The food service industry's contribution towards combating obesity

by

AKHONA MELANI

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Supervisor: Dr H Kesa

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DECLARATION

I, certify that the thesis submitted by me for the degree Master's in Tourism and Hospitality Management at the University of Johannesburg is my independent work and has not been submitted by me for another degree at another university.

AKHONA MELANI

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My favourite animal is the turtle. The reason is that in order for the turtle to move, it has to stick its neck out. There are going to be times in your life when you're going to have to stick your neck out. There will be challenges and instead of hiding in a shell, you have to go out and meet them. – Ruth Wertheimer

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ABSTRACT

The food service industry in South Africa and worldwide is faced with a two-edged trend. On one hand, the trend reflects a positive and consistent growth of the industry due to increase in out-of-home meal consumption while, on the other hand, the industry is faced with an increasing demand for healthy meal alternatives. At a global level, the food service industry faces challenges due the perceived poor diet quality said to be contributing to the prevalence of non-communicable diseases that are related to diet, particularly overweight and obesity.

As individuals continue to experience shortage of time to prepare meals from home, it is expected that they will rely on meals consumed out-of-home, which can affect their health and increase their chances of becoming overweight or obese. These are issues that the study intended to address. The main objective of the study was to explore and determine the measures that the food service industry has put in place to aid in combating obesity.

A quantitative approach was adopted, wherein self-administered questionnaires were distributed. The study found that there are indeed some efforts from the food service industry to assist in alleviating the incidences of obesity. The main findings revealed that respondents agreed with the notion that restaurant menus do offer meals that are healthy and contain minimum fat. It was found that there is an association between how the food service industry has adapted to consumer eating habits (demand for healthy meals) and availability of healthy meal options on the menu. This may be viewed as an effort towards alleviating obesity, because of the availability of healthy items on menus.

The findings of this research can assist the food service industry to be mindful of the need and demand for healthier meals, and the importance of incorporating such meals in menu offerings. There are also policy implications of relevant policies and laws that can encourage or incentivise the food service industry to ensure that public health concerns (prevalence of obesity) are considered by all restaurants. Finally, the study recommends that more effort be made to serve healthier meal items in restaurants.

Key words

obesity, food service, Out-of-Home eating, healthy meals, menus

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LIST OF ABBREVIATIONS AND ACRONYMS

BMI	Body Mass Index
BRICS	Brazil, Russia, India, China, South Africa
CATHSSETA Authority	Cultural, Arts, Tourism, Sports, Sector, Education and Training
CoJ	City of Johannesburg
cm	centimetres
α	Cronbach's alpha
df	Degrees of Freedom
et al.	and others
FBDG	Food Based Dietary Guidelines
GBD	Global burden of disease
GDP	Gross Domestic Product
HDP	Health Dining Programme
m^2	Square meters
M	Mean
n	frequency
NCDs	Non-Communicable Diseases
OH	Out-of-home
SADC	Southern African Development Community
SD	Standard Deviation
SIC	Standard Industrial Classification
SSA	Statistics South Africa
STH	School of Tourism and Hospitality
UJ	University of Johannesburg
UK	United Kingdom
USA	United States of America
USDA	United States Department of Agriculture
WHO	World Health Organisation
WTTC	World Travel Tourism Council
%	percentage
<	less than
>	greater than

LIST OF TERMINOLOGY

Food Service

The term "food service" is defined as the serviced supply of meals, accompanied by beverages, purchased out-of-home (OH), however, these may be consumed at the establishment or at home (Edwards & Overstreet, 2009:211).

Out-Of-Home (OH) Eating

The definition of OH eating, adopted from the European Commission project included all foods that were not prepared at home. Therefore, OH eating was defined as meals consumed outside of home, prepared by food service employees and meals prepared by food service employees and consumed at home (D'Addezio, Turrini, Capacci & Saba, 2014:9).

Overweight and Obesity

The World Health Organisation (WHO) defines obesity as the abnormal accumulation of body fat that presents a threat to one's health and wellbeing (WHO, 2016: online). Kumar and Kumar (2009:1031) define overweight and obesity as excess body fat caused by a disparity between energy/fat intake and to what extent the body uses it.

Body Mass Index (BMI)

Body Mass Index (BMI) is a simple index of weight-for-height that is commonly used to classify whether an individual is underweight, overweight or obese. The WHO (2016:online) defines BMI as the weight in kilograms divided by the square of the height in meters (m^2).

Diet quality

Diet quality is measured through scoring meals with reference to how closely they align with the national dietary guidelines and how varied the range of healthy food items is within the main food groups (Wirt & Collins, 2009:2473).

Menu Planning

Menu planning is the process by which menus are planned, wherein consideration of all aspects of a food service system are enumerated (Gordon-Davis & van Rensburg, 2004:235). One can assume that in this process aspects such as recreating menu items, inclusion of healthier meals, seasonal changes and so forth are considered.

CHAPTER 1

BACKGROUND AND OUTLINE OF THE STUDY

1.1   INTRODUCTION

This chapter provides the background to the study and presents the significant concepts that were explored throughout the study, namely food service industry, out-of-home (OH) eating, diet quality and obesity. The chapter presents the background to the study, the rationale of the study, the problem statement, the objectives and the significance of the study. The chapter concludes with an outline of the chapters to follow.

1.1.1   Background to the study

Tourism is known to be one of the fastest growing industries in the world. WTTC (2014:4) reports that in 2013 the tourism industry accounted for 9.5% to the world's economy. According to SSA (2013:7), despite the challenging global economic circumstances, the South African tourism industry managed to reach a record 9.6 million international tourist arrivals in 2013. Consequently, the total income generated by the food and beverages industry increased by 2,1% in November 2017 compared with November 2016 and the highest annual growth rates were recorded for 'other' income (17,9%) and bar sales (6,7%) in 2017 (SSA, 2017 Online). The sector's contribution to the gross domestic product (GDP) in South Africa has increased progressively from 8.1% in 2007 to 10.3% in 2013 and was expected to reach 12% in 2014 (WTTC, 2014:4). As such, it was publicised that the direct contribution of Travel and Tourism to GDP was ZAR127.9 billion, in 2016 and was forecasted to rise by 2.7% in 2017 (WTTC 2016:1). Meanwhile the total contribution of Travel & Tourism to GDP was ZAR402.2 billion, in 2016 and was forecasted to rise by 2.5% in 2017 (WTTC 2016:1).

The hospitality chamber at CATHSSETA covers 16 Standard Industrial Classification (SIC) codes, among a number of enterprises; hotels and restaurants are classified as one of the SIC codes within the hospitality industry which constitutes the South African Tourism Industry (Annacol, 2016: online).

Bevis (2012: online) states that there has been a general global trend over the past decades towards less meals prepared from home, this resulting from factors such as busier lifestyles, unconventional working hours and an increase in the number of

working women in households. The frequency of food consumed OH has risen among consumers almost everywhere (Boo, Chan & Fatimah, 2008:201) and this norm of OH eating has been observed among students and dual income earning homes as well.

Saelens, Glanz, Sallis and Frank (2007:273) suggest that the significant reliance on restaurants may potentially have negative nutritional and health consequences because individuals eating at restaurants usually have above average caloric and fat intake, and less fresh fruit, vegetable and fibre consumption. Monsivais, Aggarwal, and Drewnowski (2014:796) argue that home food preparation habits and confidence in cooking skills are associated with healthier dietary intakes. However, Robson, Crosby and Stark (2016:147) suggest that families are preparing less food at home and are spending more money on foods prepared OH. According to Robson *et al.* (2016:147), no standard definition exists for OH eating, however, foods prepared OH commonly refer to foods purchased at a restaurant, fast-food or any other takeaway establishment. Food and eating environments possibly contribute to the increasing obesity epidemic and other non-communicable diseases (NCDs) that are associated with diet (NEMS, 2015: online; Story, Kaphingst, Robinson-O'Brien & Glanz, 2008:253).

Kruger, Kruger and MacIntyre (2005b:351) suggest that modern lifestyles (inactivity, passive overeating, and sociocultural and economic influences) in an obesogenic environment cause an increased prevalence of obesity.

South Africa, like a number of countries worldwide, faces an emerging trend which may threaten the health of individuals and is a public health concern—the increased trend of OH eating. Modern day living and the concomitant characteristic of being extremely busy has led to people eating away from home more often than in the past (Choi & Rajagopal 2013:474) and South Africa has not been spared from this occurrence. Boo *et al.* (2008:201) suggest that the ongoing increase in OH eating is closely associated with several NCDs that are associated with dietary intake, such as cardiac diseases, diabetes mellitus, overweight and obesity and respiratory diseases. Because the diets of individuals have changed as families consume more meals away from home, Kirkpatrick, Reedy, Kahle, Harris, Ohri-Vachaspoati and Kerbs-Smith (2013:1) suggest that attention has been directed towards the influence of foods prepared OH, on consumption patterns. This applies particularly to foods that are prepared and consumed at restaurants. Kirkpatrick *et al.* (2013:2) continue and further state that

previous studies have examined aspects of nutritional quality of restaurant meals, such as dense energy and fat.

Overweight and obesity remain major public health issues as they increase the risk of morbidity and mortality from diabetes, cardiovascular diseases and NCDs associated with dietary intake (American Heart Association, 2013:144). Although these diseases are largely preventable through lifestyle modifications, including caloric intake, they are known to affect quality of life and contribute to burdening health care costs (Newson, van der Maas, Beijiersbergen, Carlson & Rosenbloom, 2015:63).

In developing countries undergoing health transition, a complex picture relating to nutritional status of the population is commonly found (Pouane, Steyn, Bradshow, Laubscher, Fourie, Lambert & Mbananga, 2002:1038). These researchers emphasise that obesity is becoming a major health issue in many developing counties (Pouane *et al.*, 2002:1038). Kruger, Pouane, Senekal and van der Merwe (2005a:491) aver that the nutrition transition in South Africa is due to globalization which has led to the increased trend towards OH eating and consequently resulted in the prevalence of obesity. The study revealed that the obesity epidemic among South Africans is a result of globalisation, which is said to be the reason behind the makeover of healthy deliberation of food (Kruger *et al.*, 2005a:491). The researchers added that in the past individuals used to consume traditional meals that were lower in kilojoules as well as saturated fat and on the contrary, rich in fibre, natural produce and water. In recent years, this has transitioned into consumption if foods that are higher in added fats and contain a high concentration of refined carbohydrates. Consequently, because of globalisation there is an increase risk amongst the urban dwellers, which causes a situation that endorses the consumption of foods that are higher in fat/kilojoules and added sugars.

The Compass Group Southern Africa's 2011 report indicates that South Africa was ranked third on the world's obesity rankings and was ranked first on the scale of developing countries (BRICS countries), namely Brazil, Russia, India, China and South Africa as well as on the continent (MyNews24, 2013: online). This means that there is a dire need for awareness and risk assessment and management of the obesity epidemic in South Africa and establishing a means of alleviating this epidemic.

On the contrary, using the WHO's definition of obesity, South Africa was ranked 30th out of 191 countries with 28.3% of its adults considered obese in 2016. When people

that are considered overweight are included, the share rises to 53.8% of adults. However, in this case, the country's global ranking drops to 103rd place (Africa Check, 2016: Online)

1.2   THE RESEARCH PROBLEM

Tripathy and Tripathy (2015:16) define a research problem as an account about a specific area of concern, an existing circumstance to be improved, a complexity to be eliminated or a troubling issue or question that exists in scholarly literature, theory or in practice. This section details the problem statement of this study.

1.2.1   Identify the research problem

The obesity epidemic in South Africa is due to globalisation, which is the predominant force in nutritional transition among South Africans (Kruger *et al.*, 2005a:491). These authors go further to state that additional freedom of movement among black people and exposure to the global market economy resulted in a shift from traditional foods (low in fat and sugar and high in fibre) towards rich hearty foods containing excess levels of saturated fats, added sugars and highly refined foods (Kruger *et al.,* 2005a: 491). In South Africa, similarly to other countries, "Big Food"—large commercial enterprises in the food and beverage environment—is rapidly increasing and is considered as unhealthy, unwholesome eating (Igumbor *et al.*, 2012:1). South Africa is no exception and has become a significant market for the "Big Food" industry (Kruger *et al.,* 2005a: 491).

1.2.2   Statement of the problem

The pace and busy nature of modern life has led to people eating away from home more often than they used to in the past (Choi & Rajagopal, 2013:474) and South Africa has not been spared from this phenomenon. Fitzgerald, Kannan, Sheldon and Eagle (2004:429) report that food that is consumed away from home is known to have a higher kilojoule/fat content as well as a higher salt content than food prepared at home. According to Edwards, Engström and Hartwell (2005:85), the food service industry has been condemned for the increase in overweight and obesity and other diet-related diseases. Boo *et al*. (2008:201) suggest that the increase in OH eating is closely linked to the increase of several dietary NCDs such as cardiovascular diseases, diabetes mellitus, overweight and obesity and various respiratory diseases.

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South Africa was ranked third in the world obesity ranking and ranked first on the scale of developing countries (MyNews24, 2013: online). This indicates that there is a dire need for awareness and risk assessment regarding the obesity epidemic in South Africa.

The Mayor of the City of Johannesburg (CoJ) realized the need to mitigate the prevalence of obesity in the city. To this end, he mandated that a Nutritional Pledge between the Department of Social Development at the CoJ and restaurants within the CoJ (that are willing to participate), be signed. The School of Tourism and Hospitality of the University of Johannesburg was approached to aid in assisting and to collaborate with the CoJ.

It is clear that the above problem statement is an area to be improved and is a troubling matter in practice, theory and literature.

1.3   RATIONALE OF THE STUDY

The study investigates a very controversial issue which faces society, an issue that is a public health concern regarding the increased trend towards OH eating and its association and contribution to the obesity epidemic in Johannesburg particularly, but also in South Africa as a whole. Because of this concern, the Executive Mayor of CoJ launched the GOJOZI initiative. The initiative is a weight loss challenge aimed at mobilising the communities of Johannesburg to take active measures for a lifestyle change that promotes healthier eating and healthier lifestyles. In addition, it was the Executive Mayor's mandate that a Nutrition Pledge be launched in Johannesburg in collaboration with restaurants in the city. CoJ then teamed up with various restaurants and fast-food outlets (that are willing to participate) to highlight healthier food options on their menus. This collaboration with the restaurants primarily aimed to incentive restaurant establishments within the city to offer healthier food and beverage options on their menus. The study became part of the bigger idea of the Nutrition Pledge. The literature reviewed guided the questionnaires and the assessment documents for restaurants that participated in the project. The Mayor advocates Johannesburg changing to become a 'healthy' city, and this project, into which this study feeds, is one of the initiatives being undertaken by the CoJ.

1.4   OBJECTIVES OF THE STUDY

The main objective of the study was to investigate what the food service industry in Johannesburg is doing to contribute towards combating obesity. To achieve the main

objective of the study, the following sub-objectives were formulated, which guided the research:

- The study aimed at examining the knowledge of food service employees (waitrons) on low-kilojoule and healthy balanced meals;

- To determine whether restaurant menus catered for health-conscious individuals and how effective the food service industry is in heeding consumers' healthy eating habits;

- To establish to what extent restaurant managers attempted to alter their menus to include healthy meals and determine the challenges they faced as they do this; and

- To analyse employees' (managers, waitrons) perceptions on how healthy meals benefit a restaurant's image in Johannesburg.

1.5 RESEARCH QUESTIONS

1.5.1 Main research question

What is the food service industry in Johannesburg doing to contribute towards combating obesity? To address the main research question the following secondary research questions were formulated:

- How knowledgeable are food service employees (waitrons) on healthy balanced meal options and low kilojoule meals?

- Does the manager consider the option of healthy balanced meals or low-kilojoule meals as a healthier option (as alternatives) during menu planning?

- Do restaurant menus cater for health conscious individuals and to what extent is the food service industry adapting to current trends of consumer eating habits?

- What are the perceptions of food service employees (managers, waitrons) on how healthy meals benefit the image of restaurants?

1.6 OUTLINE OF CHAPTERS

This thesis is structured in six chapters. Chapters are introduced to the reader by outlining how it is organised and concludes with a summary that recaps salient points made in the chapter.

Chapter 1: Background and introduction

Chapter 1 introduces the study by providing a background and context to the study. Significant concepts are explored, namely food service industry, out-of-home (OH)

eating, diet quality and obesity. The chapter explains the problem statement, the research objectives and research questions of the study, the rationale for the study and the benefits of the study.

Chapter 2: **Literature review**

This chapter offers insight into the concepts which guide the theoretical framework of the study and key definitions and illustrations of these various concepts are stated. These concepts include healthy eating, the need for healthy OH eating, the food service industry's efforts to include healthy balanced meals in the menus of restaurants, overweight and obesity and other NCDs that are directly linked to diet and poor diet in OH eating establishments.

Chapter 3: Research methodology

This chapter discusses the research methodology and techniques employed for this study, including the objectives, the research instrument, the population and sampling, data sources, data analysis, and research ethics.

Chapter 4: **Results**

Key data is summarised and presented graphically in the form of tables and graphs. This visual format allows for easy interpretation by the end-user. The research findings are explained, as well as their implications in terms of the research objectives. The chapter concludes by describing the value of the Cronbach's alpha test in determining the reliability of the results as presented in the discussion of statistical methods of analysis.

Chapter 5: **Discussion of main findings**

Chapter 5 discusses the main findings of the study. The chapter starts by presenting the demographic profiles of the respondents. Following is an interpretation of the results from the mean (M) and standard deviations (SD) regarding the availability of healthy menu items, knowledge and training pertaining to healthy menu items, challenges related to the incorporation of healthy menu items and the perceived image of restaurants that offer healthy menu items. An explanation is given of the findings from the Chi-square tests on the various constructs contained in the study. Finally, the chapter concludes by discussing how effective the food service industry is in adapting to consumer eating out habits.

Chapter 6: **Conclusion, recommendations and limitations**

This chapter revisits the research objectives to indicate how each was achieved and summarises the main findings of the study. Based on these findings, recommendations are made and opportunities for future research are suggested. The chapter concludes with an evaluation of the study in terms of limitations and contributions to the food service industry.

1.7   SUMMARY

This introductory chapter provided a background to the food service industry's efforts to combat the obesity epidemic. The reader was informed about the rationale of the study, the research problem, research objectives, questions and the significance of the study.

CHAPTER 2
LITERATURE REVIEW

2.1   INTRODUCTION

This chapter reviews existing literature pertinent to the study, namely the food service industry, OH eating, diet quality of food that is consumed OH and the correlation between OH eating and overweight and obesity, and other diet-related NCDs. The chapter also explores the food service industry's role in alleviating the prevalence of overweight and obesity.

2.2   THE FOOD SERVICE INDUSTRY

To simplify what is understood by the term "food service", it is vital to note that the term can be spelt differently, "food service" in the United Kingdom (UK) and "foodservice" in the United States of America (USA) (Edwards, 2013:223). It is acceptable for these terms to be used interchangeably with only a difference in spelling, however, the context in which the terms are used are the same. Edwards and Causa (2009:1) report that in the USA the two words were combined to eradicate any misperception and to emphasise that the term involves more than the service of food, hence the food service industry. For the purposes of this study, the term "food service " is defined as the serviced supply of meals accompanied by beverages purchased OH but may be consumed at the establishment or at home (Edwards & Overstreet, 2009:1).

In the context of this study, food service specifically focused on food purchased and consumed OH, as the study seeks to describe elements related to onsite consumption of meals and proper service thereof.

2.2.1   Segments of the food service industry

The food service industry can be categorised in a number of ways, one of which is to divide the industry into two segments as illustrated in Figure 2.1. The profit, private or commercial segment comprises various types of restaurants, coffee shops, bistros, cafés, and fast-food outlets (Edwards, 2013:223). The food service industry is documented as one of the fastest growing industries in South Africa and the cumulative income generated by the industry increased by 5.4% in September 2014 versus September 2013 (SSA, 2014:3). According to SSA (2013:3), the cumulative income generated by the food service industry increased by 5.2% in October 2013 compared to October 2013. According to these statistics, it is evident that the industry continues

to show positive income growth. Moolman (2011:131) suggests that the growth of the industry in recent years could be ascribed primarily to a change in the current way of life of individuals.

Profit, private commercial segment

Hotels
Restaurants
Fast food outlets
Take-outs
Bars/clubs

FOOD SERVICE SEGMENTS

Cost, public institutional segment

Hospitals
Healthcare
Employee feeding
Prisons
Armed forces
Public sector
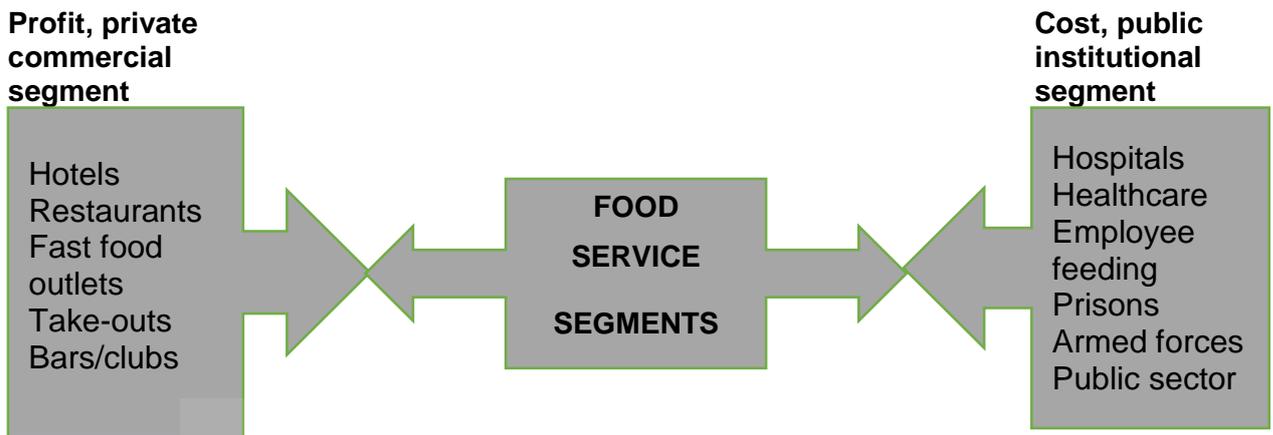
Figure 2.1: A possible categorisation of segments in the food service industry
Source: Edwards (2013:224)

The second food service segment is the cost, public or institutional segment (Edwards, 2013:224), which comprises hospitals, schools, prisons and employee feeding to name a few. The significance of this sector is often unheeded, owing to the fact that it is considered less desirable (Edwards, 2013:224).

Because the study aims to describe attributes of the profit, private commercial segment of the food service industry, only this segment will be focused on in terms of OH eating.

2.3 THE CONCEPT OF OUT-OF-HOME (OH) EATING

Over the past decades OH eating has gained significance in diets worldwide (Lachat, Nago, Verstraeten, Roberfroid, van Camp & Kolsteren, 2012:329). Trichopoulou, Naska, and Orfanos (2009:66) report that OH eating is no longer just for special occasions but has become a common way of life. Trichopoulou *et al.* (2009:66) further suggest that the contemporary way of life has caused people to eat out more and enjoy fewer meals prepared at home. This can be attributed to the fact that today's fast-paced lifestyle sees consumers with less free time and they opt to eat out rather than spending precious free time cooking at home (Moolman, 2011:131).

