community partners recruit participants? Will they simply be approached on the street or recruited in a more systematic fashion?
- 2) Information to the Subject: The information presented to the participants and specific to this study, e.g. in the form of a letter of information, or oral information, has still not been included.
- 3) It is stated that “participants will be asked to complete a questionnaire prior to the focus groups ...”. Please append this questionnaire.
- 4) The application form it says that information to the subjects will be given by the principal investigator (Christopher Booth), however, in the protocol document it says that community partners will be responsible for giving project information to the participants while recruiting them for the focus groups. Please clarify the inconsistency.
- 5) The protocol document says that the participants will be anonymous in any reporting or write-ups on the research, however this is not reflected in the agreement between the researcher and participant – in fact, point number 7 in the agreement says “The report on the project may contain information about my personal and/or word [sic] experiences, attitudes and behaviours”. Aside from the mistake in the document, it is unclear to participants what this entails - are their names revealed and can they be identified? The document has to include a clear statement on privacy, anonymity and confidentiality.
- 6) Point 8 in the agreement says only “I agree to being recorded/videotaped”. More clarity here is again required. Will this be accessed and used only by researchers, and what role will it play in informing a **media** intervention program? These issues remain unclear in the

proposal and it would be concerning if the information gathered from this participants was used in ways which they did not expect. The agreement needs to be far more explicit in this regard explain to participants where the information and media will be stored, who it will be accessed by and what uses it will be put to.

7) Participant group (Sample): further clarification is needed about how the 3 areas selected differ in terms of socio-economic background, gender, cultural derivation and race.

Please ensure that the ethical standards committee is notified should any substantive change(s) be made, for whatever reason, during the research process. This includes changes in investigators and unexpected incidents or effects occurring during data collection.

Yours sincerely

Professor M. Göbel: Chairperson RUEESC.

Appendix E

Questions for clinics and hospitals in Grahamstown: Preliminary Research

1. If you think of the last six months, how many cases of obesity related illnesses and conditions have you seen?
2. In your opinion, does your clinic/hospital have the necessary information and other resources – like adequate medicine and adequately trained staff – to deal with patients who are obese or are affected by obesity related conditions?
3. In your opinion, among the patients you see, would you say obesity affects women more than men? Why would this be?
4. In your opinion, who are most likely to develop obesity and obesity-related conditions?
5. Based on your observations, which wards are most impacted by obesity?
6. Can you tell me about the efforts at this clinic/hospital to create awareness about the effects of obesity and obesity-related illnesses?
7. And lastly, when you diagnose patients with obesity related illnesses, what are the recommended next steps for these patients?

Appendix F
Consent Form

RHODES UNIVERSITY
SCHOOL OF JOURNALISM AND MEDIA STUDIES

AGREEMENT BETWEEN STUDENT RESEARCHER AND RESEARCH PARTICIPANT

I (participant's name) agree to participate in the research project of Christopher Booth on Health Literacy and Nutrition: The impact of the media on perceptions of health and nutrition amongst South African men and women from three areas of Grahamstown).

I understand that:

1. The researcher is a student conducting the research as part of the requirements for a Master's degree at Rhodes University. The researcher may be contacted on _____ (cell phone) or _____ (email). The research project has been approved by the relevant ethics committee(s), and is under the supervision of Prof Harry Dugmore in the School of Journalism and Media Studies at Rhodes University, who may be contacted on _____ (office) or _____ (email).
2. The researcher is interested in understand men and women's perceptions of obesity, health and nutrition.
3. My participation will involve being a part of a group discussion on health, nutrition and obesity for two hours. My participation also means that I am open to a one-on-one interview to further explore the topics and issues raised in the group discussions.
4. I can choose not to answer any questions about aspects of my life and work which I am not willing to disclose.
5. I am invited to voice to the researcher any concerns I have about my participation in the study, or consequences I may experience as a result of my participation, and to have these addressed to my satisfaction.
6. I am free to withdraw from the study at any time – however I commit myself to full participation unless some unusual circumstances occur, or I have concerns about my participation which I did not originally anticipate.
7. The report on the project may contain information about my personal and/or word experiences, attitudes and behaviours.
8. I agree to being recorded/ videotaped.