It is important to note that defining and describing OH eating is not simple. D'Addezio *et al.* (2014:9) acknowledge that a strict definition of OH eating does not exist. Warde and Martens (2000:526) suggest that OH eating can be described as enjoying a meal in a public dining establishment in the presence of others.

Bezerra, Curioni and Sichieri (2012:66) suggest that existing literature does not contain a common definition for the concept of OH eating. These authors report that some studies define OH eating as the consumption of meals prepared and purchased away from home, irrespective of the place of consumption. However, other studies define OH eating as the consumption of meals out-of-home, irrespective of the outlet of purchase (Bezerra *et al.*, 2012:66). According to Lachat *et al.* (2012:330), OH eating can be defined by the place of consumption or the place of food preparation. Bezerra and Sichieri (2009:2037) aver that OH eating is the purchase of at least one item of food or beverage, regardless of whether the food and beverage is consumed OH or taken home for consumption.

The definition of OH eating, adopted from the European Commission project, includes all foods that are not prepared at home. Hence, OH eating was defined as meals prepared by food service employees and consumed outside of home, and meals prepared by food service employees and consumed at home (D'Addezio *et al.*, 2014:9). Robson *et al.* (2016:147) argue that there is no standard documented definition that exists, but food prepared OH commonly refers to foods purchased at a restaurant, fast-food outlet or take-out establishment, regardless of the place of consumption.

2.3.1 Growth of OH eating

The significance of OH eating has been documented as one of the major shifts in lifestyles that took place during the last decade (Lachat *et al.*, 2012:329). D'Addezio *et al.* (2014:9) opine that OH eating and the consumption of ready-prepared meals have increased significantly during recent years in developed countries because of social, cultural and environmental changes. According to Bevis (2012: online), there has been a global trend towards less home-prepared meals due to increasingly busy lifestyles, unconventional working hours and an increase in the number of working women in households.

Moolman (2011:131) states that as consumers continually experience scarcity of time, it is expected that they will not spend their time preparing a home cooked meal, but rather they will consume a meal prepared OH. The scarcity of time has caused a tendency to consume meals prepared OH (Andaleeb & Conway, 2006:3). Choi and Rajagopal (2013:474) believe that as people's lives get busier, it is expected that the number of persons who consume food prepared OH will also continue to increase.

The frequency of consumption of OH food is rising among consumers almost everywhere (Boo *et al*., 2008:201) and OH eating has been observed among students and dual income earning homes. Families are preparing fewer meals at home and spending more on foods prepared OH by food service establishments (Robson *et al*., 2016:147). Edwards *et al*. (2005:85) report that the food service industry has facilitated the increase of OH eating by business tactics to attract consumers by making OH meals affordable, accessible and acceptable through super-sizing, product bundling and "eat as much as you like" buffets.

Statistics and recent studies have documented the growing significance of establishments providing foods and beverages (D'Addezio *et al*., 2014:9). Expenditure on the consumption of OH eating has risen not only in developed countries but also in developing countries (Bezerra *et al*., 2012:65). Bezerra and Sichieri (2009:2037) report that the level of spend on OH eating is on the increase in the USA and rose from 26% of total food expenditure during the 1970s, to 39% in 1996 and reached 42% in 2002. According to Hwang and Cranage (2010:68), the ratio of OH eating to total food dollars was 48.5%, in 2004 and 48.9% in 2016. Hwang and Cranage (2010:69) further state that as household disposable incomes increase, time for preparing a home cooked meal becomes more limited and thus OH eating becomes affordable and easily accessible.

Figure 2.2 below illustrates the expenditure for food consumed OH in the United States from 2000 to 2010. The expenditure increased from nearly $400 billion in 2000 to nearly $580 billion in 2010. The figure depicts the rigorous growth of the food service industry and refers to the private, profit and commercial segment of the Industry.
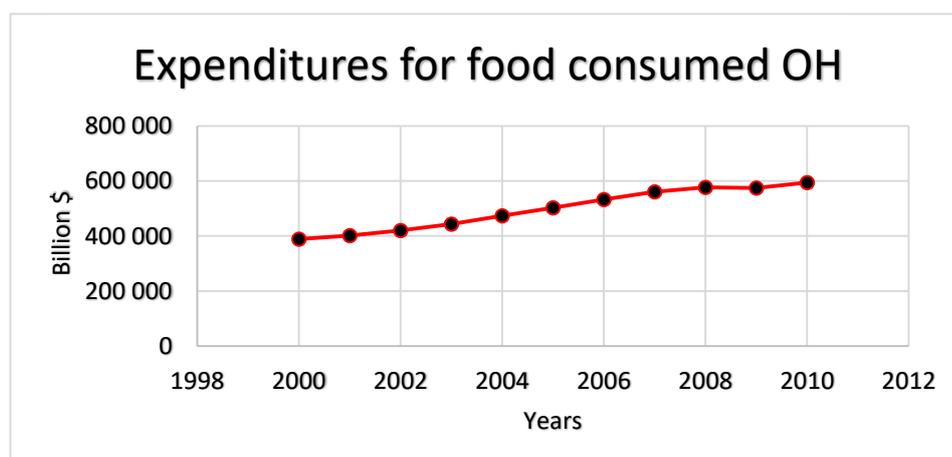
Figure 2.2: **Expenditure on food consumed OH from 2000 to 2012**
Source: USDA (2015: online)

The food service industry is a key contributor to the economy in the USA and in 2010 American consumers spent nearly $580 billion on purchasing food OH (National Restaurant Association, 2010: online). Furthermore, the National Restaurant Association (2014: online) report that the restaurant industry forecast indicates that restaurant and food service sales are projected to total $683.4 billion in 2014, up 3.6% from 2013's sales volume of $659.3 billion.

Figure 2.3 below depicts sales percentages of the OH market according to outlet type—full service, fast food outlets and all other. According to USDA (2015: online), full service and fast food restaurants are the two largest elements of the profit, private, commercial food segment and these accounted for approximately 77% of all food consumed OH sales in 2010. The research observed that throughout the years, full service restaurants and the fast food outlets continuously jockey for revenue, however, as time progresses the growth of fast food outlets is rapidly catching up to that of full service restaurants.
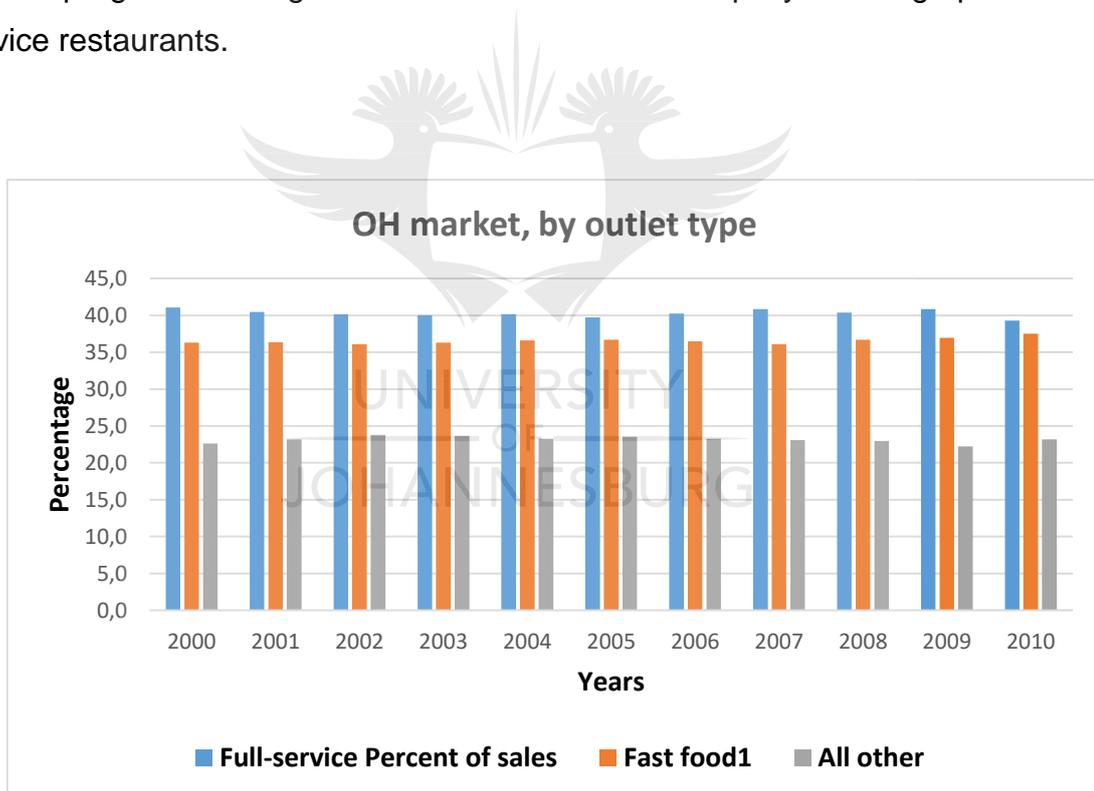
Figure 2.3: **OH market by outlet type**

Source: United States Department of Agriculture, USDA (2015: online)

2.3.2 The South African perspective on OH eating

Consumption of OH food is increasing rapidly in developing countries. This phenomenon may stem from a matter of convenience or simply a pleasurable activity. Whatever the reason may be, it is documented that urbanites spend a substantial

amount of their food budget on meals consumed OH (Delisle, 1990: online). OH eating represents an increasing share of food consumption around the world, caused by various factors including increasing urbanization, increased number of females in the workplace, participation and evolving food systems that make made food availability easier (Vakis, Genoni & Farfan, 2015: online). South Africa has not been spared from this occurrence. IOL (2014: online) reports that in October 2014 consumer spend on OH food and beverages was R3.95 billion.

The South African consumer food service industry experienced growth over 2003/2004. The number of establishments increased by 8% while value sales increased by 17% and reached R23.3 billion in 2004 (Consumer Foodservice in South Africa, 2005: online). The modernisation of the South African economy, which has led to the changes in OH eating habits and food trends, boosted the restaurant industry which increased by 47% (Consumer Foodservice in South Africa, 2005: online). Researchers suggest that with the increasing number of women in the workplace and busier lifestyles of individuals, the convenience that restaurants offer is a significant factor in modern day living. Although it may be argued that there is an issue of poverty, inflation and unemployment in South Africa, Holmes (2016: online) states the increase in women in the workforce has resulted in "double-income" homes and therefore more disposable cash available. He continues, stating that an increasing number of women are entering the workforce and this has led to the traditional cook having limited time to prepare food at home.

According to SSA (2013:3), the year-on-year percentage on total income generated by the food and beverages industry yielded a growth percentage of 5.2% in October 2013 when compared with October 2012. Mhlanga (2015:18) reports that despite the harsh global economic circumstances, the South African tourism sector managed to reach its highest goal yet—9.6 million international tourists in 2013.

2.4 DIET QUALITY OF MEALS CONSUMED OUT-OF-HOME (OH)

2.4.1 Diet quality

Diet quality is measured through scoring meals with reference to how closely they align with the national dietary guidelines and how varied the ranges of healthy food items are within the main food groups (Wirt & Collins, 2009:2473).

In South Africa, diet quality is measured through the use of the Food-Based Dietary Guidelines (FBDG). This food pattern is rich in fresh produce, fibre, is low in saturated

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fats, is associated with good health and low risk of NCDs (Vorster, Badham & Venter, 2013:5). The FBDG are a set of guidelines that are written to mobilise a population towards improved health through diet and nutrition (Gordon-Davis & van Rensburg 2004:197). FBDGs are concise, helpful dietary recommendations used to advise consumers on how to make healthy meal choices, which will lead to a diet that is satisfactory to nutrient needs and lowers the risk of NCDs (Vorster *et al.*, 2013:5). FBDGs are built on the significant confirmation on the relationship between the type of food consumed and one's health. They are also unique to each country and are subjected to the dominant eating choices and public health concerns within a country (Vorster *et al.*, 2013:5).

The dietary guideline is mostly preserved when meals are prepared at home. This is affirmed by Bes-Rastrollo, Basterra-Gortari, Sanchez-Villegas, Marti, Martínez and Martínez-González (2010:1356) who state that the nutritional or diet quality of foods consumed OH is considerably poorer than meals prepared at home.

2.4.2   Meals consumed out-of-home (OH)

As previously mentioned, over the past decades OH eating has gained significant importance in diets worldwide (Lachat *et al.*, 2012:331). However, Fitzgerald *et al.* (2004:429) and Kant, Whitley and Graubard (2015:820), argue that food that is consumed OH is known to be of poorer diet quality as meals are higher in total fats (saturated), and sodium. Glanz, Resnicow, Seymour, Hoy, Stewart, Lyons and Goldberg (2007:383) state that OH eating is associated with increased consumption of calories, fat, saturated fat, added sugars and sodium and contains less calcium, fibre and vitamins. Several dietary influences related to restaurants may cause excessive weight gain such as meals that are very dense, poor portion control, high content of saturated and trans fat, high glycaemic load and on the contrary, very low amounts of fibre (Bowman, Gortmaker, Ebbeling, Pereira & Ludwig, 2004:112). Newson *et al.* (2015:63) opine that foods consumed in restaurants have a substantial effect on caloric ingestion and ultimately on weight gain, therefore an additional meal consumed OH may contribute an average of 134 calories that day compared to the same meal prepared at home. Due to excessive portion sizes of energy-dense meals severed in restaurants, it is hypothesised that OH eating may lead to increased excess weight and therefore may be contributing to the current obesity crisis (Bes-Rastrollo *et al.*, 2010:1356).

Lachat *et al*. (2012:332) report that a number of researchers are concerned that the food service industry offers larger portion sizes, high density energy meals, meals which lack nutritional value and meals which are not healthy and balanced—all of which contribute to the overweight and obesity problem.

Subsequently the prevalence of obesity in the United States has increased significantly over the same period as that of the increased OH eating (Glanz *et al.,* 2007:383). Boo *et al.* (2008:201) suggest that the increase of OH eating is closely associated with several NCDs linked to diet such as cardiovascular diseases, diabetes mellitus, overweight and obesity, and respiratory diseases. Furthermore, these researchers believe that the endorsement of weight-loss programmes is increasing, the number of health and wellness clubs is growing, as is the sale of health supplements (Boo *et al*., 2008:201).

Gregory, McTyre and DiPietro (2006:43) report that an article appeared in the National Restaurant News in the United States in 2002, investigating whether restaurants should be held accountable for tracking people's diets. This article highlighted the fact that people are becoming increasingly conscious of their health and health care costs.

According to Lobato, Costa and Sichieri (2009:2209), that there is a strong association between restaurant food and body fat and that frequency of consumption of OH eating was positively linked to body fatness. Bezerra and Sichieri (2009:2037) opine that the high density and fat content of food consumed OH is a valid explanation for OH eating being considered a risk factor for obesity.

Gregory *et al*. (2006:43) state that arguments occur between patrons and food service personnel on the question of the accountability of restaurants to offer healthy substitutes for health conscious consumers.

The study revealed that there is a significant change in consumer eating out habits and show a notable move from consuming fatty fast foods to meals that are healthier and lower in fat. This clearly indicates an increasing demand for healthier alternatives. Glanz *et al.* (2007:383) report that individuals need assistance in making healthy meal choices to maintain a healthy, balanced diet, not only when eating but also when preparing food at home.

2.5 OVERWEIGHT AND OBESITY

2.5.1 Overweight and obesity defined

WHO defines obesity as the abnormal accumulation of body fat that presents a threat to one's health and wellbeing (WHO, 2016: online). Kumar and Kumar (2009:1031) define overweight and obesity as excess body fat caused by a disparity between energy/fat intake and to what extent the body uses it. According to Singh (2007b:399), BMI is the most commonly used measure for assessment of nutritional status.

Obesity is recognised by the change in metabolic function that results from an increase in complete body weight as well as a build-up of abdominal fat tissue (van der Merwe & Pepper, 2006:315). According to WHO (2016: online), the most recent definition for overweight and obesity is the abnormal or excessive fat build-up that may impose a risk to one's health. It is determined by a body index called BMI, which is a simple index of weight-for-height that is commonly used to classify overweight and obesity in adults. It is defined as a person's weight in kilograms divided by the square of his height in meters (kg/m^2).

Overweight and obesity are characterised as an epidemic and are associated with other NCDs that are linked to poor diet quality and result in high death rates. It is a severe health problem throughout the world with the number of cases having tripled in the last two decades and are at epidemic levels in the United States rates (Malnick & Knobler, 2006:565-579).

2.5.2 Body Mass Index (BMI)

BMI is an index that measures weight-for-height and is generally used to categorise whether an individual is underweight, overweight or obese. WHO (2016: online) defines BMI as the weight in kilograms divided by the square of the height in meters (m^2). A BMI of between 25 and 29.9 indicates overweight, a BMI of 30.0 to 39.9 reflects obesity, while a BMI of 40.0 and above indicates extreme obesity. A measurement of the waist as a meter of excess intra-abdominal fat, which can also be referred to as central obesity, is performed by detecting the point halfway between the crest of the hip and the lowest rib at the side, passing the tape measure around the waist parallel to the floor, during expiration with a relaxed abdomen (WHO, 2016:online). A healthy stomach measurement should be below 94 centimetres (cm) for men and 80 centimetres (cm) for women. A large waist circumference increases the risk of disease and has a detrimental effect on general

wellbeing (WHO, 2016: online). NHI (2010: online) defines BMI as a meter used by health practitioners to determine whether an individual is overweight or obese by dividing their weight in kilograms (kg) by the square of their height in meters (m²). BMI has been associated with the increased risk of early mortality in both men and women and that for every five unit increase in BMI, the risk of death increases by 31%.

2.5.3 The global view on obesity

Previous studies report that a surgeon general from the United States proclaimed that obesity was a prominent cause of avoidable deaths worldwide (Gregory *et al.*, 2006:44).

The WHO has documented obesity as one of the fastest growing NCDs affecting society (WHO, 2016: online) and the disease is reaching epidemic stages. It is clear that South Africa is not precluded from the disease (Van der Merwe & Pepper 2006:315). Ecological studies in the United States have discovered a significant link between the intake of refined carbohydrates and the prevalence of NCDs related to diet such as Type 2 diabetes and obesity and null link between fibre intake. Empirical data from 20 countries show a positive link between overweight and obesity and the consumption of energy in the form of kilojoules (Lobato, Costa & Sicheri, 2009:2209).

Figure 2.4 below depicts overweight and obesity levels among men in the United States. The figure shows that an alarming 38% of men were overweight, while 28% were obese. It can be deduced that 66% of the male population of the United States were overweight/obese while a mere 27% were of a desirable weight and 7% were underweight.
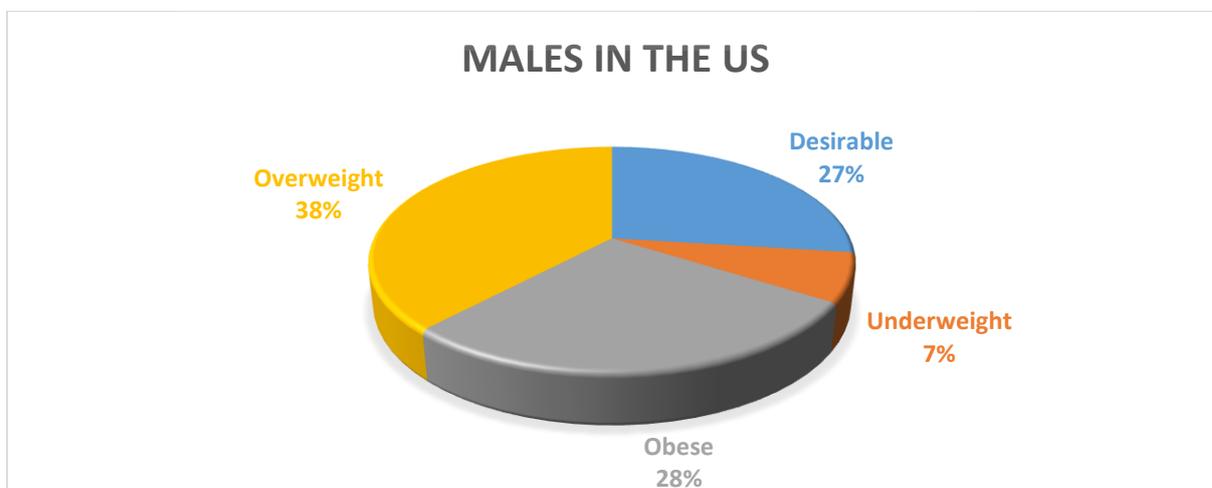
Figure 2.4: Weight levels of males in the US
Source: Edwards *et al.* (2005:86)

Figure 2.5 below illustrates an outline of weight levels among women in the United States. The figure shows that 33% of women were overweight and a further 33% were obese, equating to 66% of the female population in the United States being overweight/obese while only 28% were of a desired and 6% were underweight
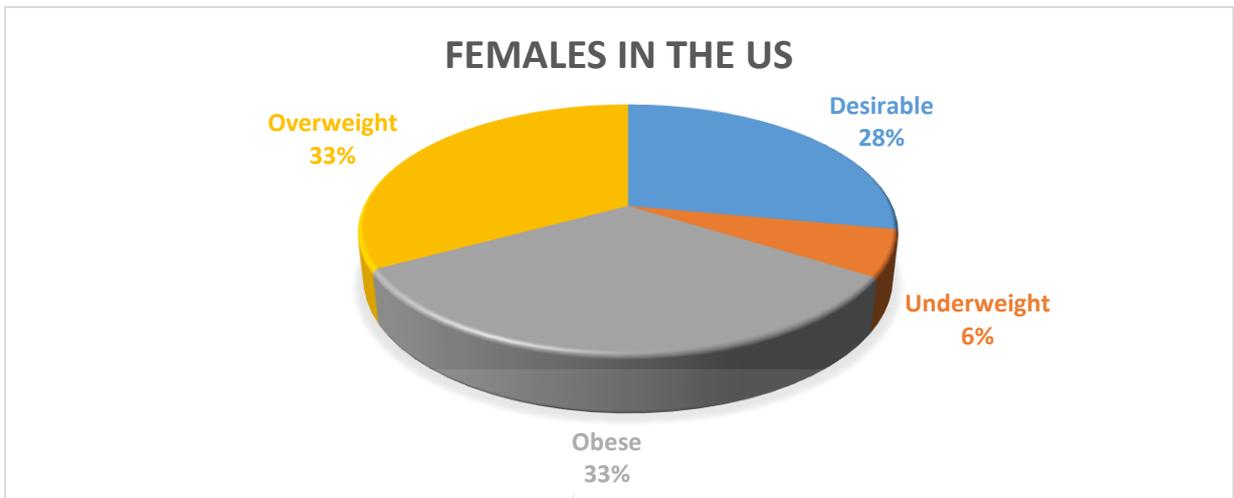
Figure 2.5: Weight levels of females in the US
Source: Edwards *et al.* (2005:85)

Referring to both Figure 2.4 and Figure 2.5 above, 33% of females and 38% of males are overweight, while 33% of females and 28% of males are classified as obese (Edwards *et al.,* 2005:85).

2.5.4   Obesity in developing countries

The BRICS countries (Brazil, Russia, India, China and South Africa) are developing at a faster pace than readily industrialised and developed countries (Gomes, 2013:238). These countries showed incredible opportunities for economic growth during the 1990s and South Africa claimed the addition of the "S" in 2010, to complete the acronym (Bornmann, Wagner & Leydesdorff, 2014:3). Gomes (2013:238) reports that the infrastructure in BRICS countries has improved markedly in more recent years but that these countries have not as yet developed modern healthcare systems as seen in the G7 industrialized countries and there are extensive regional differences in healthcare expenditure.

According to Kruger *et al.* (2005a:491), over 1 billion adults worldwide are overweight, of which at least 300 million are obese. These authors argue that countries experiencing economic evolution, from underdeveloped to developed, are affected and have observed an increased growth in obesity. The devastating health results of

obesity are increased illness and death, with significantly increased healthcare costs (Kruger *et al.,* 2005a:491). Wells (2012:61) NCDs used to be considered a burden in Western industrialised countries and not a burden for BRICS countries. Studies conducted within the past decade reveal that these diseases have radically transformed in the following three ways: firstly, the majority of individuals suffering from NCDs are not from Westernised countries but from BRICS countries; secondly, these diseases are associated with various developments and lastly, the process of urbanisation, industrialisation and infrastructure development. Popkin, Adair and Ng (2012:3) posit that people started to change their diets during the 1970s, where they increased reliance on convenience foods and OH eating, and significant consumption of fats and sugar-sweetened beverages. However, during the early 1990s, these changes became noticeable in developing countries but were not clearly recognised until NCDs became an issue (Popkin *et al.*, 2012:3). Urban and some rural areas in the SADC (Southern African Development Community) countries have experienced rapid increases in overweight and obesity status from that period.

Figure 2.6 below illustrates four of the BRICS countries (China, Russia, India and South Africa) percentage of population in four BMI categories, namely normal BMI, underweight BMI, overweight BMI and obese BMI. According to Figure 2.6, South Africa held the highest ranking of obesity at 35% of the population being obese, while 27% of the population were overweight. This means that 62% or the South African population are either overweight or obese. Russia is ranked second on the graph with 22% of the population being obese while 36% are overweight. Shukla, Kumar and Singh (2014: online) state that the prevalence of obesity ranks from below 5% in China and India, to over 35% in South Africa. This confirms what the Compass Group Southern Africa 2011 reports, that South Africa is ranked third in the world obesity ranking and is ranked first on the scale of developing countries, BRICS countries (MyNews24, 2013: online). According to Shukla *et al.* (2014: online), overweight and obesity are associated with increasing age in females, changing lifestyles, low physical activity and high intake of fats. However, the indication on the association between the mentioned factors and obesity in BRICS countries predominantly originates from small-scale studies. Hence, it is deemed necessary that such studies be conducted in BRICS countries.
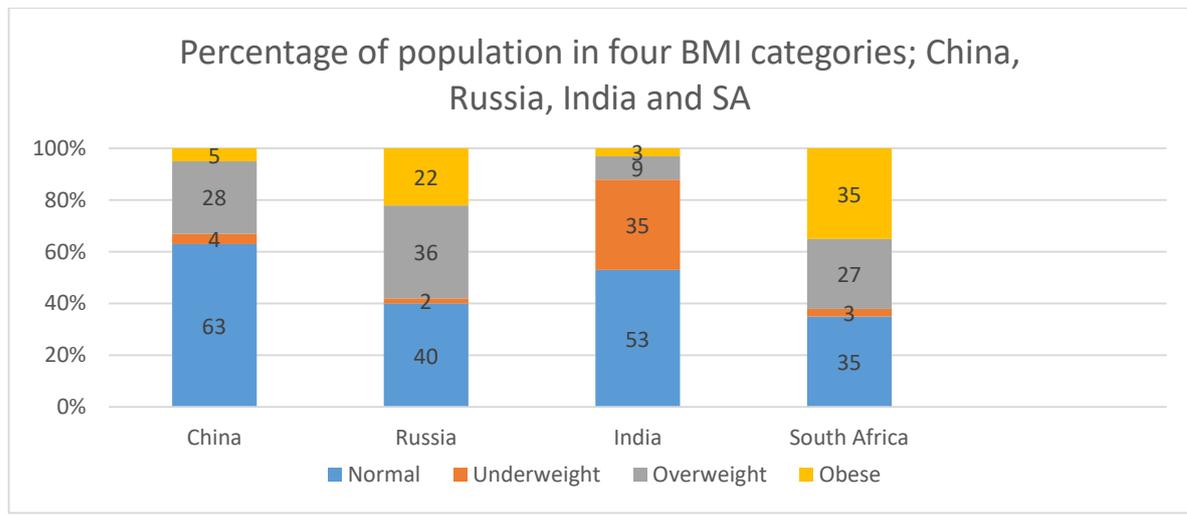
Figure 2.6: **Comparing the prevalence of obesity across BRICS countries**
Source: Shukla *et al.* (2014:1)

Sichieri, do Nascimento and Countinho (2007:1721), in investigating the burden of hospitalization associated with overweight and obesity in Brazil, revealed that overweight prevalence was estimated at 30% in both males and females, while obesity amongst females was double (13%) that of males (7%).

Lobato *et al.* (2009:2209) examined the relationship between the consumption of refined carbohydrates and trans fats, and the prevalence of obesity in Brazil. The authors report that the increased consumption of refined carbohydrates and fatty foods has an impact on the increasing prevalence of obesity. They state that even though obesity is related to genetic metabolic, behavioural and environmental influences, the significant increase suggests that behavioural and environmental influences, rather than genetic influences, are the dominant cause of the rapid increase of obesity. Igumbor *et al.* (2012:1) and Lobato *et al.* (2009:2209) agree that the food market has dramatically changed the composition of diet, with a significant increase in fatty foods, high consumption of refined carbohydrates, larger portion sizes and how affordability, accessibility and the availability of these foods has been facilitated. On the contrary, there is a dramatic decrease in total cereal, fruit and vegetables as well as fibre intake.

Bezerra and Sichieri (2009:2037) investigated the relationship between OH eating and overweight and obesity in Brazil. Findings revealed that the total weighted frequency of OH eating was 40.3%. Inclusively, OH eating was definitely linked with overweight and obesity among men but was found to be negatively associated with overweight and obesity among women. They further reported that sit-down meals and soft drinks were the most popular amongst the food groups.

The Russian Federation (Russia) is large, diverse and has an abundance of resources with a well recognised rapidly changing food environment (Jahns, Baturin & Popkin 2003:1295). Russia is one of the transition (developing) counties facing the most severe obesity and general health issues (Huffman & Rizov, 2007:380). These authors report that obesity increased during the transition from 20.3% of the Russian population in 1994 to 28% in 2004, which is a 38% increase. Huffman and Rizov (2010:574) go further to report that according to the WHO in 2006, the evolving and developing economies (Russia is not spared), were reported to have encountered the highest incidence of diabetes, obesity and other diet-related NCDs in 1995. Researchers believe that an enlightened understanding of the prevalence of obesity and its causes in developing economies may potentially lead to important policy recommendations to assist in alleviating the health risks of the population. The development of obesity is reliant on diet and lifestyle but this has been changing because of economic and nutritional changes.

Wells (2012:61) states that unpublished literature from India reveals a significant secular trend in childhood development, with an increase in childhood obesity. The trend towards obesity aggravates the physiological costs incurred by individuals, expressed in the rocketing prevalence of Type 2 diabetes and cardiovascular diseases.

2.5.5   The South African perspective

Kruger *et al.* (2005a:492-493) suggest that the obesity epidemic among South Africans is because of globalisation, which is the reason behind the change of nutritional consideration of food. These authors conclude that in the past individuals would consume their traditional food that was lower in fat and rich in fibre but this has now transitioned into consuming meats and dairy products which are high in saturated fats, and more highly refined foods.

Lachat *et al.* (2012:332) state that environmental transitions and change in personal lifestyle are dominant contributing factors in the global increase of overweight and obesity. According to Kruger *et al.* (2005a:493), feeble associations between nutritive energy, fat consumptions and BMI of South Africans have been documented, however, a high fat consumption is alleged to have a hand in the increasing the rate of overweight and obesity among South Africans.

Muzigaba, Puoane and Sanders (2016:36) believe that South Africa, like many other countries worldwide, has also been affected by globalisation and the associated

changes in food systems. South Africans are gradually altering their eating patterns from the old-fashioned high fibre, carbohydrate consumption to diet categorised by high consumption of saturated fats, sugars and refined carbohydrates (Steyn *et al.*, 2001:141). In South Africa micronutrient insufficiencies are still extremely predominant and energy intakes vary; the most commonly scarce food groups observed are fruit and vegetables, and dairy (Mchiza, Steyn, Hill, Kruger, Schönfeldt, Nel & Wentzel-Viljoen, 2015:8227). According to Schönfeldt, Pretorius and Hall (2017: online) the changes in South Africans' eating patterns include an increased consumption of foods that are high fats, less plant based fats and proteins as well as vegetables, and more energy-dense, micronutrient-poor snack foods, convenience foods, vegetable oils, and sweetened products and beverages. Countries in economic transition and development are predominantly affected by a dramatic increase in obesity and South Africa is no exception (Kruger *et al.,* 2005a:491).

Previous studies reveal that the global increase in obesity is poorly in terms of diet and physical activity behaviours. In addition, advice like "eat less and be more active" does not consider the intricate impacts of the social and built environments on individuals' access to affordable, healthy food and activity environments (Glanz, Sallis, Salens & Frank 2005:330). In recent years a significant increase in the prevalence of overweight and obesity has been observed in South Africa, particularly among women but also among children, predominantly girls (van der Merwe & Pepper, 2006:315). Obesity and other NCDs related to diet such as Type 2 diabetes and cardiovascular diseases, which were in the past thought to be a problem in more affluent economies, are now becoming progressively prevalent among all population groups in South Africa (Kruger *et al.,* 2005a:491).

Igumbor *et al.* (2012:6) state that there is a dire need to alleviate the health implications of the transitioned food environment in South Africa. They believe that it is important to conglomerate quicker efforts to public more aware and knowledgeable about the consequences of consuming exuberant amounts of fatty foods and generally unhealthy foods. In addition, they suggest that the South African government develops a strategy to make healthier foods—fruits, vegetables, whole grains and a variety of wholesome foods—more affordable, accessible and acceptable. Van der Merwe and Pepper (2006:315) report that the prevalence of obesity among black women may have been spurred by the misconception that increased body mass is a token of wellbeing and happiness and it signified a husband's capacity to provide for his family; and that

children who are overweight portray good health. The media (TV, newspapers/magazines and radio) remain the most dominant source of nutrition information/knowledge for urban black South African women. Van der Merwe *et al.* (2006:315) suggest that this is an important avenue for the delivery of information on overweight and obesity and nutrition and these media avenues should be utilized by health professionals to rectify the unhealthy status quo. Kruger *et al.* (2005a:493) evaluated dietary practices in South Africa and the research reported a weak association between dietary energy, fat intakes and the BMI of South Africans. However, it was discovered that food consumed by urbanites indicate a high caloric intake, thus contributing to the increasing prevalence of obesity among South Africans.

In South Africa, similarly to other nation states, "Big Food" (large commercial enterprises that the food and beverage environment consists of) is rapidly increasing and is perceived as unhealthy/unwholesome eating (Igumbor *et al.,* 2012:1). These enterprises have established working strategies to lure consumers by increasing availability, affordability and accessibility of their products in the country. It was reported that they have also implemented "health and wellness" initiatives but it is unclear whether these initiatives have shown successful or negative results and therefore the effectiveness of the initiatives cannot be measured. The authors continue and stress the importance of intervention by the South African government to mitigate the detrimental health effects of unwholesome foods consumed by South Africans. Awareness of these dangers needs to be created by means of education on the health risks associated with the high consumption of Big Foods and to instead promote the need for healthier balanced meals. Recently, South Africa's sugar tax, which was set to be implemented 1 April 2017, is one of the government initiatives in turning the tide on obesity in South Africa (Department of National Treasury, 2016: online; Schönfeldt *et al.,* 2017: online). The tax is designed to reduce sugar intake from sugar-sweetened beverages by upping the price with a 20% fiscal tax. The sugar tax is part of the South African National Department of Health's strategic plan to stem the prevalence of NCDs and obesity (Schönfeldt *et al.,* 2017: online).

2.5.6   Health and economic burden of obesity

South Africa, like many other countries worldwide, is also affected by globalisation with affiliated changes in food systems (Muzigaba *et al.*, 2016:36). Steyn *et al.* (2001:141) report that South Africans have gradually changed their diets from the traditional high fibre, high carbohydrate intake to a diet categorised by high intake of saturated fat,

added sugar and refined carbohydrates. According to Bronkhorst (2015: online), one of the most referenced reasons for South Africa's emerging obesity crisis is the westernisation and urbanisation of the population. The author further elaborates that fast-paced urban lifestyles leave little time for physical activity and less time to prepare meals from home. This leads to OH eating, which often contains high fats, sugar and sodium content (Bronkhorst, 2015: online).

Bronkhorst (2015: online) states that in the WHO Global Burden of Disease (GBD) report on 188 countries, South Africa ranks as one of the most obese nations and the most obese in sub-Saharan Africa. The GBD report shows that 38.8% of South African men over the age of 20 were considered overweight or obese, of which 13.5% were obese. The statistics for South African women are much worse, with 69.3% of women over the age of 20 considered either overweight or obese, of which 42% were obese (Bronkhorst, 2015: online).

The economic development of a nation, among other fundamentals, depends on the health of its population. Therefore, addressing the NCD epidemic is critical to a cycle of improved public health and improved economic growth (Hofman, 2014:647). The burden of obesity and obesity-related diseases has had a negative impact on healthcare costs which have increased in both the private and public health sectors (Fairbrother, 2010:10). This notion is echoed by Some, Rashied and Ohonba (2016:2) who opine that obesity is a serious issue as it imposes a significant burden on the economy at both a micro and macro level. Some *et al.* (2016:2) further elaborate that at a micro level, obesity imposes a substantial burden on the individuals' morbidity, mortality, sickness and so forth, while at a macro-level, obesity places pressure on the healthcare system, impacts on tax revenue, increases government expenditure and increases operating costs for businesses. Hofman (2014:647) states that averting and delaying NCDs is substantially more effective and less costly than treatment of those who become ill. It is true that NCDs have a substantial impact on economic development. The accumulated loss to South Africa's GDP between 2006 and 2015 from diabetes, stroke and heart disease was estimated at US$1.88 billion (Schönfeldt *et al.,* 2017: online).

It must be noted that the emerging prevalence of overweight and obesity is a serious worldwide health concern (Wang, McPherson, Marsh, Gortmaker & Brown, 2011:85). Health risks associated with obesity are the risk of developing cardiovascular disease, cancer, diabetes and other NCDs that are related to diet and risk of cardio-respiratory-

related death. The current increase of deaths related to cardiovascular disease was due to high rates of hypertension and diabetes which are associated with overweight and obesity. NCDs have become the leading causes of death in low- and middle-income countries, and South Africa is no exception. South Africa was reported to have the highest rates of overweight and obese adults in Africa (Schönfeldt *et al.,* 2017: online).

Figure 2.7 below depicts a balanced breakfast meal with the required protein, energy and fibre. Menu Concepts (n.d.) addresses various ways of maintaining good nutrition, especially for individuals observing certain diets.

Figure 2.7: **Suggestion of a balanced breakfast**
Source: Menu Concepts (n.d.: online)

2.6   FOOD SERVICE INDUSTRY'S ROLE/CONTRIBUTION

2.6.1   Management role

The food service industry in the commercial sector has experienced a great deal of development, with an increased focus on healthy eating (Lee, Jin, Jeon & Huffman, 2010: online). With the significant number of people eating out, it seems conceivable that the food service industry should play a role in improving the nutrition of its consumers (Middleton, 2000:400). McCool and McCool (2010a:13) suggest that it would be conceivable that managers within the food service industry recognise that the food service industry has a social responsibility to turn the tide on the obesity epidemic. They also report that managers and menu planners should take the initiative in assuming a leading role in the nation's efforts to combat obesity, which appears to be a critical public health concern. Moreover, the food service industry should spearhead the attempts to alleviate the epidemic and initiate actions to neutralize the

obesity problem (McCool & McCool, 2010a:13). It may be argued that the food service industry is not the prime contributor to obesity, but OH food is definitely related to this issue. In the same vein, Lee *et al.* (2010: online) state that it is vital that managers consider what their consumers want and one of the fastest growing trends currently is to provide healthier food choices on menu offerings. This can be achieved by reducing fat and sugar content and increasing the consumption of fruits, vegetables, fibre and complex carbohydrates (Middleton, 2000:400).

Figure 2.8 below shows a chef preparing and plating a healthy meal. The meal appears to have an adequate amount of fruits and vegetables.

Figure 2.8: Preparing healthy meals
Source: Harris (2014: online)

Table 2.1 below depicts the ethical principles for service industries and how these concepts could be applied to the food service industry to assist in alleviating the obesity epidemic. McCool and McCool (2010b:25) note that of late, firms are expected to go beyond merely profit-orientated actions and to add value to the wellbeing of society at large. The same should be done by the food service industry, as food is closely associated with the health and wellbeing of individuals. In food service operations the menu signifies much more than just a well-crafted elegant list of food and beverage items offered.

Table 2.1: Ethical principles for service industries

Principle	Concept embodied in the principle	Concept applied to the foods service industry and the obesity epidemic
Autonomy	Restaurants should work, produce, trade, buy and sell and make profits	Restaurants should be free to sell foods, products they wish, the obesity epidemic is irrelevant except integrated into the business strategy.
Dignity	Reflects an emphasis on human rights, related to whether an establishment can be held accountable for its actions (relations of the establishment to environment)	Restaurants decision making concerning products sold based on corporate values (initiatives and actions that can be taken to relieve the obesity epidemic).
Integrity	Linked to honesty and uprightness in charade, implies commitment and conscientious observance to moral principles (act as a good citizens and responsible moral agents in society).	Restaurants decision making concerning products sold based on corporate values (initiatives and actions that can be taken to relieve the obesity epidemic).
Vulnerability	Implies respect for weaker or less powerful individuals (not exploiting their vulnerability and treating them fairly).	Restaurants would treat individuals with respect and not persuaded them to purchase foods of low nutritional quality or contribute to an individual's obesity in order to increase their profits

Source: McCool and McCool (2010b:24).

2.6.2 Menu planning

According to Gordon-Davis and van Rensburg (2004:235), the term menu may conjure up an idea of an elegantly designed document illustrating food and beverage items offered by a restaurant. However, for guests the menu communicates the image of the restaurant and contributes to the meal experience, while for food service employees the menu dictates the type of foods that are to be prepared and for managers the menu is the "in-house" marketing and sales instrument (Gordon-Davis & van Rensburg 2004:235). Lee e*t al.* (2011) define a healthy menu as, "a menu with increased nutrition value and/or decreased unhealthy factors by substituting ingredients and/or cooking methods". Hurley and Liebman (1995, cited by Lee *et al.*, 2011), characterizes healthy food as food with less fat, less calories, less refined carbohydrates and less sugars, and includes fresh produce, fibre, lean proteins and vitamins prepared with minimal fat. Menu planning is the process by which menus are planned, wherein consideration of all aspects of a food service system are enumerated (Gordon-Davis & Van Rensburg 2004:235). One can assume that in this process aspects such as recreating menu items, inclusion of healthier meals, seasonal changes and so forth are considered. Ozdemir and Caliskan (2014:6) state that in as much as healthy meals are becoming significantly important for restaurant menus, the menu planning aspect becomes more complex due to implementing healthy menu options.

Currently, it is crucial that restaurant managers and people responsible for creating menus consider incorporating healthy, low fat or low kilojoule meals during the menu planning process. This is because restaurant food is associated with high intake of fats and cholesterol and lower intake of necessary nutrients. The growing prevalence of OH eating is closely associated with increased ingestion of kilojoules, saturated fat, added sugars and salt and conversely, the diminished intake of fruits, vegetables, fibre and vitamins (Glanz *et al.,* 2007:382). These researchers go on to state that large portion sizes leads to overeating, which is closely connected to excess body weight and insulin overload. Therefore, it is evident that because of the increased incidence of eating out and its link to overweight, obesity, cardiovascular diseases and high cholesterol, restaurant menus should include more meals that are healthy and lower in kilojoules and saturated fats. There appears to be paucity of data on factors which influence restaurant managers' decisions on whether to incorporate healthier menu items or not but according to Glanz *et al.* (2007:383), profit, demand and health are considerations in these decisions. Lee *et al.* (2011) state that restaurant managers should consider what their consumers want, and one of the fastest growing trends is to provide healthier food choices.

Figure 2.9 below illustrates healthy and acceptable amounts of nutrients that should be observed when plating a meal. As seen, half of the plate is filled with non-starchy vegetables. One quarter of the plate contains a source of lean protein (meat or plant-based) and the remaining quarter should be filled with whole grains, starchy vegetables and legumes**.**

Figure 2.9: Plating a healthy meal
Source: OHSU Knight Cardiovascular Institute (2015: online)

Table 2.2 below reflects factors which influence a manager's decisions during menu planning.

Table 2.2: Factors that influence restaurant managers' decisions to incorporate healthier or low kilojoule/low fat in the menu

Issue	Most Influential	Less Influential
Most relevant considerations for adding and retaining healthier menu items.	Consumer demands Sales and profit of the item	Ease of cooking Food safety
What healthy foods to add?	Food that is lower in calorie Fruits and veg Fibre	No hydrated fats low carbohydrates low sodium
Perceptions of healthier foods	Need sufficient consumer demand Healthy options avoid	Customers want to indulge when eating out
Obstacles to adding healthier menu offerings	Lower sales margin Note enough appeal Spoils quickly short shelf life ingredient availability	Fruit and veggies Reluctance to identify as food healthy storage requirements Training Employee skill issues
Future trends, opportunities, strategies	Healthier foods may increase slightly Fruits and vegetables add creativity to the menu	Use of ethical products Fresh produce is limited
What trade groups and industry associations can do to support healthier meals	Clearly demonstrate profitability of healthier eating options Partner with various restaurants to market healthy eating	Educate/train new chefs on healthier food use and preparation Improve distribution to increase fresher, riper produce
What public health groups and scientists can do	Conduct consumer research and share with the restaurant industry Publicize good examples of healthy eating	Rate healthfulness of restaurants to drive more people to those restaurants

Source: (Glanz *et al.,* 2007:383)

2.7   THE NEED FOR HEALTHY BALANCED MEALS ON MENU SELECTION

Fitzgerald *et al.* (2004:429) undertook research to determine whether a promotional health movement affected the sales margins of healthy meals in restaurants. A number of restaurants participated in this study where the researchers traced the sale of selected healthy menu items and their counterparts that were sold prior- and post- the

promotional campaign. The findings indicated that the portion of healthy meals sold after the movement showed a trend of increased desire for healthier balanced meals as well as meals with less kilojoule/fat content. The results of this study showed that dieticians should continue creating methods to encourage healthy meal options in restaurants.