Signed on (Date):

Participant: _____ Researcher:

Witness 1: _____ Witness 2:

Appendix G

Discussion Guides

First Focus Group and In-depth Interview Discussion Guide

- Ice-breaking questions about what they had for breakfast/lunch & personal background
- Perceptions of health
 - What does it mean to be healthy?
 - How do you know if you are healthy?
 - What do you have to do to be healthy?
 - What is a good body weight? How do you have a healthy body weight or are overweight? Is good body weight the same as the weight you want to be? Why and why not?
 - What is a good body weight to your culture and your friends and family? And the media?
- Health information source (interpersonal and media sources) (e.g., most consumed media, local role models and experts)
 - Where do you get your information on health? What about media?
 - Where do you get information on physical well-being, such as exercise, diet, illnesses, etc? And what media do you use?
 - Name all the places that you *could* get health information? Which ones of these places do you trust? Explain.
- Perceptions of food
 - What type of food is available/popular/accessible in the neighborhood (specific examples)? What do most people eat most often in this neighborhood?
 - What types of food is 1) healthy, 2) traditional, 3) popular, 4) typical, 5) expensive/luxury? Why is this considered healthy food? Is the discussed healthy food 1) accessible/convenient to buy and to cook, 2) affordable, 3) good quality, 4) popular?
 - What are some of the barriers to eating healthy?
 - When you go shopping, what makes you pick one type of food over the other? What is the first thing you look at?
 - When shopping, do you look at the nutritional status of food items?
 - Think back to a recent incident where you had a choice between two types of food, what made you pick the one and not the other?
 - What about adverts? What food adverts can you recall from television, newspapers, etc? What makes them memorable? What do the adverts make you feel? What do they make you think about the food that they are advertising? Would you consider them 'healthy'?
- Perceptions of physical exercise
 - How do you define exercise (housework vs. walking, running, sport)? Does it include housework? What exercise do you do? In your opinion, what types of exercise is most popular, affordable, convenient, effective among local women?
 - What are some of the barriers to exercise? (prompting questions--lack of time, facility, resources; high crime rate; lack of motivation to lose weight; lack of physical activity education in schools and media, etc)
- Critical health issues
 - What are the most important health issues in Grahamstown? Why do you think ___ (the health issue being discussed) is the most serious? Are people aware of the

seriousness and/or prevalence of ___? Do people receive enough help with ___? Is it getting worse? Why?

- Perceptions of overweight and obesity
 - What does overweight/obese mean to you? What is obesity? Is there a difference between obesity and overweight? When you hear the word “overweight” and “obese,” what are your feelings? What kind of image do you have in your mind (gender, race/ethnicity, culture, geography, etc—do people associate obesity with only a particular group of people?)
 - Are children getting bigger? Are there differences between children and adults that are overweight? Why do you think this is? What about the difference between men and women? Do you agree that people are getting bigger? Why? Is this new?
 - Can you be healthy and overweight? Can you be attractive and overweight?
 - What do you think causes obesity?

Second Focus Group and In-depth Interview Discussion Guide

- Ice-breaking questions about what they had for breakfast/lunch & personal background (try to make a game of it, get everyone relaxed).
- Perceptions of health
 - What does it mean to be healthy?
 - How do you know this?
 - How do you know if *you* are healthy?
 - What do you have to do to be healthy? [Specific examples]
 - What is a good body weight?
 - How do you know if you are overweight?
 - Is good body weight the same as the weight you want to be? Why and why not?
 - What is a good body weight to your culture?
 - What is a good body weight to your friends and family?
 - What is a good body weight according to television, radio, newspapers, magazines, etc?
- Health information source (interpersonal and media sources) (e.g., most consumed media, local role models and experts)
 - Where do you get your information on health? (General health) [Specific examples]
 - Do you ever get information from the media? (newspapers, magazines, television, radio)
 - Where do you get information about exercise, diet, illnesses, etc?
 - Do you ever get information from the media? (newspapers, magazines, television, radio)
 - Which of these places are the most trustworthy? Why?
- Perceptions of food
 - What type of food is popular in your area? [Specific examples]
 - Is this food available and accessible? Why or why not?
 - What do most people eat most often in your area?
 - What types of food are healthy?
 - Why is this food healthy?
 - How do you know this food is healthy? [Where did they find out information about this food? From family, the media?]
 - Is this food accessible, affordable and of good quality?
 - Is it easy to buy and cook?