Irrespective of the amount of literature published worldwide and media commentary around the key concerns of the unwholesome nature of OH eating, studies reveal that individuals have adopted that kind of life style. However, an equal increase surrounding the interest in dietary value of OH eating, as individuals become more health conscious, has been reported. Hwang and Cranage (2010:69) advise that the trend was a demand for meals that are lower in kilojoules/fat, artificial sugars, refined carbohydrates and trans fats. Therefore, restaurant marketing professionals and menu planners are required to understand the psyche and reasoning of patrons when making menu or meal choices (Hwang & Cranage, 2010:70). Gregory *et al.* (2006:44) report that for many years, the restaurant industry was confronted with disapproval from customers that their meal offerings focus on taste and insignificant importance is placed on nutritional balance and health.

To address diet-related health issues hospitals, community care centres, tertiary institutions as well as government health departments should to work hand-in-hand with restaurants, hotels and various supermarkets. These organisations should act as facilitators to link individuals with community nutritional education workshops that will serve as local support forums for adding nutritional knowledge and value in improving lifestyles of communities. Subsequently, this led to the establishment of the Healthy Dining Programme (HDP) which was developed and established in 1997. The programme necessitated a joint venture between community restaurants and government health departments (Hwang & Cranage, 2010:69). The objective of the joint venture and the programme was to identify healthful menu options and to promote them to assist patrons in making healthier meal choices when eating out.

To support restaurants to accommodate and heed the evolving interest in nutrition of patrons, the Colorado State University developed the Dine to Your Hearts' Delight Restaurant Program (Wenzel, Anderson, Gregory & Pineda, 2008:63). The programme was developed to aid restaurant managers and their marketing professionals to design and encourage healthy balanced menu items and meals through selected menu items that were lower in kilojoules, artificial sugars, salts and

refined carbohydrates. Post- the establishment of the programme, participating restaurants and local newspapers reported that healthy meals were in demand. These restaurants have since incorporated healthy meals into their menus and now offer balanced food choices. Wenzel *et al.* (2008:64) reveal that the trend called for healthier meals that are lower in kilojoules such as grilled chicken, lean meats and low salt content, and a demand for fruits, nuts and steamed vegetables.

Murray (2017: online) records that a trend observed in South Africa in the food service industry during the past decade is the increased importance of healthy options in all types of restaurants. According to Murray (2017: online), in South Africa, as in many other developed nations, the current food consumer is said to be nutrition-aware and knowledgeable, and a lot of thought goes into the dietary content of the food they buy and how it will impact upon their health.

Murray (2017: online), speaking of vegetables, reports:

> "No longer just a side-dish, vegetables are taking centre stage with restaurants trending with popular items such as deep fried kale and fast food brands catering to the growing vegetarian palate."

The drive towards healthier eating and nutritional awareness has become greatly promoted by the South African government through initiatives such as the National Nutrition Week (Murray, 2017: online). The food service/restaurant industry and various health policy boards in the United States jointly yielded a positive response to the trend for healthier balanced meal options for individuals who desire these meals while dining out (Harnack & French, 2008:2). However, it is crucial for restaurants to offer these meals and actively promote them as the restaurant industry has contributed to the increase of obesity and other NCDs related to diet.

Figure 2.10: *Hello Fresh* meal
Source: Morin (2016: online)

Figure 2.10 above illustrates an example of the types of meals prepared and served by *Hello Fresh*. *Hello Fresh* is a meal kit delivery service company in the USA which prides itself on healthier options and lighter types of home comfort meals. Figure 2.10 reinforces the concept of OHSU Knight Cardiovascular Institute (2015: online), in that the portions of each food element is carefully observed.

2.8   KNOWLEDGE AND PERCEPTIONS OF HEALTHY EATING

Harnack and French (2008:3) suggest that there is little published literature on the need for nutritional knowledge among food service employees. Harneck and French (2008:1) believe that kilojoule labelling on restaurant menus one method that can be implemented to assist consumers in making healthy informed food choices when dining out. Notably, an increasing number of restaurants have labelled some menu items as "healthy choice" yet very limited nutritional information is provided by waitrons when serving guests (Auchincloss, Leonberg, Glanz, Bellitz, Ricchezza, & Jervis, 2014:75). The labelling of menu items was motivated by low consumer knowledge and awareness of the diet quality of restaurant foods (Auchincloss *et al.* 2014:75). It was believed that labelling would spur improvements in restaurant menus as restaurant owners, managers, and chefs would become more cognizant and knowlagable of excessive calories, fat and sodium in their food (Auchincloss *et al.* 2014:75; Jarlenski, Wolfson & Bleich, 2016:91). Furthermore, the disclosure of diet value at the point of purchase has overwhelming public support in several countries, including those where menu labelling has been implemented (Littlewood, Lourenço, Iversen & Hansen, 2016:2106). Consumers otherwise rarely notice or access energy declarations provided by food-service establishments in any other format, as it is more effective it if is communicated with them (Littlewood *et al* (2016:2106). Hamm, Schnaak and Janas (1995:1159, cited by Hu, Leong, Wei & Yeh, 2005:86) report that food service staff had fairly poor knowledge of nutrition, however, they had positive attitudes towards the need for nutritional considerations in the food service sector. Furthermore, Reichler and Dalton (1998:167) are of the view that the lack of nutrition knowledge among chefs presents an opportunity for nutrition experts to become educators and offer training to the food service sector. It is believed by Palmer and Leontos (1995:1418) that a meaningful opportunity exists for entrepreneurial dieticians to offer nutrition skills and training to the food service sector, particularly restaurants who wish to offer healthy, low calorie menu items. Kozup, Creyer and Burton (2003:30, cited by Din *et al.*, 2012b:415), report that restaurant staff demonstrate a very poor knowledge of

nutritional content but they relied on the assistance of nutritionists. Harnack and French (2008:4) debate that consumers require to be 'clued-up' on kilojoule and fat content in meals on menus in restaurants as this may create awareness of the amount of fat content in the food that they order.

Over the past decade, there has been an increase in the incidence of diet related diseases such as overweight and obesity, diabetes, heart diseases and cardiovascular diseases and as a result, more focus is placed on consumer nutritional education (Sharma, Wagle, Sucher & Bugwadia, 2011:146). The importance of consumer nutrition education and awareness cannot be over emphasised as several diseases such as obesity and heart disease, which are rife, are closely related to diet. Although some research exists on consumer perception of healthy eating in restaurants, little research has been published on chefs' perceptions of healthy meals and nutrition in restaurants (Middleton, 2000:400). However, according to Middleton (2000:405), a study measuring the attitudes and perceptions of chefs on healthy eating in restaurants revealed that a substantial number chefs (79%) felt they had a responsibility towards consumers with regards to healthy food, with the hopes that it would ensure repeat patronage. Chefs and waitrons in the restaurant industry are distinctively placed to influence the provision of healthier meal items, however very little is known about their knowledge and opinions on this issue (Lessa, Cortes, Frigola & Esteve, 2017:1). To address the knowledge gap regarding chefs' knowledge on their nutritional knowledge, researchers Lessa, Cortes, Frigola and Esteve conducted a survey. The result of the survey showed that chefs had a significantly lower nutritional knowledge score (59%) than the general public (72%) Lessa *et al* (2017:2). Therefore, the chefs' ability to construct nutritionally sound menus and indeed cook healthily is brought into question.

As previously mentioned, OH eating is on the increase, despite the poor diet quality of meals consumed OH (Kasparian, Mann, Serrano & Farris, 2017:164) but the number of people desiring to eat healthy meals when eating out is equally growing (Hu *et al.*, 2005:85). Din *et al.* (2012b:420) believe that the change in consumer perceptions towards healthier eating, even in restaurants, may be attributed to their educational knowledge, which has made them more sophisticated. The demand for healthier meals puts significant pressure on the food service industry, as preparing and serving healthier meals requires some changes in labour and training/education, equipment and the nature of food goods purchased (Condrasky, Hegler, Sharp, Carter & Komar, 2015:289).

Although Din, Zahari, Othman and Abas (2012a:700) report that consumers positively perceive the significance of healthy information on restaurant menus, they also believe that the willingness and challenges of restaurants to implement the healthy information has not been broadly explored. According to Condrasky *et al.* (2015:291), there is limited published research on chefs' attitudes and knowledge of healthy food preparation. This may be attributed to the various challenges attached to incorporating healthy meals in restaurants. The main challenges in incorporating healthy meals, as reported by Hu *et al.* (2005:85), were insufficient nutritional training and education, the need for staffing skills and training, and the exorbitant cost of ingredients (Obbagy, Condrasky, Roe, Sharp & Rolls, 2011:332). Hwang and Lorenzon (2008:287, cited by Ozdemir & Caliskan, 2014:7) believe that communicating nutritional information on menus or by staff, may improve consumers' perceptions of a restaurant and may encourage the consumer to order the healthier menu items.

2.9   CONCEPTUAL FRAMEWORK OF THE STUDY

Based on the above reviewed literature, a conceptual framework (Figure 2.11 below) was developed to illustrate the concepts of the study. The framework illustrates the effects of increased OH eating (food consumed in a food service environment), the effects of consuming meals of poor diet quality and how the meals may contribute to excessive weight gain and subsequently lead to obesity. The framework also illustrates food service managements' role in mitigating the obesity pandemic through revaluating menu offerings during the menu planning process.
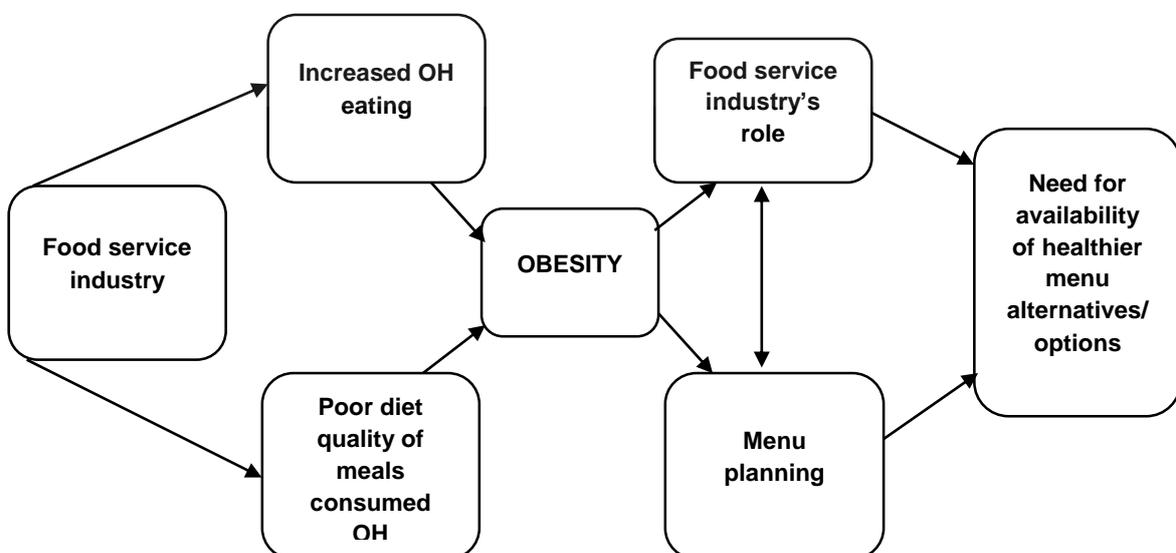
Figure 2.11: Conceptual framework of the study

Source: Researcher's own construct

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2.10   SUMMARY

This chapter offered detailed insight into the key concepts under study, namely the food service industry, OH eating, the diet quality of food that is consumed OH and the correlation between OH eating and the prevalence of overweight and obesity and other NCDs related to diet.

Additionally, the chapter explored the food service industry's role in alleviating the prevalence of overweight and obesity through healthier, more balanced menu offerings that are low in fats. The chapter also investigated possible implications of the economic and health burdens of the obesity epidemic.

The chapter reviewed pertinent existing literature, and provided a conceptual framework that was developed by the researcher.

In the following chapter, Chapter 3, presents the research design and methodology employed in this study.

CHAPTER 3
RESEARCH METHODOLOGY

3.1   INTRODUCTION

This chapter describes the research plan adopted for this study and explains the steps taken to address the research questions. The chapter delineates the research design of this study, and the approach and techniques employed to answer the research questions. The sampling techniques, data collection and the statistical analysis of data is presented.

This chapter commences with an illustration of the research problem and research questions. The ethical considerations observed throughout the study conclude this chapter.

3.2   THE RESEARCH PROBLEM

Tripathy and Tripathy (2015:16) define the research problem as an account about a specific area of concern, an existing circumstance to be improved, a complexity to be eliminated or a troubling issue or question that exists in scholarly literature, theory or in practice. This section details the problem statement in this study.
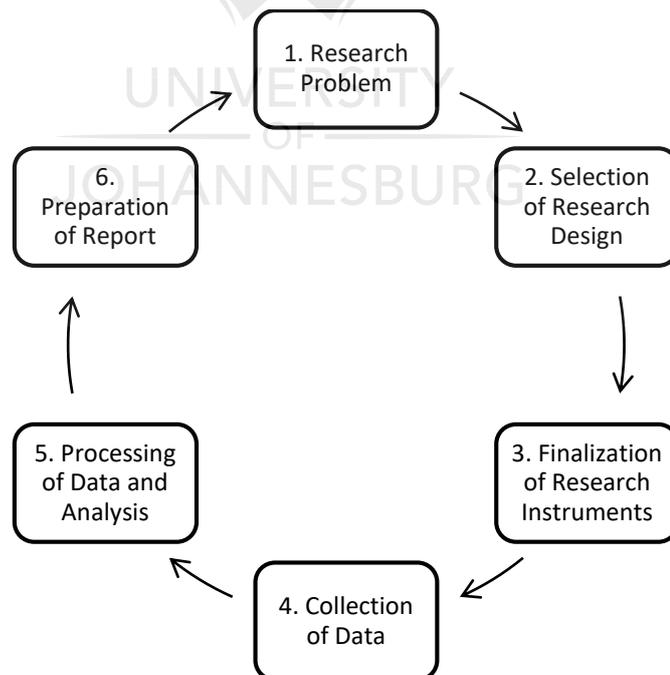
Figure 3.1: The social research process
Source: Singh (2007a:62)

Figure 3.1 above outlines the social research process which aids the researcher in addressing the research problem. The forthcoming sections in this chapter set out the research process followed in this study to address the research problem.

3.2.1   Identifying the research problem

The obesity epidemic in South Africa attributed to the effects of globalisation, which is the predominant force in nutritional transition among South Africans (Kruger *et al.*, 2005a:491). These authors suggest that additional freedom of movement among black people and exposure to the global market economy resulted in a shift from traditional foods (low in fat and sugar and high in fibre) to rich foods containing excess levels of saturated fats, added sugars and highly refined foods (Kruger *et al.,* 2005a:491). In South Africa, as with many other countries, "Big Food" which are large commercial enterprises in the food and beverage environment, is rapidly increasing and is perceived as unhealthy/unwholesome eating (Igumbor *et al.,* 2012:1). South Africa is no exception and has become a significant market for the "Big Food" industry (Kruger *et al.,* 2005a:491).

3.3   RESEARCH QUESTIONS

3.3.1   Main research question

What is the food service industry in Johannesburg doing to contribute towards combating obesity?

3.3.2   Secondary research questions

To address the main research question the following secondary research questions were formulated:

- How knowledgeable are food service employees (waitrons) on healthy balanced meal options and low kilojoule meals?

- Does the manager consider the option of healthy balanced meals or low-kilojoule meals as a healthier option (as alternatives) during menu planning?

- Do restaurant menus cater for health conscious individuals and to what extent is the food service industry adapting to current trends of consumer eating habits?

- What are the perceptions of food service employees (managers, waitrons) on how healthy meals benefit a restaurant's outlook?

3.4   RESEARCH DESIGN

3.4.1   Introduction

The research design refers to the overall approach adopted to integrate the different components of a study in a clear and logical manner, thereby ensuring that the research problem is adequately addressed (Labaree, 2009). It constitutes the blueprint for the collection of data, measurement of variables, and the analysis of data (de Vaus & de Vaus, 2001). For the purpose of this study, research design is divided into research approach and research technique.

The study adopted a quantitative research method that was guided by specific research questions that measured the food service industry's contribution towards the obesity epidemic. The data was collected through closed-ended, self-administered questionnaires completed by waitrons, their supervisors and managers. The study therefore employed a descriptive research design to aid in analysis of the data.

3.4.2   Research approach

The study adopted a quantitative approach. Quantitative research is empirical research which relies on data being expressed in numerical form (Punch, 2013:3). Quantitative research requires the investigator to address research objectives through empirical valuations that contain numerical measurements and analysis (Zikmund, Babin, Carr & Griffin, 2013:134). It entails examining the relationship between variables which can be measured on instruments for data to be analysed using statistical procedures (Creswell, 2013:36). In quantitative research, data can be collected by means of existing instruments or pilot-tested, self-developed (by investigator) instruments (Mhlanga, 2015:69).

Quantitative investigators direct a considerable amount of activity toward measuring concepts with scales that either directly or indirectly provide numerical values, which can be used in statistical computations and analysed descriptively (Zikmund *et al.*, 2013:134). According to Babbie and Mouton (2001:80), descriptive studies use a quantitative research approach to draw out answers to the research questions and sub-questions. Descriptive research, as the name suggests, enumerates descriptive data about a population that is being studied (Singh, 2007a:65). It is used to describe an occurrence, phenomenon or provide a factual or accurate description of a population being studied. Descriptive research aims to answer the following: Who? What? When? Where? and How?, while causal research is used to establish cause-

and-effect relationships between variables. The main purpose of descriptive studies is to provide a description of a situation or occurrence as it exists at present (Kothari, 2004:3). The main characteristic of this method is that the investigator has no control over the variables (Kothari, 2004:3) and only a report on the occurrence can be provided.

Table 3.1: Aspects of quantitative research

Research aspect	Quantitative research
Purpose	Test hypotheses or specific research questions
Approach	Measure and test
Data collection approach	Structured responses Categories provided
Samples	Large samples to produce generalizable results
Most often used	Descriptive and causal research designs

Source: Zikmund *et al.* (2013:135)

Table 3.1 above details the various aspects of quantitative research. These are categorised, varying from the purpose of the research approach, data collection, samples and designs that are most often used.

Table 3.2 below indicates the aspects of quantitative research adopted in the study.

Table 3.2: Aspects of quantitative research adopted in the study

Research aspect	Quantitative research	Quantitative research employed in the study
Purpose	Test hypotheses or specific research questions	The study has specific research questions
Approach	Measure and test	Measuring food service industry's contribution towards combating the obesity epidemic
Data collection approach	Structured responses Categories provided	Structured responses obtained through a closed-ended, self-administered questionnaire
Samples	Large samples to produce generalizable results	Sampled food service employees and their managers/supervisors.
Most often used	Descriptive and causal research designs	The study employed a descriptive design

Source: Zikmund *et al.* (2013:135)

3.4.3 Research technique

In order for the investigator to amass primary data for analysis and interpretation, a field survey technique was employed. Primary data is data that has been observed,

experienced or recorded and are the nearest to the truth with regards to an occurrence (Walliman, 2010:69). The study made use of a survey instrument to collect quantitative data. Survey instruments provide a numeric description of trends, attitudes and opinions of the sample (Creswell, 2013:201). In quantitative research structured, self-administered questionnaires are preferred, as these allow respondents to complete them themselves (Singh, 2007a: 69). The use of a questionnaire enables the investigator to organize and code the questions and receive responses without actually having to talk to the respondent (Walliman, 2010:97). Therefore, there is no personal influence of the researcher, and disconcerting questions can be asked with a reasonable chance of getting a true response (Walliman, 2010:97).

A survey is a quantitative measure that collects data in an organized and methodological manner about areas of interest of a population and assembles the data into useful summary form (Statistics Canada, 2010:1). It can be seen as a research strategy in which quantitative data is systematically collected from a relatively large sample taken from a population (De Leeuw, Hox & Dillman, 2008:2). The purpose of a survey design is to form a generalization from a sample to a population so that inferences can be made about characteristics, attitudes or behaviors of the population (Creswell, 2013:203).

It is clear that for the researcher to achieve the aforementioned research objectives and to address the research problem and questions, a quantitative, descriptive, survey-based research approach was adopted for this study.

3.5   RESEARCH METHODOLOGY

Research methodology can be defined as the philosophy or the general principle which guides the research (Dawson, 2002:14). It is more about the researcher's attitude and to a large extent, their understanding of research and the strategy adopted to address research questions (Greener, 2008:10).

The following are elements that were utilized in this study, with regards to research methodology, namely operationalization and measurement, and were adopted from Lewis-Beck, Bryman and Liao (2003:162).

3.5.1   Operationalization

This process moved the researcher from the abstract phase to the empirical level, wherein emphasis is placed on variables rather than concepts (Lewis-Beck *et al.*,

2003:162). It addresses the question of "how will the researcher measure the variables in the study" (Babbie & Mouton, 2001:98). It therefore demarcates the research instruments used, namely the two sets of questionnaires.

3.5.1.1 Research instrument

Questionnaire design

Invented by Sir Francis Galton, a questionnaire is a research instrument comprising a set of structured or unstructured questions intended to capture responses from participants in a standardized manner (Bhattacherjee, 2012:74). The study made use of a questionnaire containing closed-ended questions. Closed-ended questions are structured questions that provide a set of responses from which the respondent has to choose one or sometimes more than one response (Creswell *et al.*, 2007:105). This type of questionnaire is commonly used to generate statistics in quantitative research. Greater numbers can be produced and they can be scanned directly into electronic computer software (Dawson, 2002:31). For the purpose of this study, data was captured on the statistical software IBM SPSS version 2.4. As a method of data collection, a questionnaire is a very flexible yet powerful tool, which has the advantages of having a structured format and is easy and convenient for respondents to complete (Walliman, 2010:97).

In quantitative research data can be collected by means of existing instruments or pilot-tested, self-developed (by investigator) instruments (Mhlanga, 2015:69). For the purpose of this study, the instrument was a pilot-tested, self-developed tool. Questionnaires require a lot of time and skill to design and develop, as they need to be short and simple to follow (Walliman, 2010:97). Therefore, the research avoided complex question structures, bearing in mind that not all the respondents would be able to complete questionnaires. The questionnaire units were phrased in English, mostly because the majority of employees in a food service environment were expected to be knowledgeable in English but also because it is one of the main languages spoken in Gauteng. To eliminate any chances of ambiguity and confusion regarding the questions, simple language was used to construct questions.

The study used two sets of questionnaires, one for food service managers and the other for food service employees (waitrons). In some sections, both questionnaires measured the same variables, while the manager's questionnaire differed in two sections that measured management level activities that influenced menu alterations during the menu planning process.

Named after Rensis Likert who was a pioneer in the field of attitude measurement (Bradburn, Sudman & Wansink, 2004:126), a Likert scale involves placing rating scales on questions which allow respondents to mark a numerical scale in response to a question (Greener, 2008:67). The Likert scale includes items that are easy to understand statements to which respondents can indicate their extent of agreement or disagreement on 5 of 7-item scale (Bhattacherjee, 2012:47). A Likert-type question may consist of multiple statements that would be assumed to form a scale, items grouped for other reasons would form a set or battery (De Leeuw *et al.,* 2008:57). For the purpose of this study, a 5-point Likert scale was employed in various items on the questionnaire.

A 5-point Likert scale was employed to illustrate the degree of various variables to measure a) knowledge, b) the ability to assist guests with specific requests c) the number of available healthy/alternative meals on the menu, d) factors influencing menu alterations regarding inclusion of healthy meals, e) to measure degree of perceived or experienced challenges regarding the inclusion of healthy alternatives to the menu, f) to measure perceived value/influence of availability of healthy meals on a restaurants image and g) to measure the degree at which the food service industry has adapted to consumer eating habits.

The following 5-point Likert-type scales were used

To measure knowledge:

"strongly disagree" – (1), "disagree" – (2), "neutral" – (3), "agree" – (4), "strongly agree" – (5).

To measure ability to assist guests with specific requests:

"very poor" – (1), "poor" – (2), "average" – (3) "good" – (4), "very good" – (5).

To measure the quantity of availability of healthy/alternative meals on the menu:

"strongly disagree" – (1), "disagree" – (2), "neutral" – (3), "agree" – (4) "strongly agree" – (5).

To measure factors influencing menu alterations regarding inclusion of healthy meals:

"strongly disagree" – (1), "not applicable" – (2), "not important" – (3), "important" – (4) "most important" – (5). Only found in Manager's questionnaire.

To measure perceived or experienced challenges of incorporating healthy alternative meals on the menu:

"strongly disagree" – (1), "not applicable" – (2), "strongly disagree" – (3), "disagree" –
"agree" (4) "strongly disagree" – (5). Only found in Manager's questionnaire.

To measure the perceptions on whether healthy meals have an impact on a restaurant's image:

"strongly disagree" – (1), "disagree" – (2), "neutral" – (3), "agree" – (4) "strongly agree"
– (5).

To measure the degree at which the food service industry has adapted to consumer eating habits:

"very poor" – (1), "poor" – (2), "average" – (3) "good" – (4) "very good" – (5).

3.5.2   Measurement of concepts in the study

Measurement is the process in which figures/digits are attached to phases or
characteristics of variables being measured (Lewis-Beck *et al.*, 2003:162). For the
purpose of this study, measurement was incorporated through the measurement of
validity and reliability of the variables and instrument and feasibility of the study.

3.5.2.1 *Validity*

Validity refers to the extent to which a measure effectively represents the underlying
construct that it is supposed to measure (De Leeuw *et al.,* 2008:16; Bhattacherjee,
2012:58). It is the extent to which the instrument measures what it is actually intended
to measure (Leedy & Ormrod, 2010:92). This study incorporated the forms of validity,
face and content, into the questionnaire. Singh (2007a:77) postulates that validity
attempts to assess whether a measure of a concept really measures that specific
concept, which is the extent to which the concept measures the units it was designed
to measure.

Face validity refers to whether the instrument of measure seems to be a reasonable
measure of its underlying construct (Bhattacherjee, 2012:58). It means that the
respondent can broadly see that the method is valid for researching the question
(Greener, 2008:37). It refers to validity which establishes the fact that the instrument
actually reflects the content of the concepts being researched (Singh, 2007a:79). To
incorporate face validity, the questionnaire was compiled with consideration of the
aspects of the food service staff's ability to comprehend the questions to afford them
ease in ability to complete the questionnaires. Content validity is an assessment of
how successful an instrument is aligned to the relevant content of a study that is being
measured (Bhattacherjee, 2012:59). As it suggests, it assesses whether the content of

the instrument is in consonance with the known literature aligned to the field being studied (Singh, 2007a:79). To incorporate content validity, the questionnaire was compiled on the theoretic concepts of the study discussed in detail in the literature review of the study (Chapter 2). A pilot study was conducted to measure the validity of the questionnaire. The pilot study sampled 50 respondents from four restaurants in Johannesburg, wherein 20 were restaurant managers and 30 were waitrons.

3.5.2.2 Reliability

Reliability is the degree to which the instrument is consistent or dependable (Bhattacherjee, 2012:56). It is the dependability of the instrument of measure to deliver a certain unit provided that the construct remains unchanged (Leedy & Ormrod, 2010:28; Pallant, 2011:6). It signifies the issue of consistency of measures, pertaining to the ability of the instrument to measure the same unit each time the instrument is used (Singh, 2007a:77). Bhattacherjee (2012:56) affirms that reliability denotes consistency but not accuracy. De Leeuw *et al.* (2008:137) posit that reliability is a desirable attribute, however, reliable responses may not entirely be valid.

Kothari (2004:74) considers three types of validity in his research, namely content validity, criterion-related validity and construct validity. Where content validity entails the extent to which an instrument provides adequate coverage of the field being studied (Kothari, 2004:74). Criterion-related validity refers to the researcher's ability to predict some estimates of the outcomes and construct validity is more abstract as it aims to confirm the predicted correlations with various theoretical propositions (Kothari, 2004:74).

De Leeuw *et al.* (2008:37) suggest that researchers should design research which is transparent and clear, this to enable the reader to both conduct the same method and produce the same results, or the method is clear enough to inculcate assurance that the results were not fudged in any way. Reliability was considered in the following regard in this study: stability—the researcher ensured that the instrument of measure was stable over time as the collection period was from April 2016 to July 2016 (four months). The instrument of measure was stable which resulted in the researcher being confident that the results relating to the instrument for the sample would not fluctuate (Singh, 2007a:77).

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3.5.2.3 Feasibility

Kothari (2004:26) suggests that when the field of inquiry is relatively new and does not have a set of well-crafted instruments of measure available, a brief feasibility study should be conducted. It is possible that prior to undertaking research, where there is not much known about the prevalence of the field in question, to undertake a feasibility study, also known as a pilot study (Statistics Canada, 2010:21).Feasibility for this study was undertaken through a pilot study. Leedy and Ormrod (2010:111) state that a pilot study is an ideal manner in which the feasibility of study can be determined. By definition, a pilot study takes place prior to the actual study to determine the feasibility of the study (Mauch & Park, 2003:136). It is therefore essential that the pilot has provision for soliciting and amassing formative evaluation from the pilot study population (Mauch & Park, 2003:136). It may happen that post-conducting a feasibility study, as a consequence, specific elements of the questionnaire may have to be modified (Mauch & Park, 2003:137; De Leeuw *et al.,* 2008:422).

To this effect, participants from the pilot study were requested to complete the draft questionnaire based on a 5-point Likert scale which was employed to illustrate the degree of various variables to measure a) knowledge, b) the ability to assist guests with specific requests c) the number of available of healthy/alternative meals on the menu, d) factors influencing menu alterations regarding inclusion of healthy meals, e) to measure degree of perceived or experienced challenges regarding the inclusion of healthy alternatives to the menu, f) to measure perceived value/influence of availability of healthy meals on a restaurants image and g) to measure the degree at which the food service industry has adapted to consumer eating habits.

The participants were asked whether they were able to adequately comprehend the questionnaire and the instructions. Suggestions solicited from the participants' responses were employed in the final questionnaire.

3.6   SAMPLING

A population, as defined by (Bhattacherjee, 2012:65), is all the people or units of analysis with the attributes that a researcher desires to study. A sample is a subsection or a part of a larger population (Singh, 2007a:88; Zikmund *et al.*, 2013:385), it is an indispensable technique in research, as attempting to study the entire population is not possible and is not practical (Singh, 2007a:16). A sample is a group of respondents

from whom the data are collected and they are representative of a specific population (McMillan & Schumacher, 2006:11). Therefore, sampling is a statistical process of selecting a subsection, also referred to as a sample, of a population of interest of study to make observations and statistical inferences about the population (Singh, 2007a:89; Bhattacherjee, 2012:65).

Figure 3.2 below outlines the sampling process which comprises several stages. The initial stage entails defining the target population which the researcher desires to explore. The second step is choosing a sample frame, which refers to the accessible section of the target population and usually contains a list with contact details. The final step is choosing the actual sample from the sampling frame by using a well-defined sampling technique (Bhattacherjee, 2012:66).
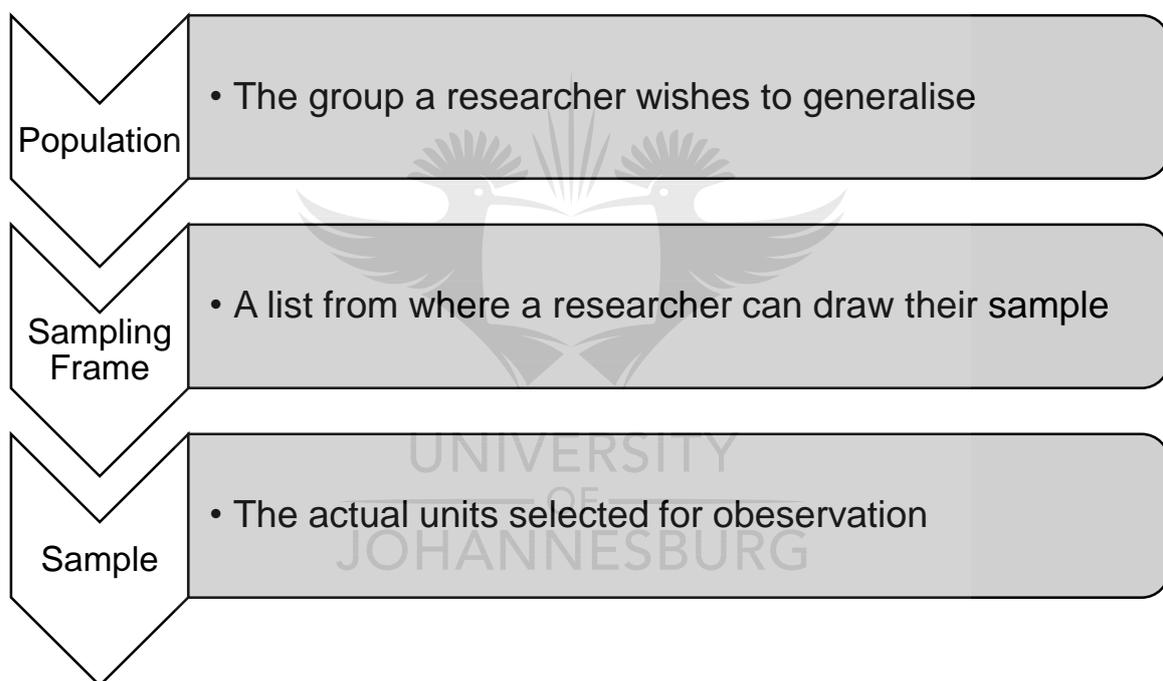
Figure 3.2: The sampling process
Source: Bhattacherjee (2012:65)

3.6.1   Food service industry

As mentioned in Chapter 2 of this study, to simplify what is understood by the term "food service", it is important to note that the term can be spelt differently—"food service" in the United Kingdom (UK) and "foodservice" in the United States of America (USA) (Edwards 2013:223). The food service industry can be categorised in a number of ways, one of which is to categorise the industry into two segments as illustrated in Figure 2.3 in Chapter 2 of the study. The profit, private or commercial segment

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comprises various types of restaurants, coffee shops, bistros, cafés, and fast-food outlets (Edwards, 2013:223). For the purpose of this study, the researcher observed restaurants.

A database of registered restaurants in Johannesburg was obtained from the Mayoral Office of the CoJ's Department of Social Development. The Mayor of the CoJ had realized the need to mitigate the prevalence of obesity in the City. To this end, the Mayor mandated that a Nutritional Pledge between the Department of Social Development at the CoJ and restaurants within the CoJ (that are willing to participate), be signed. The School of Tourism and Hospitality of the University of Johannesburg was then approached to assist and partner with the CoJ. Refer to Appendix A for the initial proposal for this initiative and regarding the study. The database presented 200 registered restaurants in the Johannesburg area at the time of the study, of which only 22 restaurants agreed to work within the scope of the CoJ's project.

However, due to lack of sufficient participants from the selected restaurants, the researcher deemed it necessary to explore other means of obtaining data. The researcher was mindful of ethical considerations regarding inclusions. The inclusion criteria considered the following factors: restaurants that were similar to the already existing sample from the CoJ database, as well as restaurants based inside hotels. Fast-food restaurants were not considered for inclusion. The restaurants that were selected/included had to be restaurants that serve full meals during breakfast, lunch and dinner.

3.6.2 Participants and sample

Tabachnick and Fidell (2007:613, cited by Pallant, 2011:183) state that a sample size of at least 150 – 300 participants is sufficient to conduct statistical analysis for quantitative research. Hair *et al.* (2009:235) agree that survey research requires at least 200 participants and is best suited for descriptive studies analysis. Therefore, this study targeted 230 participants. However, 15 participants refused to complete the questionnaires and 11 participants returned incomplete questionnaires. This led to the study sampling 204 respondents. A sample of 204 is still acceptable for quantitative survey-based research, with at least 95% confidence level.

Of the 204 usable questionnaires, 70 were completed by the restaurant managers, while 134 were completed by waitrons. These were collected from 11 restaurants and restaurants within hotels in the Johannesburg area.

The study employed a non-probability sampling technique. In non-probability sampling the possibility that any unit being sampled will be included in a non-probability sample cannot be specified (Welman, Kruger & Mitchell, 2005:56). Furthermore, non-probability sampling is based on factors such as common sense or ease of collecting the data coupled with an effort to maintain representativeness and avoid bias (Gravetter & Forzano, 2012:139). Typically, units are selected on non-random criteria, such as purposive or convenience, thus eliminating researcher bias (Bhattacherjee, 2012:69). The study employed combined strategy sampling, where two or more sampling strategies are adopted to select respondents (Gravetter & Forzano, 2012:145). A convenience sampling strategy was adopted to sample waiters/food service employees, whilst a purposive sampling strategy was employed to sample supervisors and food service managers. The researcher deemed these strategies suitable considering the nature of the study and nature of the respondents, as they are well suited for collecting quantitative data, given the focus, context and logistical constrains of the sample.

Convenience sampling is a strategy in which respondents are drawn from the part of the population that is readily available or convenient (Bhattacherjee, 2012:69). This method is simple, less expensive and time saving (Gravetter & Forzano, 2012:147). The sample selected for the study were individuals who work shifts, under very stringent and busy conditions. The researcher intended to collect the data per shift and distribute questionnaires to waitrons either at the beginning or end of their shift. The participants were selected based on their availability and willingness to participate during or just before their shift.

Purposive sampling is a strategy in which researchers rely on their experience or previous research findings to obtain data from respondents and this data may be regarded as representative of the population (Welman *et al.*, 2005:58). This sampling strategy was adopted for supervisors and managers in selected restaurants. The researcher believes that their contribution to the study will be highly beneficial, based on their knowledge and level of experience. Both these methods will contribute towards making the study sufficiently representative to enable the researcher to measure validity and reliability of the study.

Table 3.3 below specifies the research frame which is the procedures the researcher followed to select the sample for collection of data.

Table 3.3: Research frame

Target population	Food service employees:
	Waitrons – referred to as waitrons in this study (male and female)
	Restaurant supervisors and managers
Sampling frame	Waitrons and restaurant supervisors and managers that were available and willing to participate in the study.
Sampling method	Non-probability sampling strategy:
	Convenience sampling strategy for collecting data from waitering staff
	Purposive sampling strategy for collecting data from restaurant supervisors and management
Time period for collecting data	April 2016 – July 2016
Area	Within the parameters of the Johannesburg Metro as per areas that fall under the CoJ's jurisdiction
Sample size	204

Source: Researcher's own construct

3.6.3 Data collection

The primary data for this study was obtained through survey questionnaires. Data collection is the process of gathering the required information for each unit in the survey and this process can be done through structured interviews or self-administered questionnaires (Statistics Canada, 2010:3). The data for this study was collected through a survey-based method, using closed ended, self-administered questionnaires.

The data were collected from April 2016 to July 2016 (four months), during weekdays at times specified by restaurant managers. Most restaurants requested the researcher to collect conduct the data during shift changes, to ensure a fair chance for both early and late shift staff to participate in the study. The researcher was given an opportunity to explain the aims of the study to the participants—waitering/service staff and their managers/supervisors. The rationale for this was that questionnaires issued to the food service employees measured their knowledge and awareness pertaining to healthy meals, low kilojoule meals, and generally the correlation between the emerging obesity epidemic and OH eating. The questionnaire issued to management measured what efforts management was making towards combating the obesity epidemic and how employees are trained with regards to specified special dietary requirements related to

low kilojoule and healthy meals. The researcher emphasised that the information would be kept confidential and respondents would remain anonymous. Their personal details would not be recorded on their questionnaires. The supporting cover letter attached to questionnaires is attached as Appendix B (page 110).

Questionnaires were guided by the objectives of the study together with the literature that was reviewed, seeking to address the gaps found in literature. This was done to ensure accurate measuring of the variables and to ensure validity and reliability of the questionnaire.

3.6.4   Data coding and analysis

Coding is defined by Singh (2007a:82) as the process of conceptualising research data and classifying them into meaningful and relevant categories for the purpose of data analysis and the interpretation. According to Welman *et al.* (2005:227), coding is a process that identifies the variable that is to be analysed statistically. It is the process of assigning a numerical unit to responses to expedite data capturing and processing data in general. Some questions are coded response categories on the questionnaire, whilst others are coded after collection (Statistics Canada, 2010:3). For the purpose of this study, the questions were coded response categories on the actual questionnaire. This enabled ease of capturing of data on SPSS statistical software.

A statistical unit at the University of Johannesburg, STATKON, was approached to assist with the analysis of the study. Data was captured on IBM SPSS version 2.4. SPSS is a Windows-based programme that captures and analyses data, and create tables and graphs therefrom, which allows the researcher to interpret the data. Within SPSS, the results of the study were analysed using descriptive statistics as the statistics (results) describe the distribution and the relationship of variables and correlation was made with various statistical methods.

Statistical analysis is based on the principle of collecting data from a sample of individuals and using those data to make interpretations about the wider population from which the sample was drawn (Singh, 2007b:409). In addition, the quantitative data for the study were analysed using SPSS version 2.4.

The following statistical analyses were employed in the study: custom tables with percentage (%), mean (M) and standard deviation (SD), as well as cross-tabulations and Chi-square tests, and reliability statistics.

Table 3.4 below presents the statistical analysis employed in the study. The table illustrates the various descriptive data analyses undertaken in the study and where each statistical test can be found in Chapter 4.

Table 3.4: Data analysis

Constructs to be measured	Found in Results, Chapter 4 and sample group	Method of analysis
Demographic variables of respondents	Table 4.1 – Managers Table 4.2 – Waitrons	**Frequency (n) and Percentage (%)**
Menu offering and availability of healthy alternatives	Table 4.3 – Managers Table 4.4 – Waitrons	**Custom table with percentage (%), mean (M) and standard deviation (SD)**
Knowledge and training regarding menu Changes and availability of healthy alternatives	Table 4.5 – Managers Table 4.6 – Waitrons	
Perceived or experienced challenges regarding incorporating healthy alternatives	Table 4.7 – Managers	
Perception of how healthy meals benefit restaurant	Table 4.8 – Managers Table 4.9 – Waitrons	
Knowledge of low kilojoule meals on the highest level of education among managers and waitrons	Tables 4.10 and 11 - Managers Tables 4.12 and 13 - Waitrons	**Cross-tabulation with Chi-square test**
How has the food service industry adapted to consumer eating habits and the degree of availability of healthy meal options on the menu a	Tables 4.14 and 15 – Managers	
How the food service industry adapted to consumer eating habits and the menu has caters for guests who are health conscious/prefer low-kilojoule meals/on diet	Tables 4.16 and 17 – Waitrons	
Menu offering and availability of healthy alternatives Knowledge and training Criteria/factors that influence: adding low-kilojoule items to the menu. Perceived or experienced challenges: Incorporating healthy alternatives Perceptions: how healthy meals benefit restaurant image	Table 4.18 – Managers Table 4.19 – Waitrons	**Reliability statistics: Cronbach's alpha**

Source: Ressearcher's own construct

3.7 ETHICAL CONSIDERATIONS

3.7.1 Introduction

Research involves collecting data from people and about people (Creswell, 2007:132). Therefore, various ethical measures have to be considered. Leedy and Ormrod (2010:101) suggest that whenever research involves humans or animals, there is a significant need to apply a certain level of mindfulness to ethical implications of what the researcher is proposing. Writing about the anticipated ethical implications is crucial in making an argument for a study as well as being an important topic in the format for a proposal (Creswell, 2007:132). (Walliman, 2010:43) and (Gravetter & Forzano, 2012:102) observe two aspects regarding ethical implications in research, namely (a) the researcher's values relating to honesty, candor and personal integrity, and (b) the researcher's treatment of participants regarding their consent, confidentiality, anonymity and their courtesy. Research ethics has to do with the responsibilities of the researcher to be honest and respectful to all individuals who are affected by their study (Gravetter & Forzano, 2012:101).

The study was guided by research ethics obtained from (Gravetter & Forzano, 2012:101), namely protection from harm, privacy and confidentiality, informed consent and honesty with colleagues in the field.

The University of Johannesburg (UJ) Faculty Research Committee and Higher Degrees Committee approved the ethics of the study as part of the proposal approval process.

3.7.2 Protection from harm

The investigator is obligated to protect participants from any harm, both physical and psychological (Gravetter & Forzano, 2012:106). The researcher did not expose participants to any form of harm and proceeded with mindfulness not to offend participants. The researcher was respectful and sympathetic at all times during interaction with all participants.

3.7.3 Privacy and confidentiality

Confidentiality is the practice of keeping strictly secret and private the information obtained from participants during a study (Gravetter & Forzano, 2012:115). Any researcher conducting research that involves humans should respect the participants' right to privacy (Leedy & Ormrod, 2010:102).The researcher ensured that participants

and restaurants remained anonymous. To this effect it was not required to identify the participants and the restaurants in which they worked.

3.7.4   Informed consent

The general idea of "informed consent" is that human participants are to be given complete information regarding the research and their roles in the study before they agree to take part (Gravetter & Forzano, 2012:109). Permission to conduct the study and gain access to the various restaurants was obtained from each restaurant manager prior to commencing the study. The researcher engaged with management with regards to the research and its aims. Thereafter the waitering staff were briefed about the study and they were made aware of the fact that participating in the study was completely voluntary.