- Is it popular?
 - What types of food are traditional?
 - Are they healthy? Why? How do you know?
 - What types of food are expensive or a luxury to have?
 - Are they healthy? Why? How do you know?
 - What stops you from eating healthily? [Some of the barriers – specific examples]
 - When you go shopping, what makes you pick one type of food over the other?
 - What is the first thing you buy?
 - Do you look at the nutritional status of food items?
 - Let's talk about adverts.
 - What food adverts can you recall from television, newspapers, etc?
 - What makes them memorable?
 - What do the adverts make you feel?
 - What do they make you think about the food that they are advertising? Would you consider them healthy?
 - What is your favourite fast food restaurant chain? [Specific examples]
 - Why?
 - How often do you eat fast food?
 - Do you think you've been eating more fast food compared to when you were younger? Why?
 - Do you ever eat 'informal' fast food, e.g. Kota etc? If so how often, per week or month?
 - Do you ever feel judged for the food you eat? Why?
- Perceptions of physical exercise
 - How do you define exercise? [housework vs. walking, running, sport]
 - Does it include housework?
 - How do you know this?
 - What exercise do you do?
 - In your opinion, what types of exercise is most popular among local men and women?
 - Is it affordable, convenient, effective?
 - What are some of the barriers to exercise?
 - [prompting questions--lack of time, facility, resources; high crime rate; lack of motivation to lose weight; lack of physical activity education in schools and media, etc]
- Critical health issues [Remind them that we are moving away from food and exercise]
 - What are the most important health issues in Grahamstown?
 - Why do you think this is the most serious?
 - Are people aware of the seriousness or prevalence of it?
 - Do people receive enough help with it?
 - Is it getting worse? Why?
- Perceptions of overweight and obesity
 - What is obesity?
 - Is there a difference between obesity and overweight?
 - What does overweight/obese mean to you?
 - When you hear the word "overweight" and "obese," what are your feelings?
 - Do you associate obesity with only a particular group of people? (gender, race/ethnicity, culture, geography, etc)
 - Are children getting bigger?
 - Are there differences between children and adults that are overweight?

- Why do you think this is?
 - What about the difference between men and women?
 - Do you agree that people are getting bigger? Why? Is this new?
 - Can you be healthy and overweight?
 - Can you be attractive and overweight?
 - What do you think causes obesity?
- List of activities
 - Which three of these activities would you be able to do every day?
 - Don't skip breakfast.
 - Eat some fruit or veg with at least one meal.
 - Go for a 15 minute walk.
 - Have fish once a week.
 - Do ten crunches, sit-ups or push-ups (one of the three or all three).
 - Cut back on sugar in your coffee or tea by one or two teaspoons.
 - Don't put more than a pinch of salt on your food at meal times.
 - Drink 8 glasses of water in a day.
 - Stretch your body for five minutes every day.
 - Listen or watch shows on cooking, nutrition, exercise, or health at least once a week.
 - Pick three of these activities to do over the course of the next two/three weeks and try to do them every day. [We will contact them after those three weeks to ask how successful they were]
 - The next time you go to the shops, write down or remember what made you pick one item over the other in that moment. [We will contact them after those three weeks to ask how successful they were]

Third Focus Group and In-depth Interview Discussion Guide

Ice breaker: What is your favourite food? Do you think it's healthy?

Balanced Diet

1. What is a balanced diet? What does it consist of? [Specific examples]
2. What is...
 - a. Fat
 - b. Meat
 - c. Sugar
 - d. Salt
 - e. Proportionality
 - f. Variety and diversity
 - g. Energy expenditure
3. Do you think that you have a balanced diet?
4. What are the barriers to having this diet?
5. What do you think of the following items?
 - a. Apples
 - b. Bananas
 - c. Carrots
 - d. Sweet Potatoes
 - e. Onions

- f. Tomatoes
 - g. Spinach
6. How often do you eat these foods?
 7. Which of these foods do you like and dislike? Why?
 8. Are they popular in Grahamstown?
 9. Are they easily available/affordable?
 10. If they are available, what is their quality like?
 11. When you go shopping, does the nutritional value of a product matter?
 12. What is the first thing you buy?
 13. What is your favourite fast food chain? Why?
 14. How often do you eat fast food?
 15. Do you ever eat 'informal' fast food? E.g. Kota, etc. If so, how often?
 16. If you were told to eat these foods instead of fast food/snacks/informal fast food, would you? Or would you rather eat these foods on top of those foods?
 17. How do you feel after you eat any one of the above mentioned foods?