3.7.5   Honesty with colleagues in the field

Participants should be afforded the opportunity to obtain the appropriate information regarding the nature of the results and conclusions of the study (Gravetter & Forzano, 2012:108). Researchers should also be aware that they may have to take reasonable measures to correct any misconceptions that participants may have of which the researcher was aware (Gravetter & Forzano, 2012:109). The researcher must report the results of the study honestly, without misrepresenting what was done nor will the researcher mislead others with regards to the nature of the results.

3.8   SUMMARY

This chapter explained the procedures that were followed to address the research questions and the research design clarified the survey method of collecting data to answer the research questions. The survey method was of a quantitative nature. The methodology of this study was explained. The chapter outlined the theoretical concepts observed in the study and the measurement of concepts as described in the questionnaires. Further, the chapter expanded on the reliability, validity and feasibility of the study and discussed the sampling techniques and the methods of data collection adopted in the study.

The chapter concluded with the ethical considerations that were observed in this study.

Chapter 4 following presents the findings of the research.

CHAPTER 4
RESULTS

4.1   INTRODUCTION

This chapter presents the results of the study. The results were obtained from two sample groups, namely managers and waitrons. The chapter commences with the response rate for the study, followed by the demographic profiles of respondents, which are expressed in frequencies (n) and percentages (%).

Custom tables present the percentage (%), mean (M) and standard deviation (SD) regarding the availability of healthy menu items, knowledge and training with regards to healthy menu items and challenges related to the incorporation of healthy menu items and the perceived image of a restaurant the offers healthy menu items.

Cross-tabulations and Chi-square tests demonstrate the association of responses between highest level of education and familiarity with low-kilojoule meals, and years worked in current job/position and familiarity with low-kilojoule meals. The association between the availability of healthy menu items and how well the industry has yielded to trends related to healthy eating preferences, was measured.

The chapter concludes by describing the value of the Cronbach's alpha test in determining reliability of results as presented in the discussion of statistical methods of analysis.

4.2   RESPONSE RATE

As previously stated, the study aimed to collect data from 230 participants. However, 15 individuals declined to participate, leaving 215 respondents. Of the 215 respondents, 11 questionnaires were returned incomplete and 204 questionnaires were usable for analysis. Therefore, the realisation rate of the study was 88.70%.

The researcher conducted the data collection and therefore was in a position to observe and obtain first-hand information from participants who were reluctant to participate in the study.

Reasons for reluctance to participate varied from:

i)   respondents fearing that their identity would be revealed, despite being assured of anonymity;

ii)   concern that the study was criticizing the industry;

iii)   the questionnaire was too long and they did not have time to complete it as they were busy on shift;

iv)   some respondents were hotel school students busy with their training/Work-Integrated Learning (WIL) and were not comfortable with completing the questionnaire, and

v)   others were outsourced or part-time staff/waitrons and therefore felt they would not be able to adequately complete the questionnaire.

4.3   DEMOGRAPHIC PROFILE OF RESPONDENTS

Demographic information questions were contained in Section A of the questionnaires for both managers and waitrons (see Appendix C and Appendix D on pages 112 and 116 respectively).The variables that were measured were age, gender, highest level of education, number of years worked in the current job/position, weather they were familiar with the term "low kilojoule" and whether they were aware that SA was ranked third in the Worlds Obesity Ranking in 2011 report.

For each demographic variable, the frequency count (n) and percentage (%) are provided. Table 4.1 below illustrates the demographic variables obtained from data of managers who participated in the study.

Table 4.1: Demographic variables of managers

Demographic variables		Frequency (n)	Percentage (%)
Age group	18 – 28 years	16	22.9
	29 – 39 years	33	47.1
	40 – 50 years	18	25.7
	51 and older	3	4.3
	TOTAL	**70**	**100**
Highest educational qualification	Grade 11 or lower (Std 9 or lower)	0	0
	Grade 12	7	10.0
	Post-Matric diploma or certificate	48	68.6
	Bachelor degree(s)	10	14.3
	Post-graduate degree(s)	5	7.1
	TOTAL	**70**	**100**
Years worked in current job/position	Less than 1 year	11	15.7
	2 – 5 years	27	38.6
	6 – 10 years	21	30.0
	11 years and more	11	15.7
	TOTAL	**70**	**100**
Familiar with low-calorie meals	No	3	4.3
	Yes	67	95.7
	TOTAL	**70**	**100**
Aware that SA ranked 3rd on World Obesity Ranking in 2011 report	Yes	36	51.4
	No	34	48.6
	TOTAL	**70**	**100**

Source: Researcher's own construct

Age

Table 4.1 shows that the majority of managers were between the ages of 29 – 39, 47.1% (n=33). The second highest grouping was the 40 – 50 year age group, 25.7% (n=18). The balance of participants were in the 18 – 28 year age group, 22.9% (n=16), while the smallest group was the 51 years and older category, representing 5.3% (n=3).

Highest level of education

The majority of managers had a post-Matric diploma or certificate, 68.6% (n=48). Only 14.3% (n=10) of managers had a Bachelor's degree, while of the rest 10% (n=7) held a Matric certificate/Grade 12 as their highest level of education and the smallest group

of 7.1% (n=5) had a post-graduate degree. None of the participants had only achieved Grade 11 (Std 9) as their highest level of education.

Years worked in current position

Most of the manager participants had held the same position or worked in their current job for 2 – 5 years, 38.6% (n=27). The grouping of 6 – 10 years indicated 30.0% (n=21). The categories of less than one year, or for 11 or more years, each reflected 15.7% (n=11).

Familiar with low-calorie meals

Table 4.1 indicates that an overwhelming 95.7% (n=67) of the manager participants were familiar with the term "low-calorie/low-kilojoule" meals. It was to be expected that restaurant managers would be familiar with the term "low calorie" meals, as they are responsible for menu planning.

Awareness of World Obesity Ranking in 2011 report

Table 4.1 reflects that the majority of 54.1% (n=36) managers were aware of the obesity rankings. However, the balance of 48.6% (n=34) stated that they were not aware of the obesity rankings.

Table 4.2 below depicts the demographic variables obtained from data of waitrons who participated in the study

Table 4.2: Demographic variables of waitrons

Demographic variables		Frequency (n)	Percentage (%)
Age group	18 – 28 years	33	24.6
	29 – 39 years	59	44.0
	40 – 50 years	36	26.9
	51 and older	6	4.5
	TOTAL	**134**	**100**
Highest educational qualification	Grade 11 or lower (Std 9 or lower)	0	0
	Grade 12	24	17.9
	Post-Matric diploma or certificate	72	53.7
	Bachelor degree(s)	32	23.9
	Post-graduate degree(s)	6	4.5
	TOTAL	**134**	**100**
Years worked in current job/position	Less than 1 year	36	26.9
	2 – 5 years	63	47.0
	6 – 10 years	28	20.9
	11 years and more	7	5.2
	TOTAL	**134**	**100**
Familiar with low-calorie meals	No	27	20.1
	Yes	107	79.9
	TOTAL	**134**	**100**
Aware that SA ranked 3rd on World Obesity Ranking in 2011 report	Yes	80	59.7
	No	54	40.3
	TOTAL	**134**	**100**

Source: Researcher's own construct

Age

Table 4.2 shows that the majority of waitrons were between the ages of 29 – 39 years, 44% (n=59). Little difference is recorded between the age group of 40 – 50 years, being 26.9% (n=36), and the 18 – 28 years group which reflects 24.6% (n=33). Only a few waitrons fell into the 51 years and older grouping, 4.5% (n=5).

Highest level of educational

Results illustrated in Table 4.2 show that a significant number of waitrons had obtained a high school qualification as the highest level of education. This is revealed in that 53.7% (n=72) had obtained a post-Matric diploma or a certificate, while 17.9% (n=24) had a Grade 12 certificate as their highest level of education. Combined, 71.6% (n=96) of the waitrons had high school qualification as their highest level of education. Of the balance of respondents, 23.9% (n=32) had obtained a Bachelors degree and only 4.5%

(n=6) had obtained a post-graduate degree. None of the participants had only achieved Grade 11 (Std 9) as their highest level of education.

Years worked in current position

The majority of waitrons had not worked in their current job/position for longer than 5 years. Results show that 47% (n=63) waitrons had worked in their current job/position for 2 – 5 years, while 26.9% (n=36) had worked for a year or less. The balance of 20.9% (n=28) had worked in the same position for 6 – 10 years, and 5.2% (n=7) had been in the same position for 11 years or more.

Familiar with low-calorie meals

Table 4.2 shows that 79.9% (n=107) of the waitron participants were familiar with low calorie/kilojoule meals and the balance of 20.1% (n=27) were not familiar with the term.

Awareness of World Obesity Ranking in 2011 report

It is apparent from Table 4.2 that 40.3% (n=54) of the waitrons indicated that they were aware that SA had been ranked third on the World Obesity Rankings report of 2011, but the majority of 59.7% (n=80) were not aware of this statistic.

4.4   CUSTOM TABLES

In this section, the report uses mean (M), standard deviation (SD) and percentage (%) to describe the findings from the sample groups of managers and waitrons. To measure M, a 5-point Likert scale was used as a point of reference for each of the below illustrated tables.

Table 4.3: Menu offering and availability of healthy alternatives – Managers

Menu offering & availability of healthy alternatives		Strongly disagree/ disagree	Neutral	Strongly agree/agree	M	SD
The menu offers a variety of meal options that have lean meats, vegetables and fruits prepared with minimal fat	n	7	18	45	3.77	.920
	%	10.0%	25.7%	64.3%		
Management encourages staff to promote (upsell) menu items that are healthier	n	20	35	15	2.99	.825
	%	28.6%	50.0%	21.4%		
The menu caters for guests who are health conscious/prefer low-kilojoule meals/on diet	n	9	20	41	3.61	.906
	%	12.9%	28.5%	58.6%		
The menu changes according to seasonal availability of fresh produce (fruit and veg)	n	16	20	34	3.3	1.010
	%	22.8%	28.6%	48.6%		
Healthier meal items are labelled on the menu	n	48	10	12	2.31	1.084
	%	68.5%	14.3%	17.2%		
Overall availability of healthy alternatives					3.2	.949

Source: Researcher's own construct

The mean for the manager construct measuring the availability of healthy alternative meals on the menu ranged between M=2.99 and M=3.77, while the standard deviation ranged between SD=.825 and SD=1.010.

From Table 4.3 it can be seen that 64.3% of managers agreed with the notion that their menus offered a variety of meal options served with lean meats, vegetables and fruit. This can be seen in the statement that obtained the highest level of agreement with a mean (M) of 3.77. Furthermore, with a mean (M) of 3.61, 58.6% of managers also agreed that their menus catered for guests who were health conscious and preferred low-kilojoule meals. Notably, only 27.4% of managers agreed that they encouraged waitrons to promote menu items that were healthier, therefore this statement obtained a low level of agreement, with a mean (M) of 2.99. The overall mean score for this construct was M=3.2, which reveals that manager respondents neither agreed nor disagreed with the statements.

Table 4.4: Menu offering and availability of healthy alternatives – Waitrons

Menu offering & availability of healthy alternatives		Strongly disagree/ disagree	Neutral	Strongly agree/agree	M	SD
The menu offers a variety of meal options that have lean meats, vegetables and fruits prepared with minimal fat	n	9	36	89	3.72	.762
	%	6.7%	26.9%	66.4%		
Management encourages staff to promote (upsell) menu items that are healthier	n	36	47	51	3.18	1.047
	%	26.9%	35.1%	38.1%		
The menu caters for guests who are health conscious/prefer low-kilojoule meals/on diet	n	21	47	66	3.40	.935
	%	15.7%	31.5%	49.3%		
The menu changes according to seasonal availability of fresh produce (fruit and veg)	n	30	47	56	3.32	.955
	%	22.4%	31.5%	42.5%		
Healthier meal items are labelled on the menu	n	78	31	5	2.41	1.112
	%	58.2%	23.1%	18.6%		
Overall availability of healthy alternatives					3.4	.962

Source: Researcher's own construct

The mean for the waitron construct measuring the availability of healthy alternative meals on the menu ranged between M=3.32 and M=3.72, while the standard deviation ranged between SD=.762 and SD=1.047.

It can be deduced from Table 4.4 that 66.4% of waitrons agreed with the notion that menus at their restaurants offer a variety of meal options that have lean meats, vegetables and fruits prepared with minimal fat. Therefore, that statement obtained the highest level of agreement with a mean (M) of 3.72. Moreover, 49.3% (M=3.40) of waitrons agreed that their menus catered for guests who were health conscious and prefer low-kilojoule meals. While the statement that waitrons agreed the least with was that their managers encourage them to promote (upsell) menu items that are healthier, with a low M=3.18, as only 38.1% of waitrons agreed with this statement. The overall mean score for this construct was M=3.4, which reflects that waitron respondents neither agreed nor disagreed with the statements.

Table 4.5: Knowledge and training regarding menu changes and availability of healthy alternatives – Managers

Knowledge and training regarding menu changes and availability of healthy alternatives		Strongly disagree/ disagree	Neutral	Strongly agree/agree	M	SD
Management briefs staff after new menu item have been added to the menu	n	6	9	55	4.00	.885
	%	8.6%	12.9%	78.6%		
Staff is knowledgeable on the cooking methods used in the kitchen	n	7	11	52	3.81	.889
	%	10%	15.7%	74.3%		
There is a demand for healthier/low-kilojoule meals	n	1	15	45	3.64	.948
	%	14.3%	21.4%	64.3%		
Restaurant food is fattier than home cooked meals	n	6	30	34	3.51	.864
	%	8.5%	42.9%	48.6%		
We provide training/information with regards to healthy, low-kilojoule (low fat) meals	n	33	23	14	2.77	.871
	%	47.1%	32.9%	20%		
I am aware of seasonal availability of fruits and vegetables on menu	n	7	26	37	3.60	.891
	%	10.0%	37.2%	52.8%		
Staff is knowledgeable on healthy, low-kilojoule (low fat) meals	n	17	31	22	3.10	.903
	%	24.3%	44.3%	31.4%		
Overall					3.49	.893

Source: Researcher's own construct

Table 4.5 above reflects that the mean for this construct for managers ranged between M=2.77 and M=4.00, while the standard deviation ranged between SD=.864 and SD=.948.

As shown in Table 4.5, 78.6% of managers agreed that they do brief staff after new menu items have been added to the menu. This statement obtained a significantly high mean (M) of 4.00. Moreover, 74.3% of managers agreed that staff are knowledgeable on the cooking methods used in the kitchen and this statement obtained a high mean (M) of 3.81. Managers also agreed that there is a demand for healthier/low-kilojoule meals, with a mean (M) of 3.64 as 64.3% agreed with this statement. Notably, 48.6% of managers agreed that restaurant food is fattier than home cooked meals, reflecting a mean (M) of 3.51. Finally, it is clear that managers did not agree that staff were knowledgeable on healthy, low-kilojoule (low fat) meals as only 31.4% agreed with the statement. The statement that management least agreed with was that they provide training/information on healthy, low-kilojoule (low fat) meals with a low mean (M) of 2.77. Therefore, overall mean for this construct was M=3.49 with standard deviation of SD=.893 for managers.

Table 4.6: Knowledge and training on menu changes and availability of healthy alternatives – Waitrons

Knowledge and training on menu changes and availability of healthy alternatives		Strongly disagree/ disagree	Neutral	Strongly agree/ agree	M	SD
Management briefs staff after new menu item have been added to the menu	n	17	11	109	3.96	.988
	%	12.7%	8.2%	79.1%		
Staff is knowledgeable on the cooking methods used in the kitchen	n	17	39	78	3.60	.966
	%	12.6%	29.1%	58.2%		
There is a demand for healthier/low-kilojoule meals	n	11	41	82	3.78	.968
	%	8.2%	30.6%	61.2%		
Restaurant food is fattier than home cooked meals	n	28	39	67	3.49	1.115
	%	20.9%	29.1%	50%		
We provide training/information with regards to healthy, low-kilojoule (low fat) meals	n	52	49	33	2.83	.938
	%	38.8%	36.6%	24.6%		
I am aware of seasonal availability of fruits and vegetables on menu	n	26	38	70	3.40	.982
	%	19.4%	28.4%	52.2%		
Staff is knowledgeable on healthy, low-kilojoule (low fat) meals	n	28	54	52	3.19	.997
	%	20.9%	40.3%	38.8%		
Overall					3.46	.993

Source: Researcher's own construct

Table 4.6 indicates the mean for this construct ranged between and M=2.83 and M=3.96, while the standard deviation ranged between SD=.938 and SD=1.115 for waitrons.

As seen in Table 4.6, waitrons' highest level (79.1%) of agreement was that their managers briefed them after new menu item had been added to the menu, which scored a significant mean of 3.96. Moreover, 61.2% of waitrons agreed that they had noted a demand for healthier/low-kilojoule meals, this statement scored a mean of 3.78. In the same vein, 58.2% of waitrons agreed that they were knowledgeable on the cooking methods used in the kitchen as this statement scored a mean of 3.60. Some 50% of waitrons agreed that restaurant food is fattier than home-cooked meals and this statement scored a mean of 3.49. On the contrary, only 38.8% of waitrons agreed that they were knowledgeable on healthy, low-kilojoule (low fat) meals, because this statement scored a low mean of 3.19. Finally, only 26.4% of waitrons had agreed that they were provided with training/information with regards to healthy, low-kilojoule (low fat) meals, therefore this statement scored a low mean of 2.83.

The overall mean for this construct was M=3.46 with a standard deviation of SD=.993.

Table 4.7: Perceived or experienced challenges regarding incorporating healthy alternatives – Managers

Knowledge and training regarding menu changes and availability of healthy alternatives		Strongly disagree/ disagree	Neutral	Strongly agree/ agree	M	SD
We had limited knowledge on healthy meal composition or requirements	n	28	23	19	2.89	.834
	%	40.0%	32.9%	27.1%		
There was not much demand for healthy meals in the past	n	4	9	57	4.06	.866
	%	5.7%	12.9%	81.4%		
Ingredients required for healthy meals are expensive	n	7	28	35	3.47	.775
	%	10.0%	40.0%	50.0%		
Healthy meals require more effort and thought in preparation	n	15	31	24	3.13	.850
	%	21.5%	44.3%	34.3%		
Consumers do not order or prefer healthy alternatives at our establishment	n	32	23	15	2.73	.883
	%	45.7%	32.9%	21.4%		
We had to up price healthy meals (ingredients are expensive)	n	12	28	30	3.31	.826
	%	17.1%	40.0%	42.8%		
We needed something to guide us, that is the set minimum standards	n	11	44	15	3.04	.647
	%	15.7%	62.9%	21.4%		
Seasonal availability of fruits and vegetables would force us to amend our menu often	n	7	27	36	3.47	.756
	%	10.0%	38.6%	51.4%		
We executed our healthy meals with ease	n	6	40	24	3.27	.635
	%	08.6%	57.1%	34.3%		
Overall					3.26	.786

Source: Researcher's own construct

As seen in Table 4.7, the mean for this construct ranged between M=2.89 and M=4.06, while the standard deviation ranged between SD=.635 and SD=.883.

As part of the experienced or perceived challenges regarding the incorporation of healthy alternatives on the menu, Table 4.7 reflects that 81.4% of managers agreed that there had not been much demand for healthy meals in the past and this statement scored a high mean of M=4.06. Likewise, 51.4% of managers agreed that one of the challenges was that the seasonal availability of fruits and vegetables would force them to amend their menu often and this statement obtained a mean of M=3.47. Managers (50%) also agreed that ingredients required for healthy meals were expensive, with this statement scoring a mean of M=3.47. On the contrary, only 34.3% of managers agreed that the preparation of healthy meals required more effort and thought in preparation. Managers did not seem to agree with the notion that they needed guidance, such as the set minimum standards to assist in facilitating the incorporation of healthy alternatives, therefore a low mean of M=3.04 was obtained.

Finally, managers did not agree that they had limited knowledge of healthy meal composition or requirements and a low mean of M=2.87 was obtained. It is clear from the table that managers disagreed that consumers did not order or prefer healthy alternatives, as a mean of M=2.73 was obtained for this construct.

The overall mean for this construct was M=3.26 with a standard deviation of SD=.786.

Table 4.8: Perception of managers on how healthy meals benefit restaurant

Perception of managers on how healthy meals benefit restaurant		Strongly disagree/ disagree	Neutral	Strongly agree/ agree	M	SD
It has no bearing on the restaurant's image	n	43	21	6	**2.20**	**.942**
	%	61.4%	30.0%	8.6%		
Improve restaurant image	n	0	23	47	**3.81**	**.666**
	%	0.0%	32.9%	67.2%		
Maintain patronage	n	3	23	44	**3.71**	**.745**
	%	4.3%	32.9%	62.9%		
Attract new market	n	3	14	53	**4.01**	**.825**
	%	4.3%	20.0%	75.7%		
Overall					**3.43**	**.795**

Source: Researcher's own construct

The mean for the managers' construct in Table 4.8 above ranged between M=2.20 and M=4.01 and the standard deviation ranged between SD=.666 and SD=.942.

As seen above, 75.7% of managers agreed that the presence of healthy meals on restaurant menus would attract a new market and this statement obtained the highest mean of M=4.01, while 67.2% of managers agreed with the statement that the presence of healthy menu items would improve restaurant image, reflecting a mean of M=3.81. Moreover, 62.9% agreed that healthy menu items would maintain guest patronage and achieved a mean for this statement of M=3.71. The remaining 8.6% of managers did not agree that healthy menu items would not have any bearing on the restaurant's image, indicating a low mean of M=2.20.

The overall mean for this construct for managers was M=3.43 with a standard deviation of SD=.795.

Table 4.9: Perceptions of waitrons on how healthy meals benefit restaurant

Perception of waitrons on how healthy meals benefit restaurant		Strongly disagree/ disagree	Neutral	Strongly agree/ agree	M	SD
It has no bearing on the restaurant's image	n	97	15	22	2.10	1.152
	%	72.4%	11.2%	16.4%		
Improve restaurant image	n	4	25	105	4.10	.831
	%	2.9%	18.7%	78.4%		
Maintain patronage	n	3	12	119	4.25	.712
	%	2.2%	9.0%	88.9%		
Attract new market	n	5	24	105	4.17	.854
	%	3.7%	17.9%	78.3%		
Overall					3.66	.887

Source: Researcher's own construct

Table 4.9 indicates a mean for this construct for waitrons ranging between M=2.10 and M=4.25 and a standard deviation ranging between SD=.712 and SD=1.152.

Table 4.9 further illustrates that a significant 88.9% of waitrons agreed that healthy meals on the menus would maintain guest patronage and this statement obtained a mean of M=4.25. Another significantly high response was 78.3% of who waitrons agreed that healthy meals on the menu would attract a new market and obtained a mean of M=4.17. A high 78.4% of waitrons agreed that these meals would improve a restaurant's image. It is clear that waitrons disagreed with the notion that these meals would have no bearing on the restaurant's image. This is revealed in that a very low mean of M=2.10 which only represents 16.4% of the sample.

The overall mean for this construct was M=3.66 with a standard deviation of SD=.887.