Body Image

1. What does it mean to be healthy? How do you know this?
2. Do you consider yourself healthy with the current diet you are eating?
3. When do you consider yourself unhealthy? Is it only when you are obviously sick or do you try to maintain your health through exercise and diet?
4. If you were told that these foods made your body healthy, would you eat them? Even if you didn't like them?
5. What if these foods helped you lose weight?

What others do

1. Do you ever compare the way you are eating to your family, your neighbour, your community?
2. What are the barriers to eating healthily in your community?
3. Do you think that others would buy these foods if they were told to?
4. If you were selling these foods to others, how would you get them to buy them? Flashy advertising, education, street vendors, spaza shops, specials?
5. What do you think motivates people to eat the way they do?

Marketing and Advertising

1. What food adverts can you recall from the television, newspapers, etc?
2. What makes them memorable?
3. What do these adverts make you feel?
4. What do they make you think about the food that they are advertising? Would you consider them healthy?
5. If the above foods were in a catchy and flashy advert, would you buy them? (For example, if they made apples look absolutely delicious, would you then crave apples?)

6. What packaging catches your eyes at shopping markets/shops? What about them makes them appealing?
7. Does the packaging of the Super Seven foods capture your eye? What could make them better?
8. Would their health information make them more interesting? What about flashy images on the cover?
9. If these products were aimed towards children, would you buy it for yourself too? Or would you just buy it for your kids?
10. Do you already consider these foods cheap? Or are they too expensive to buy?
11. If there were discounts on these foods, would you buy them over things like rice/potatoes? What would make you buy them?

Super Seven

1. [Explain what Super Seven is] Do you think that this is a good idea? Would you be interested in buying these foods if this happened?
2. What stops you from buying them now?
3. Do you think that advertising and marketing could get people to buy these foods? Is that all that's needed?

Appendix H

Questionnaires

Pre-Questionnaire (Men)

Please choose the answer for the following questions based on your own condition.

1. What is your age? _____

2. What is your race?

3. Your height: _____ (Metres)
Weight: _____ (kg)

4. You consider yourself as:
 - A. Severely underweight
 - B. Underweight
 - C. Normal (healthy weight)
 - D. Overweight
 - E. Moderately obese
 - F. Severely obese
 - G. Not sure

5. How often do you smoke:
 - A. Never
 - B. Occasionally
 - C. Once a week
 - D. A few times a week
 - E. Daily
 - F. Prefer not to say

6. How often do you drink alcohol:
 - A. Never
 - B. Occasionally
 - C. Once a week
 - D. A few times a week
 - E. Daily
 - F. Prefer not to say

7. How often have fast food:
 - A. Never
 - B. Occasionally
 - C. Once a week
 - D. A few times a week
 - E. Daily
 - F. Prefer not to say

8. What is the distance from your household to a nearby grocery store? (Mushi-Brunt, 2007)
- A. Less than a kilometre?
 - B. More than a kilometre?
9. Who does most of the housework in your family?
- A. Myself
 - B. Other male family member(s) _____ (please specify)
 - C. Other female family member(s) _____ (please specify)
 - D. Maid(s)
10. Who cooks the food in your family?
- E. Myself
 - F. Other male family member(s) _____ (please specify)
 - G. Other female family member(s) _____ (please specify)
 - H. Maid(s)
11. What appliances do you have in your household? (Check all that apply; Batnitzky, 2007)
- Running water Washing machine Laundry dryer Dishwasher vacuum cleaner
 - Refrigerator Microwave Stove/Oven Air-conditioner Personal vehicle
12. How many hours do you spend on physical activity in a typical week? _____
13. How often do you visit the clinic/hospital:
- A. Never
 - B. Once a month
 - C. Once a week
 - D. Daily
 - E. Prefer not to say
14. What is your education level?
- A. Less than high school
 - B. High school
 - C. Technical/vocational training
 - D. Associate degree
 - E. Bachelor's degree
 - F. Master's degree
 - G. Doctorate degree
 - H. Prefer not to say