4.5   CROSS-TABULATION WITH CHI-SQUARE ANALYSIS

The Chi-square test for independence, which is a non-pragmatic statistic, is used to determine whether two categorical variables are related (Pallant, 2011:287; Morgan, Reichert & Harrison, 2016:36). It also compares the frequency of cases in the various categories of one variable across the different variables of another (Pallant, 2011:287). The Chi-square statistic is the primary statistic used for testing the statistical significance of the cross-tabulation table (Cross-tabulation analysis: Qualtrics, 2011: online).

For the Pearson Chi-square (P-value) to be statistically significant, its value must be .05 or smaller and if it exceeds .05 it is not significant (Pallant, 2005:288). The Cramer's

V, which is the absolute measure of association, is often interpreted as effect size, varying from </=.01 'small effect', .01 to .30 'medium/moderate effect' to .30 to .50 'larger effect' (Pallant, 2011:220).

4.5.1 Knowledge of low kilojoule meals on the highest level of education among managers and waitrons

The purpose of the below tests was to measure whether there was an association between the level of education among managers, and whether they were knowledgeable about low calorie meals, and also to test the significance of the correlation and the effect thereof.

Table 4.10: Chi square tests for independence: Managers

Chi-square tests			
	Value	df	Asymptotic significance (2-sided)
Pearson Chi-square	11.304a	3	.010
Likelihood ratio	6.672	3	.083
Linear-by-linear association	4.543	1	.033
N of valid cases	70		
a. 5 cells (62.5%) have expected count less than 5. The minimum expected count is .21.			

Source: Researcher's own construct

It is apparent from Table 4.10 above that a statistically significant p-value of .010 was obtained. This affirms that there is a positive association between the "level of education" and "knowledge on low kilojoule meals" among managers who participated in the study.

Table 4.11: Symmetric measures: Managers

Symmetric measures			
		Value	Approximate significance
Nominal by nominal	Phi	.402	.010
	Cramer's V	.402	.010
N of valid cases		70	

Source: Researcher's own construct

From Table 4.11 above it can be deduced that the measure used to detect the magnitude of the association between the "level of education among" and "knowledge on low kilojoule meals" was moderate. This is because of the Cramer's V value of .402.

Table 4.12: Chi square tests for independence: Waitrons

Chi-square tests			
	Value	df	Asymptotic significance (2-sided)
Pearson Chi-square	13.924[a]	3	.003
Likelihood ratio	21.008	3	.000
Linear-by-linear association	11.592	1	.001
N of valid cases	134		
a. 3 cells (37.5%) have expected count less than 5. The minimum expected count is 1.21.			

Source: Researcher's own construct

As seen in Table 4.12 above, a statistically significant p-value of .003 was obtained. This affirms that there is a positive association between the "level of education" and "knowledge on low kilojoule meals" among waitrons who participated in the study.

Table 4.13: Symmetric measures: Waitrons

Symmetric measures			
		Value	Approximate Significance
Nominal by nominal	Phi	.322	.003
	Cramer's V	.322	.003
N of valid cases		134	

Source: Researcher's own construct

From Table 4.13 it is clear that the Cramer's V score of .322 used to measure the magnitude of the association between the "level of education" and "knowledge on low kilojoule meals" among waitrons was moderate.

4.5.2 How has the food service industry adapted to consumer eating habits and the degree of availability of healthy meal options on the menu among managers

The purpose of the below test was to measure whether there was an association between these two constructs.

Table 4.14: Chi square tests for independence: Managers

Chi-square tests			
	Value	df	Asymptotic significance (2-sided)
Pearson Chi-square	21.023[a]	12	.050
Likelihood ratio	22.616	12	.031
Linear-by-linear association	5.643	1	.018
N of valid cases	70		
a. 15 cells (75.0%) have expected count less than 5. The minimum expected count is .30.			

Source: Researcher's own construct

Table 4.14 above presents results of the Chi-square test performed to test the significance of the association between "how has the food service industry adapted to consumer eating habits" and "the degree of availability of healthy meal options on the menu". A statistically significant p-value of .050 was obtained which affirms that there is a positive association these two constructs.

Table 4.15: Symmetric measures: Managers

Symmetric measures			
		Value	Approximate significance
Nominal by nominal	Phi	.548	.050
	Cramer's V	**.316**	**.050**
N of valid cases		70	

Source: Researcher's own construct

It is seen in Table 4.15 above that a Cramer's V value of .316 was obtained. This is used to establish the magnitude of the association between "how has the food service industry adapted to consumer eating habits" and "the degree of availability of healthy meal options on the menu". Therefore, the association is perceived to be of a moderate nature.

4.5.3 How has the food service industry adapted to consumer eating habits and the menu caters for guests who are health conscious/prefer low-kilojoule meals/on diet

The purpose of the below test was to measure whether there was an association between these two constructs.

Table 4.16: Chi square tests for independence

Chi-square tests			
	Value	df	Asymptotic significance (2-sided)
Pearson Chi-square	**13.940ᵃ**	**12**	**.305**
Likelihood ratio	15.295	12	.226
Linear-by-linear association	3.174	1	.075
N of valid cases	70		
a. 15 cells (75.0%) have expected count less than 5. The minimum expected count is .39.			

Source: Researcher's own construct

Table 4.16 above shows that a statistically insignificant p-value of .305 was obtained. This finding shows that there is a poor relationship between "the menu caters for guests who are health conscious/prefer low-kilojoule meals" and "how has the food service industry adapted to consumer eating habits".

Table 4.17: Symmetric measures

Symmetric measures		Value	Approximate significance
Nominal by nominal	Phi	.446	.305
	Cramer's V	.258	.305
N of valid cases		70	

Source: Researcher's own construct

Table 4.17 above indicates a Cramer's V value of .258, which was used to measure the magnitude of the association between "the menus caters for guests who are health conscious/prefer low-kilojoule meals" and "how has the food service industry adapted to consumer eating habits". As such, it is clear that the association is small.

4.6 FREQUENCIES AND PERCENTAGES

Table 4.18: Measuring the how well the food service industry had adapted to consumer eating out habits related to healthy OH eating

How effective the food service industry is in heeding consumers' healthy eating habits	Frequency (n)		Percentage (%)	
	Managers	Waitrons	Managers	Waitrons
Very poor	4	4	5.7	3.0
Poor	6	8	8.6	6.0
Average	37	68	52.9	50.7
Good	20	46	28.6	34.3
Very good	3	8	4.3	6.0
TOTAL	70	134	100.0	100.0

Source: Researcher's own construct

Table 4.18 above provides an overview of the findings on how well the food service industry had adapted to consumer eating out habits related to healthy OH eating. Main findings reveal that 52.9% (n=37) and 50.7% (n=68) of managers and waitrons respectively affirm that the food service industry is not entirely effective in how it is responding to consumer eating out trends regarding healthy preferences. The table also presents that 28.6% (n=20) of managers and 34.3% (n=46) waitrons indicated that the industry's response regarding the demand for healthy is good. From the findings it may be rational to suggest that more effort from the industry is required.

Table 4.19: Responses regarding the incorporation of healthy or low fat/kilojoule meal items

During the menu planning process, do you consider incorporating healthy or low fat/kilojoule meal items?		
Responses	**Frequency (n)**	**Percentage (%)**
No	21	30.0
Yes	49	70.0
Total	70	100

Source: Researcher's own construct

Table 4.19 above reveals that managers showed a significant willingness to incorporate healthy alternatives in restaurant menus. This is shown in that 70% (n=49) of the managers stated that they had considered the incorporation of healthy meal items to their menus.

Table 4.20: Factors influencing the decisions to incorporate healthy or low fat/kilojoule meal items

Statement		N/A	Not important	Moderately important	Important	Most important
Consumer demands (profit/sales margin)	%	18.6	0	7.1	32.9	41.4
Ease of cooking (time it takes to prepare the meal)	%	21.4	5.7	28.6	28.6	15.7
Food safety	%	21.4	5.7	15.7	31.4	25.7
Seasonal availability of fresh produce	%	18.6	0	17.1	41.4	22.9
Costs of ingredients	%	18.6	0	5.7	30.0	45.7
Public health concern (prevalence of obesity)	%	21.4	4.3	28.6	28.6	17.1
Government requirements (with possibility of incentives for the establishment in some way)	%	31.4	12.9	28.6	21.4	5.7

Source: Researcher's own construct

From Table 4.20 above it can be deduced that the most important factor that influences restaurant managers' decisions regarding the incorporation of healthy meal items is the "cost of ingredients" as 45.7% of the sample rated this construct as most important, presumably because the general concern may be that the cost of ingredients (fresh produce) may be expensive when they are not in season. Following this, 41.4% of the sample considered "consumer demands (profit/sales margin)" to be very important. This may be attributed to the fact that a trend regarding individuals demanding meals

that are lower in kilojoules/fat, artificial sugars, refined carbohydrates as well as trans fats has been observed (Hwang & Cranage, 2010:69).

It is alarming to note that "public health concern (prevalence of obesity)" is not yet a priority as only 5.7% of respondents indicated that it was most important to them.

Below is the observed order of rank, as presented in Table 4.20, regarding the most important factors influencing restaurant managers' decisions on the incorporation of healthy meals in restaurants?

- Costs of ingredients

- Consumer demands (profit/sales margin)

- Food safety

- Seasonal availability of fresh produce

- Public health concern (prevalence of obesity)

- Ease of cooking (time it takes to prepare the meal)

- Government requirements (with possibility of incentives for the establishment in some way)

Table 4.21: Responses on identification of the meal with lowest fat/kilojoules

Select a meal that is lowest in fat/kilojoule amongst these	Frequency (n)	Percent (%)
Grilled hake with steamed veggies	94	70.1
Deep fried chicken schnitzel with steamed veggies	7	5.2
Fried battered hake with fries	4	3.0
Grilled beef fillet with mixed veggies (sautéed)	29	21.6
Total	134	100.0

Source: Researcher's own construct

Table 4.21 above reflects waitrons' abilities to identify the meal that contained the lowest amount of fat/kilojoules and the healthiest meal in terms of lowest caloric/kilojoule content. The correct meal was "Grilled hake with steamed veggies" and a significant 70.1% (n=94) of respondents were able to successfully select the meal that was lowest in fat/kilojoules.

Table 4.22: Has a guest asked you to assist them select a low fat/kilojoule or a healthier menu item?

Has a guest asked you to assist them select a low fat/kilojoule or a healthier menu item recently?	Frequency (n)	Percentage (%)
No	41	30.6
Yes	93	69.4
TOTAL	**134**	**100.0**

Source: Researcher's own construct

Table 4.22 reflects that 69.4% (n=93) of waitrons confirmed that they had been asked by guests to assist in selecting a healthy or low kilojoule meal. These findings indicate that there is indeed an increase in healthier preferences even when individuals consume meals OH.

Table 4.23: If yes, how would you rate your level of assistance to the guest?

How would you rate your level of assistance to the guest?	Frequency (n)	Percentage (%)
Very poor	3	3.2
Poor	1	1.0
Average	41	44.1
Good	42	45.2
Very good	6	6.5
TOTAL	**93**	**100.0**

Source: Researcher's own construct

Waitrons that had experienced serving a guest who requested a healthier or low kilojoule meal were then asked to "rate" their level of assistance regarding their ability to assist a guest who requested such a meal. Table 4.23 above reflects that 44.1% (n=41) of the waitron respondents felt that their ability to serve guests with healthier meal request was average, 45.2% (n=42) felt they were good, while 6.5% (n=6) considered themselves as very good. Only 1.0% (n=1) and 3.2% (n=3) felt their ability to assist these guests was poor or very poor, respectively.

This is surprising as in Table 4.21, 70.1% (n=94) of respondents were able to successfully select the meal that was lowest in fat/kilojoules and was the healthiest. Therefore, it may be argued that perhaps due to lack of confidence in assisting guests with such requests, a much lower number of respondents were able to adequately assist with these requests. However 45.2% (n=42) believed their ability was good in terms of assisting guests who requested healthier alternatives on the menu.

4.7   RELIABILITY

Reliability is the degree to which the measure is consistent or trusty (Bhattacherjee, 2012:56). It is the dependability of the instrument of measure to deliver a certain unit provided that the construct remains unchanged (Leedy & Ormrod, 2010:28; Pallant, 2011:6). According to Bhattacherjee (2012:56), reliability denotes consistency but not accuracy. Reliability analysis fundamentally depends on three elements, being stability, internal reliability and consistency (Singh, 2007b:253; Morgan *et al.*, 2016:27). For the purpose of this study, the internal consistency reliability measure was employed, which refers to the degree to which the items that make up a scale "hang together", do they measure the same underlying concept (Pallant, 2005:90). One of the commonly used indicators of internal consistency is Cronbach's alpha coefficient test (Pallant, 2005:90; Morgan *et al.*, 2016:27). Researchers use Cronbach's alpha to test internal reliability which correlates performance on each item with an overall score (Singh, 2007a:78). Values range from 0 to 1, with higher values indicating significant reliability, the figure of 0.70 or more is usually treated as a "rule of thumb" to denote an accepted level of reliability (Pallant, 2011:6).

Table 4.24: Results from the Cronbach's alpha test for managers

Construct	Cronbach's alpha
Menu offering and availability of healthy alternatives	.658
Knowledge and training	.658
Criteria/factors that influence adding low-kilojoule items to the menu.	.952
Perceived or experienced challenges: incorporating healthy alternatives	.681
Perceptions: how healthy meals benefit restaurant image	.462

Source: Researcher's own construct

Table 4.24 above indicates moderate to high reliability coefficients were achieved for the reliability tests performed for the managers' tool of measure. The high alpha value of (α = .952) which was calculated for "criteria/factors that influence managers' decisions" indicates good internal consistency among the items. Moderate reliability coefficients were calculated for "Perceived/experienced challenges" (α =.681), "Menu offering and availability of healthy alternatives" and "Knowledge and training" (α = .658). The moderate reliability coefficients indicate fair consistency among the items.

Table 4.25: Results from the Cronbach's alpha test for waitrons

Construct	Cronbach's alpha
Menu offering and availability of healthy alternatives	.646
Knowledge and training	.524
Perceptions on how healthy meals benefit restaurant image	.653
Perceived or experienced challenge: Incorporated healthy items	.719

Source: Researcher's own construct

Table 4.25 above illustrates the Cronbach's alpha coefficient that were calculated reached moderate to high reliability coefficients. A high alpha value of (α = .719) was calculated for "Perceived or experienced challenges". The high reliability coefficient indicates good internal consistency among the items. The moderate reliability coefficients were calculated for "Staff perceptions" (α=.653) and "Menu offering and availability of healthy alternatives" (α=.646). The moderate reliability coefficients indicate fair consistency among the items.

4.8   SUMMARY

This chapter presented the main findings and results from the statistical analysis of the data.

The results were obtained from two respondent categories/groups, namely managers and waitrons. The chapter commenced with the response rate for the study. Thereafter the demographic profiles of respondents were delineated, being expressed in frequencies (n) and percentages (%).

The statistical methods of analysis adopted in the study were also presented in this chapter. Custom tables reflected the mean (M), standard deviation (SD) and percentage (%) regarding the availability of healthy menu items, knowledge and training with regards to healthy menu items, challenges related to the incorporation of healthy menu items and the perceived image of a restaurant the offers healthy menu items.   Cross-tabulations   and Chi-square tests were also illustrated, showing the association of responses between highest level of education and familiarity with low-kilojoule meals, years worked in current job/position and familiarity with to low-kilojoule meals, and measuring between the availability of healthy menu items and how well the industry has yielded to trends related to healthy eating preferences. Finally, the chapter concluded by describing the

value of the Cronbach's alpha test in determining reliability of results as presented in the discussion of statistical methods of analysis in this chapter.

The results were presented in the form of frequency counts (n) and percentages (%) as well as mean (M) and standard deviation (SD) scores, where applicable. These are presented in data table format, as data tables are convenient and assist in demonstrating and clarifying data (Leedy & Ormrod, 2014:41).

The following chapter, Chapter 5, discusses the main findings of the study.

CHAPTER 5

DISCUSSION OF MAIN FINDINGS

5.1   INTRODUCTION

This chapter presents the main findings emanating from the results of the study.

The chapter explains how the research objectives were achieved and research questions were answered. The chapter discusses the demographic variables of the respondents, followed by a discussion on results from the mean (M), standard deviation (SD) and percentage (%) regarding the availability of healthy menu items, knowledge and training with regards to healthy menu items, challenges related to the incorporation of healthy menu items and the perceived image of a restaurant that offers healthy menu items.

Thereafter follows a discussion of the main findings obtained from the Chi-square tests on the association between responses to highest level of education and familiarity with low-kilojoule meals, years worked in current job/position and familiarity with low-kilojoule meals, and measuring between the availability of healthy menu items and how well the industry has yielded to trends related to healthy eating preferences. Finally, the chapter concludes by discussing the frequencies on how effective the food service industry is in adapting to consumer eating out habits.

5.2   DEMOGRAPHIC VARIABLES OF RESPONDENTS

5.2.1   Age

Table 4.1 in Chapter 4 showed that 47.1% of manager participants were between the ages of 29 – 39 (n=33). According to Kaucic (2015: online), the average age of managers   in multi-units of the hospitality industry (including restaurant managers) range between 36 to 46 years but notable changes occurred between 2012 and 2015. Kaucic (2015: online) elaborates that the most significant change between 2012 and 2015 is the average age of managers in multi-units of the hospitality industry has decreased by three years, from 36 – 46 years to 33 – 43 years. This clearly aligns with the results of the current study as most managers were between 29 and 39 years of age. Marcus (2005: online) suggests that the average age of restaurant managers is 35.9 years. In light of Kaucic's (2015: online) statement that the average age of multi-unit has

decreased by three years, the research assumes that the average age of 36 years reported by Marcus (2015: online) has also decreased by three years.

The demographic data on waitrons who participated in the study were similar to the results of the managers and Table 4.2 showed that the majority of waitrons are between the ages of 29 – 39 years (n=59; 44%). It is also noted that there is little difference in the counts between 40 – 50 years (n=36; 26.9%) and 18 – 28 years (n= 33; 24.6%).

5.2.2   Highest level of education

Table 4.1 in Chapter 4 showed that a significant number of managers hold a post-Matric diploma or certificate (68.6%; n=48), while only 14.3% (n=10) of managers indicated that they hold a Bachelor's degree. Zannierah, Hall and Ballantine (2012:202) report that the majority of the managers who participated in their study held a diploma, followed by those with a Bachelor's degree. This correlates with the results of the current study, as a significant number of managers held a diploma, followed by those with a Bachelor's degree. This is in line with Student Scholarship (2016: online) which believes that the minimum education level to be employed is a Matric/Grade 12 qualification but that to be a restaurant manager a post-Matric diploma is required. It is also documented that new entrants in the industry hold a Bachelor's degree. Some level of higher education learning is vital for a restaurant manager, as the position may require the manager to be a critical thinker and offer strategic solutions to solve complex problems (Kokemuller, 2015: online).

Table 4.2 in Chapter 4 illustrated that the majority of waitrons had a high school qualification as their highest level of education; 53.7% (n=72) had a Matric certificate while 17.9% (n=24) had Grade 12. Combined, 71.6% (n=96) of waitrons had high school qualification as the highest level of education, while 23.9% (n=32) had obtained a post-Matric certificate or diploma.

5.2.3   Years worked in current position

Table 4.1 indicated that some manager participants had held the same position or worked in their current job for 2 – 5 years (38.6%; n=27) and 6 – 10 years (30.0%; n=21). Marcus (2005: online) states that the average number of years which a restaurant manager stays in the same position is estimated to be 7.3 years.

5.2.4　Familiar with low-calorie meals

Table 4.1 further showed that 95.7% (n=67) of the managers who participated in the study were familiar with the term "low-calorie/low-kilojoule" meals. This is not surprising as restaurant managers are responsible or partially responsible for menu planning, requiring manager to be familiar with various types of meals. Most major restaurant chain managers became highly aware of the need to serve low-calorie/kilojoule meals due to the creators of the Atkins Diet (Desouza & Awazu, 2005:121). This led to the TGI Fridays group of restaurants signing an agreement with the founders of the Atkins Diet, giving an undertaking that the restaurant would offer low-calorie/kilojoule meals on their menu.

Table 4.2 indicated that 79.9% (n=107) of the participant waitrons were familiar with low calorie/kilojoule meals, while the balance of 20.1% (n=27) were not familiar with the term.

5.2.5　Awareness of World Obesity Ranking in 2011 report

Table 4.1 contained the responses of managers to the question of if they were of aware that SA was ranked third on the World's Obesity Ranking in the 2011 report. It is noted that while 54.1% (n=36) managers were aware of the obesity statistic, 48.6% (n=34) were not aware of the statistic. Muzigaba, Puoane and Sanders (2016:36) state that South Africa, like many other countries worldwide, has been affected by the process of globalisation with the concomitant changes in food systems. South Africans are gradually changing their diets from the traditional high fibre, high carbohydrate intake to diets categorised by the high intake of saturated fat, added sugar and refined carbohydrates (Steyn *et al.*, 2001:141).

Table 4.2 showed that 40.3% (n=54) of the waitron participants indicated that they were aware that SA had been ranked third on the World's Obesity Rankings report of 2011, while 59.7% (n=80) were not aware of this ranking.

5.3　FOOD SERVICE INDUSTRY'S EFFORTS TOWARDS COMBATING OBESITY

5.3.1　Restaurant menus catered for health conscious individuals

Main findings from Table 4.3 (managers) and Table 4.4 (waitrons) - mean and standard deviation for statements regarding menu offering and availability of healthy alternatives

The overall mean score for the statement measuring the "Menu offering & availability of healthy alternatives" for managers and waitrons was (M=3.41) and (M=3.4) respectively. This indicates that respondents neither agreed nor disagreed with the statement.

Findings from Table 4.3 and Table 4.4 respectively revealed that managers (64.3%; M=3.77) and waitrons (66.4%; M=3.72) alike agreed that menus at their establishments offer a variety of meal options that have lean meats, vegetables and fruits prepared with minimal fat. This indicates that the respondents agreed with the notion that their menus offer meals that are healthy and prepared with minimal fat. However, the results differ from the findings of Fitzgerald *et al.* (2004:429) who argued that food that consumed OH was known to be of a poorer diet quality as it is higher in calories, fats (saturated) and sodium. A possible reason for the difference might be that their study was conducted in community restaurants (regarded as informal communal restaurants) as opposed to the current study which was conducted in more established restaurants. The above results also clearly deviate from literature reviewed which indicated an increase in the number of individuals who eat OH, despite the poor diet quality of meals consumed OH (Kasparian *et al.*, 2017:164).

Findings indicated that both managers and waitrons disagreed with the notion that management encouraged staff to promote (upsell) menu items that are healthier, which scored a mean of M=2.99 for managers and M=3.18 for waitrons. This might be closely related to the fact that restaurant managers question whether they should be held accountable for tracking consumers diets (Gregory *et al.,* 2006:43).