15. What is your current marital status?

- A. Single
- B. Married
- C. Divorced
- D. Separated
- E. Widowed
- F. Prefer not to say

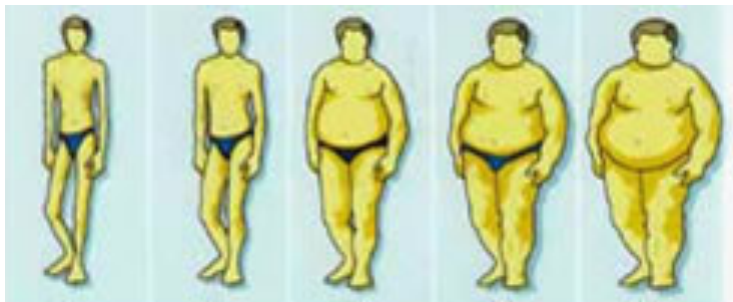
16. What is your current employment status?

- A. Working full time paid employment
- B. Working part time paid employment
- C. Working as unpaid volunteer
- D. Self-employed
- E. Unemployed
- F. Prefer not to say

17. What is your monthly income level?

- A. R0–R8 000
- B. R9 000–R25 000
- C. R26 000–R100 000
- D. R110 000–R500 000K
- E. > R500 000
- F. Prefer not to say

18. What is the ideal body image in your view? (Check on the image)



Pre-Questionnaire (Women)

Please choose the answer for the following questions based on your own condition.

19. What is your age? _____

20. What is your race?

21. Your height: _____ (Metres)
Weight: _____ (kg)

22. You consider yourself as:

- A. Severely underweight
- B. Underweight
- C. Normal (healthy weight)
- D. Overweight
- E. Moderately obese
- F. Severely obese
- G. Not sure

23. How often do you smoke:

- A. Never
- B. Occasionally
- C. Once a week
- D. A few times a week
- E. Daily
- F. Prefer not to say

24. How often do you drink alcohol:

- A. Never
- B. Occasionally
- C. Once a week
- D. A few times a week
- E. Daily
- F. Prefer not to say

25. How often have fast food:

- A. Never
- B. Occasionally
- C. Once a week
- D. A few times a week
- E. Daily
- F. Prefer not to say

26. What is the distance from your household to a nearby grocery store? (Mushi-Brunt, 2007)

- A. Less than a kilometre?

B. More than a kilometre?

27. Who does most of the housework in your family?

- A. Myself
- B. Other male family member(s) _____ (please specify)
- C. Other female family member(s) _____ (please specify)
- D. Maid(s)

28. Who cooks the food in your family?

- E. Myself
- F. Other male family member(s) _____ (please specify)
- G. Other female family member(s) _____ (please specify)
- H. Maid(s)

29. What appliances do you have in your household? (Check all that apply; Batnitzky, 2007)

- Running water Washing machine Laundry dryer Dishwasher vacuum cleaner
- Refrigerator Microwave Stove/Oven Air-conditioner Personal vehicle

30. How many hours do you spend on physical activity in a typical week? _____

31. How often do you visit the clinic/hospital:

- A. Never
- B. Once a month
- C. Once a week
- D. Daily
- E. Prefer not to say

32. What is your education level?

- A. Less than high school
- B. High school
- C. Technical/vocational training
- D. Associate degree
- E. Bachelor's degree
- F. Master's degree
- G. Doctorate degree
- H. Prefer not to say

33. What is your current marital status?

- A. Single
- B. Married

- C. Divorced
- D. Separated
- E. Widowed
- F. Prefer not to say

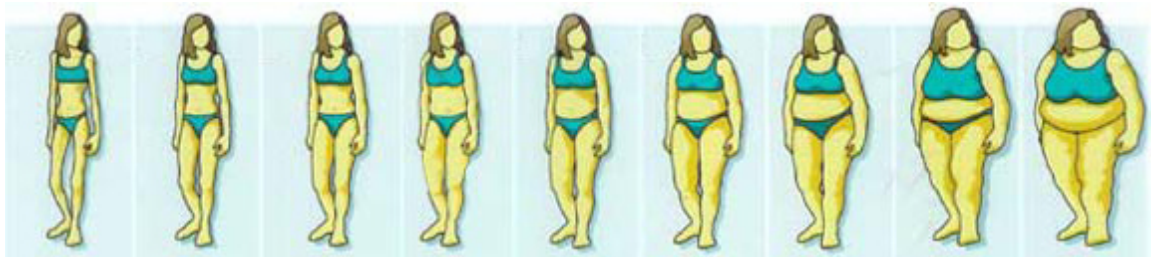
34. What is your current employment status?

- A. Working full time paid employment
- B. Working part time paid employment
- C. Working as unpaid volunteer
- D. Self-employed
- E. Unemployed
- F. Prefer not to say

35. What is your monthly income level?

- A. R0–R8 000
- B. R9 000–R25 000
- C. R26 000–R100 000
- D. R110 000–R500 000K
- E. > R500 000
- F. Prefer not to say

36. What is the ideal body image in your view? (Check on the image)



Pre-Questionnaire (Third Phase)

Please choose the answer for the following questions based on your own condition.

37. What is your age? _____
38. Your height: _____ (Metres)
Weight: _____ (kg)
39. You consider yourself as:
- A. Severely underweight
 - B. Underweight
 - C. Normal (healthy weight)
 - D. Overweight
 - E. Moderately obese
 - F. Severely obese
 - G. Not sure
40. How often do you smoke:
- A. Never
 - B. Occasionally
 - C. Once a week
 - D. A few times a week
 - E. Daily
 - F. Prefer not to say
41. How often do you drink alcohol:
- A. Never
 - B. Occasionally
 - C. Once a week
 - D. A few times a week
 - E. Daily
 - F. Prefer not to say
42. How often have fast food:
- A. Never
 - B. Occasionally
 - C. Once a week
 - D. A few times a week
 - E. Daily
 - F. Prefer not to say
43. What is the distance from your household to a nearby grocery store? (Mushi-Brunt, 2007)
- A. Less than a kilometre?
 - B. More than a kilometre?

44. Who does most of the shopping in your family?
- A. Myself
 - B. Other male family member(s) _____ (please specify)
 - C. Other female family member(s) _____ (please specify)
 - D. Maid(s)
45. Who cooks the food in your family?
- E. Myself
 - F. Other male family member(s) _____ (please specify)
 - G. Other female family member(s) _____ (please specify)
 - H. Maid(s)
46. What appliances do you have in your household? (Check all that apply; Batnitzky, 2007)
- Running water Washing machine Laundry dryer Dishwasher vacuum cleaner
 - Refrigerator Microwave Stove/Oven Air-conditioner Personal vehicle
47. Which of these foods do you eat? (Check all that apply)
- Apples
 - Bananas
 - Carrots
 - Sweet Potatoes
 - Onions
 - Tomatoes
 - Spinach
48. How often do you eat these foods in a typical week?
- A. Never
 - B. Once a week
 - C. A few times a week
 - D. Daily
 - E. Prefer not to say
49. Would you buy all seven of these food items if there was a special discount on them?
- A. Yes
 - B. Maybe
 - C. No

50. How often do you visit the clinic/hospital:

- A. Never
- B. Once a month
- C. Once a week
- D. Daily
- E. Prefer not to say

51. What is your education level?

- A. Less than high school
- B. High school
- C. Technical/vocational training
- D. Associate degree
- E. Bachelor's degree
- F. Master's degree
- G. Doctorate degree
- H. Prefer not to say

52. What is your current marital status?

- A. Single
- B. Married
- C. Divorced
- D. Separated
- E. Widowed
- F. Prefer not to say

53. What is your current employment status?

- A. Working full time paid employment
- B. Working part time paid employment
- C. Working as unpaid volunteer
- D. Self-employed
- E. Unemployed
- F. Prefer not to say

54. What is your monthly income level?

- A. R0–R8 000
- B. R9 000–R25 000
- C. R26 000–R100 000
- D. R110 000–R500 000K
- E. > R500 000
- F. Prefer not to say