Main findings from section 4.5.2 - How has the food service industry adapted to consumer eating habits and the degree of availability of healthy meal options on the menu among managers

Findings from Table 4.14 in section 4.5.2 describe a statistically significant result from the Chi-square test (P=.050), which confirmed the association between the "degree to which the food service industry has adapted to consumer eating habits" and "degree of availability of healthy meal options on the menu". The statistically significant p value was backed up by a moderate association obtained from the Cramer's V of 0.316. Indicating that there is a moderate association between "how has the food service industry adapted to consumer eating habits" and "how the food service industry adapted to consumer eating habits". These findings may be attributed to the fact that an increase in the demand of healthy meal options in restaurants has been

documented. Hwang and Cranage (2010:69) report on a trend found in their research towards an increased preference of meals that are healthier, lower in kilojoules/fats, added sugars and refined carbohydrates. Also, Lee *et al.* (2011: online) indicate that restaurant managers should consider what their consumers want, and one of the fastest growing trends is to provide healthier food choices.

Main findings from 4.5.3 - How has the food service industry adapted to consumer eating habits and the menu caters for guests who are health conscious/prefer low-kilojoule meals/on diet

As seen in section 4.5.3, a statistically significant Chi-square value of (p=.305) was achieved. Affirming that there is indeed an association between "how has the food service industry adapted to consumer eating habits" and "the menu caters for guests who are health conscious/prefer low-kilojoule meals/on diet". As previously mentioned, this may be attributed to the fact that an increase in the demand for healthy meal options in restaurants has been documented. According to Gregory *et al.* (2006:43), a drastic change in consumer eating out habits has been documented, showing that consumers are moving from consumption of fatty fast foods to healthy, low fat preferences. (Hu *et al.* (2005:85) report a significant increased demand from individuals desiring to eat healthy meals when eating out.

Main findings from Table 4.18 - Measuring how well the food service industry has adapted to consumer eating out habits related to healthy OH eating

Table 4.18 provided an overview of the findings on how well the food service industry had adapted to consumer eating out habits related to healthy OH eating. Main findings reveal that 52.9% (n=37) of managers and 50.7% (n=68) of waitrons believed that the food service industry was not entirely effective in its response to consumer eating out trends regarding healthy preferences. The table indicated that 28.6% (n=20) of managers and 34.3% (n=46) of waitrons felt that the industry's response to the demand for healthy food is good. The findings suggest that more effort from the industry in this regard is required.

5.4 RESTAURANT MANAGERS ATTEMPTED TO ALTER THEIR MENUS AND CHALLENGES FACED AS THEY DID THIS

Main findings from Table 4.19 - Responses regarding the incorporation of healthy or low fat/kilojoule meal items

Table 4.19 indicated that managers showed a significant willingness to incorporate healthy alternatives in restaurant menus, as 70% (n=49) of the managers stated that they had considered this implementing this. However, Din *et al.* (2012a:700) report that

the extent of willingness of restaurants to implement healthy options on menus had not been broadly explored.

These findings are in line with Lee *et al.* (2011) who state that restaurant managers should consider what their consumers want and one of the biggest growing trends is to provide healthier food choices on restaurant menus. According to Condrasky *et al.* (2015:289), the demand for and inclusion of healthier meals puts significant pressure on the food service industry, as preparing and serving healthier meals requires some changes in labour and training/education, equipment and purchasing food goods.

Main findings from Table 4.20 - Factors influencing the decisions to incorporate healthy or low fat/kilojoule meal items

Table 4.20 showed that the uppermost factor which influenced restaurant managers' decisions on the incorporation of healthy meal items is the "cost of ingredients", as 45.7% of the sample rated this construct as most important. The concern may arise from the thinking that healthy, fresh produce may be expensive when not in season. The 41.4% of respondents who indicated "most important" for the statement "Consumer demands (profit/sales margin)" may be attributed to the fact that a trend of individuals demanding meals that are lower in kilojoules/fat, artificial sugars, refined carbohydrates as well as trans fats, has been observed (Hwang & Cranage 2010:69).

It is alarming to note that "Public health concern (prevalence of obesity)" is not a priority as yet, as only 5.7% indicated that it was of significance to them. With an increasing number of people eating out, it would be expected that the food service industry would play a role in improving the nutrition of its consumers (Middleton, 2000:400). McCool and McCool (2010a:13) suggest that it would be rational to expect that managers within the food service industry would acknowledge that the industry has a social responsibility in alleviating the obesity epidemic.

Main findings from Table 4.7 - Perceived or experienced challenges regarding incorporating healthy alternatives – Managers

The overall mean for "Perceived or experienced challenges regarding incorporating healthy alternatives" was M=3.26, indicating that respondents neither agreed nor disagreed.

Table 4.7 illustrated that 81.4% of managers agreed that there was not much demand for healthy meals in the past and this construct obtained a high mean of 4.06, indicating a steady increase in the demand for healthy meals, compared to no previous demand. This finding is in line with Lee *et al.* (2011: online) who found that the restaurant sector

has developed greatly in recent years, with an increased focus on healthy eating to which they have had to adapt. According to Obbagy *et al.* (2011:332) and Hu *et al.* (2005:85), the main challenges to incorporating healthy meals were inadequate training and education in nutrition, the need for staffing skills and training, and exorbitant cost of ingredients.

5.5 KNOWLEDGE OF FOOD SERVICE EMPLOYEES ABOUT LOW-KILOJOULE AND HEALTHY BALANCED MEALS

Main findings from Table 4.5 (managers) and Table 4.6 (waitrons) - Knowledge and training regarding menu changes and availability of healthy alternatives

The overall mean for "Knowledge and training regarding menu changes and availability of healthy alternatives" was M=3.49 for managers and M=3.46 for waitrons. This reveals that respondents neither agreed nor disagreed with the statements.

As seen in Table 4.5, 75.6% of managers agreed that they do brief staff when a new menu item is added to the menu, and a high mean of M=4.00 was obtained.

Only 20% of the manager participants agreed that they provided training/information with regards to healthy, low-kilojoule (low fat) meals to waitrons and this construct scored a low mean of M=2.77. Interestingly, Harnack and French (2008:3) report that there is no published literature that discusses the need for nutritional knowledge among food service employees but on the contrary, published literature does address the need to educate and inform consumers on nutrition. As mentioned previously, Hu *et al.* (2005:85) report that the main challenges to incorporating healthy meals were insufficient training and education in nutrition, the need for staffing skills and training, and exorbitant ingredient costs.

As seen from Table 4.6, 79.1% of waitrons strongly agree/agree that their managers brief them when new menu items are added to the menu and this construct obtained a high mean of M=3.96. The lowest level of agreement for waitrons was the construct "We provide training/information with regards to healthy, low-kilojoule (low fat) meals" and a low mean of M=2.83 was obtained.

The construct measuring whether there is a demand for healthier/low-kilojoule meals scored a mean of M=3.64 for managers and M=3.78 for waitrons and indicates some level of agreement. As previously mentioned, Hwang and Cranage (2010:69) suggest a growing trend that individuals are demanding healthier meals that are lower in kilojoules/fat, artificial sugars, refined carbohydrates as well as trans fats. Therefore,

restaurant marketing professionals as well as menu planners are required to understand the psyche of patrons and how they reason when making menu choices. Considering that managers and waitrons agree that there is a demand for healthier meals, it is expected that waitrons would be more aware of these kinds of requests as these requests are communicated with them directly and therefore some sort of training would be in order.

Another fascinating construct was "Restaurant food is fattier than home cooked meals" which was extracted from various literature sources. The results show a mean of M=3.51 for managers and M=3.45 for waitrons, indicating that respondents neither agree nor disagree. However, literature suggests otherwise. Fitzgerald *et al.* (2004:429) argue that food consumed OH is known to be of poorer diet quality as it is higher in total calories, fats (saturated), and sodium. Glanz *et al.* (2007:383) state that the consumption of OH eating has been associated with increased consumption of calories, fat, saturated fat, added sugars and sodium, but with fewer fresh produce, less calcium, fibre and vitamins. Several dietary influences related to restaurants may cause excessive weight gain because of meals that are very dense, poor portion control, high content of saturated and trans fat, high glycaemic load but very low amounts of fibre (Bowman *et al.,* 2004:112).

Main findings from Table 4.21 - Responses regarding identification of the meal with lowest fat/kilojoules

Table 4.21 indicates waitrons' responses on the identification of a meal that contained the lowest amount of fat/kilojoules and the healthiest meal in terms of lowest caloric/kilojoule content. The table shows that a significant number (70.1%; n=94) of waitron respondents were able to correctly identify the meal which was "Grilled hake with steamed veggies". These findings deviate from Melani and Kesa (2015:10) who found that waitrons were unaware of which meal was the healthiest in terms of low fat/kilojoule content. The deviation may be attributed to the fact that in recent years, significant focus has been placed on restaurants to offer healthier meals that are lower in fat/kilojoules. The above findings also differ from Hamm *et al.* (1995:1159, cited by Hu *et al.,* 2005:86) who found that food service staff had a fairly poor knowledge of nutrition, but had positive attitudes towards the need for nutritional considerations in the food service sector. This may also be attributed to the fact that as the need for healthy meals increases, so does the awareness of waitrons.

__Main findings from Table 4.22 -   Has a guest asked you to assist them to select a low__
__fat/kilojoule or a healthier menu item?__

Table 4.22 indicates that 63.4% (n=93) of waitrons had served a guest who had requested assistance in selecting a healthier or low kilojoule meal. This confirms that there is indeed an increase in healthier preferences even when individuals consume meals OH. These findings are in line with Gregory *et al.* (2006:43) who report that a drastic change in consumer eating out habits has been documented, showing that consumers are making the move from fatty fast food consumption to healthy, low fat preferences. This also aligns with the findings of Hwang and Cranage (2010:69) which indicate a trend of individuals demanding meals that are lower in kilojoules/fat, artificial sugars, refined carbohydrates and trans fats. Thus, it is expected that waitrons will increasingly experience guests who request healthier options.

__Main findings from Table 4.23 - If yes, how would you rate your level of assistance to__
__the guest?__

Waitrons who had experienced serving a guest who requested a healthier or low kilojoule meal were then asked to rate their level of ability to adequately assist such a guest. The results in Table 4.23 indicate that 44.1% (n=41) of waitrons rated their ability to serve these particular guests as average, while 1.0% (n=1) and 3.2% (n=3) felt their ability to assist these guests was poor or very poor, respectively. Hwang and Lorenzon (2008:287, cited by Ozdemir & Caliskan, 2014:7) state that communicating nutritional information, on menu or by staff, may enhance positive perceptions of consumers of the restaurant and it may result in the consumer being more inclined to order the healthier menu items.

5.6   PERCEPTIONS ON HOW HEALTHY MEALS BENEFIT RESTAURANT IMAGE

__Main findings from Table 4.8 (managers) and Table 4.9 (waitrons) - Perception of__
__managers on how healthy meals benefit restaurant image__

As seen in Table 4.8 and Table 4.9, the overall mean for "Perceptions on how healthy meals benefit restaurant image" was M=3.43 for managers and M=3.66 for waitrons. This showed that waitrons obtained a higher level of agreement than their managers.

Table 4.8 reflects that 75.7% of managers agreed that the presence of healthy meals on restaurant menus would attract a new market and as such this construct scored a high mean of M=4.01. Further, 67.2% of managers were of the view of that healthy meals would improve the image of a restaurant.

Table 4.9 illustrates that 88.9% of waitrons agreed that healthy meals on menus would maintain guest patronage, giving a significant mean of M=4.25. Further, 78.4% of waitrons agreed that healthy meals on the menu would attract a new market (M=4.17). Findings from this study are aligned to those from Middleton (2000:405) who measured the attitudes and perceptions of chefs on healthy eating in restaurants. It was found that a substantial number of chefs (79%) felt they had a responsibility towards consumers to offer healthy food, with the hope that it would ensure repeat patronage Middleton (2000:405).

Managers and waiters alike agreed that healthy meals indeed do have a bearing on image of a restaurant. This construct scored mean of M=2.20 for managers and M=2.10 for waitrons and shows that respondents disagree with the notion that healthy meal offerings do not have any impact on a restaurant's image.

The findings align with those of Hamm *et al*. (1995:1159, cited by Hu *et al.,* 2005:86) who report that food service staff showed positive attitudes towards the need for nutritional considerations in the food service sector.

5.7   SUMMARY

This chapter discussed the main findings emanating from the results of the study and explained how the research objectives were achieved. From the discussion on the main findings, it was noted that there were indeed some efforts forthcoming from the food service industry to assist in alleviating the problem of obesity.

The main findings revealed that respondents agreed with the notion that restaurant menus do offer meals that are healthier and prepared with minimal fats. This was shown in the high level of agreement among managers and waitrons alike to the construct of "The menu offers a variety of meal options that have lean meats, vegetables and fruits prepared with minimal fat", which scored a mean of M=3.77 for managers and M=3.72 for waitrons. However, it was interesting to note that management did not encourage waitrons to upsell/promote healthier alternatives that are available on the menu. Results from the Chi-square test resulted in a p-value of P=.050, which was statistically significant, which affirmed that there is an association between the degree to which the food service industry has adapted to consumer eating habits and degree of availability of healthy meal options on the menu. This means that the degree of availability of healthy menu items is linked to how well the industry had adapted to consumer eating trends of preferring meals that were

healthier and lower in fat. The availability of these healthy, low fat meal items is seen to be an effort towards alleviating incidences of obesity.

Findings from managers regarding their willingness to incorporate healthy or low fat/kilojoule meal items in menus revealed a significant willingness to do this. This is shown in that 70% (n=49) of the managers stated that they had considered the incorporation of healthy meal items to their menus. The most important factor that influenced restaurant managers' decisions on the incorporation of healthy meal items was the "cost of ingredients" as the general concern may be that the cost of fresh produce may be expensive when not in season. The second most important factor was "consumer demands (profit/sales margin)".

However, it is alarming to note that "Public health concern (prevalence of obesity)" was not a priority yet, despite the increasing number of people eating out and the health implications linked to increased OH eating, and the healthcare burden due to the increasing prevalence of obesity.

The following and final chapter presents the conclusions of the study, recommendations which emanate from the findings and the limitations of the study.

CHAPTER 6

CONCLUSIONS, RECOMMENDATIONS AND LIMITATIONS

6.1   INTRODUCTION

This chapter concludes the study and offers recommendations. The chapter commences by reflecting on the research objectives and how these were achieved. Recommendations are made based on the main findings with some insight into possible implications of the study. Future research opportunities are also presented in this chapter and finally, the limitations of the study are stated.

6.2   REFLECTING ON RESEARCH OBJECTIVES

The main objective of the study was to determine what the food service industry in Johannesburg is doing to contribute towards combating obesity. To achieve this main objective, sub-objectives were formulated. These objectives guided the study at large and had implications on the unfolding of this study. Each of the sub-objectives are stated and how each was met.

Sub-objective 1: The study aimed at examining the knowledge and training of food service employees (waitrons) regarding healthy balanced meals.

Table 4.21 presented waitrons' responses on the identification of a meal that contained the lowest amount of fat/kilojoules, the healthiest meal in terms of lowest caloric/kilojoule content. The correct meal was "Grilled hake with steamed veggies". The table revealed that a significant number of respondents (70.1%; n=94) were able to select the correct meal. These findings indicate that respondents have some knowledge of what healthier, low fat alternatives are.

Table 4.22 presented waitrons' responses to a question on whether they had experienced serving a guest who requested a healthier or low kilojoule meal. The responses indicated that the majority of waitrons (69.4%; n=93) had served such a guest.

Waitrons who responded in the affirmative were then asked to rate their ability in assisting guests with such a request and the results appear in Table 4.23. Of the waitrons (n=93 from Table 4.22) who had experienced such a request from a guest, 44.1% (n=41) rated themselves as not being able to adequately assist these guests without having to ask a colleague to assist or clarify what the guest actually ordered.

However, 45.2% (n=42) believed they were able to adequately assist guests who requested healthier alternatives on the menu.

Sub-objective 2: To determine whether restaurant menus catered for health conscious individuals and how effective the food service industry is in catering to consumers' healthy eating habits.

Table 4.3 presented mean and standard deviation for statements regarding menu offerings and availability of healthy alternatives. The overall mean score for the statements measuring the "menu offering & availability of healthy alternatives" for managers was M=3.41 and M=3.4 for waitrons. This indicates that respondents neither agreed nor disagreed with the statement. It may be concluded that this 'midpoint' overall mean could raise questions on whether restaurant menus indeed do serve healthy alternatives and suggests uncertainty in this regard. It may be argued that although the respondents' highest level of agreement was for the construct "the menu offers a variety of meal options that have lean meats, vegetables and fruits prepared with minimal fat", it serves no purpose when waitrons are not encouraged to promote these healthier menu items.

The construct measuring whether there is a demand for healthier/low-kilojoule meals scored a mean of M=3.64 for managers as 64.3% agreed with this statement, while a mean of M=3.78 was obtained for waitrons, representing 61.2%. This indicates some level of agreement. As previously stated, Hwang and Cranage (2010:69) suggest that the trend was that individuals demand meals that are lower in kilojoules/fat, artificial sugars, refined carbohydrates as well as trans fats.

Table 4.18 presented the findings on how well the food service industry had adapted to consumer eating out habits related to healthy OH eating. Main findings revealed that 52.9% (n=37) and 50.7% (n=68) of managers and waitrons respectively affirm that the food service industry is not entirely effective in how it is responding to consumer eating out trends regarding healthy preferences. The table also indicates that only 28.6% (n=20) of managers and 34.3% (n=46) of waitrons indicated that the industry's response to the demand for healthier choices is good.

Sub-objective 3: To establish to what extent restaurant managers attempted to alter their menus to include healthy meals and determine the challenges they faced as they do this.

Table 4.19 presented results on responses from managers regarding their willingness to incorporate healthy or low fat/kilojoule meal items. Results revealed a significant willingness to incorporate healthy alternatives in restaurant menus. This is shown in that 70% (n=49) of the managers stated that they had considered the incorporation of healthy meal items to their menus.

In relation to Table 4.19, Table 4.20 then presented the factors which influenced the decisions to incorporate healthy or low fat/kilojoule meal items. From the table, it can be deduced that the most important factor that influences restaurant managers' decisions on the incorporation of healthy meal items is the "cost of ingredients". The general concern may be that the cost of these ingredients (fresh produce) may be expensive when they are not in season. The second most important factor was "consumer demands (profit/sales margin)".

It is alarming to note that "Public health concern (prevalence of obesity)" is not a priority as yet, despite the fact that with an increasing number of people eating out, it would be expected that the food service industry would play a role in improving the nutrition of its consumers (Middleton, 2000:400). McCool and McCool (2010a:13) suggest that it would seem rational for managers within the food service industry to acknowledge that the industry has a social responsibility regarding the obesity epidemic.

Table 4.7 presented the "Perceived or experienced challenges regarding incorporating healthy alternatives". The overall mean for this construct was M=3.26, indicating that respondents neither agreed nor disagreed.

However, some of the constructs contained negative statements and these gained responses which indicated that respondents did not agree with them. These statements were "We had limited knowledge on healthy meal composition or requirements" and "Consumers do not order or prefer healthy alternatives at our establishment", which scored a mean of M=2.89 and M=2.73 respectively. These constructs scored the lowest scores, showing that managers disagree that they had limited knowledge on healthy meal composition requirements. They also disagreed with the statement that they are challenged by consumers who did not prefer/order healthy alternatives at their restaurants, revealing that guests actually do order or demand healthy alternatives.

The highest level of agreement was "There was not much demand for healthy meals in the past" (M = 4.06). This shows that the demand for healthy meals is steadily increasing, as there was previously no demand for these meals. However, restaurants are now facing an ever increasing demand for healthy meals. This finding aligns with Lee *et al.* (2011) who found that the restaurant sector has developed greatly in recent years, with an increased focus on healthy eating and they have had to adapt to this.

Sub-objective 4: To analyse employees' (managers, waitrons) perceptions on how healthy meals benefit a restaurant's image in Johannesburg

Table 4.8 and Table 4.9 presented results on the perception of managers of how healthy meals benefit a restaurant. The overall mean for "Perception of managers on how healthy meals benefit a restaurant" was M=3.43 for managers and M=3.66 for waitrons. This shows that waitrons obtained a higher level of agreement than the managers.

Statements with the highest level of agreement for managers were "Attract new market" (M=4.01), followed by "Improve restaurant image" (M=.81). Statements with the highest level of agreement among waitrons was "Maintain patronage" (M=4.25) and "Attract new market" (M =4.17; SD=.854). This indicates that both managers and waitrons agree with the notion that offering healthier meal options will attract a new market to their restaurants.

6.3   RECOMMENDATIONS

6.3.1   Recommendations to the food service industry

Based on the conclusions presented above, it should be noted that although in Table 4.22 (waitrons) 70.1% of respondents (n=94) indicated that they were able to successfully select a meal that was lowest in fat/kilojoules and was the healthiest, it may be argued that perhaps due to lack of confidence in assisting with such requests, a much lower number of respondents were able to adequately assist with these requests. Therefore, it is recommended that food service establishments invest in equipping their waitron employees with the necessary knowledge of and training on healthy balanced meals. This will result in a more efficient and knowledgeable employee who would be confident in serving guests with special requests. It is also important that waitrons are equipped with the necessary expertise in how to respond and engage a guest who requests these particular meals.

Furthermore, the researcher recommends that food service establishments should encourage their waitrons to mention healthier alternatives to their guests. The majority of restaurant managers indicated that they do consider the incorporation of such meals and in Table 4.19 (n=93; 68%) waitrons indicated that they had served a guest who requested a healthier/low fat meal. It would serve no purpose to introduce these menu items and spend money on reprinting menus and yet no mention of them is made to guests that may not be aware of them. Restaurant managers should encourage waitrons to use such opportunities to make a return on investment by ensuring that the money spent on incorporating these healthy meals is recovered by promoting these meals to guests. Restaurant managers should consider the fact that there are financial implications to amending menus to incorporate these meals and therefore should place emphasis on ensuring that these meals are subsequently sold to guests.

Additionally, due to the demand for healthier meal items/alternatives, it is also recommended that restaurant marketing professionals as well as menu planners (restaurant managers) should be expected to predict and understand the psyche of guests and how they reason when making menu choices. Given the fact that managers and waitrons agree that there is a demand for healthier meals, it is expected that waitrons would be more aware of these kinds of requests as these requests are communicated with them directly and therefore some sort of training would be in order. Implications on a restaurant that does not predict or anticipate guests' reasoning when making meal choices may potentially lead to the restaurant losing their existing clientele or not attracting a new market.

Given the current prevalence of obesity in South Africa, and literature condemning the food service industry for the prevalence of obesity, it would seem rational that the food service industry consider the issue of "Public health concern (prevalence of obesity)" as a factor that influences their decisions on the incorporation of healthy balanced meals in their menus.

The researcher further recommends that the National Department of Health should play a role in attempting to alleviate the prevalence of obesity in South Africa by forming partnerships with the food service sector as there are healthcare costs and financial implications on national government regarding the health burden of South Africans, particularly on diet-related NCDs. It would therefore seem rational that the Department of Health mobilise initiatives that support the food service industry as they make attempts to offer healthier balanced meals on their menus and perhaps incentivise

these restaurants. The National Department of Health could also offer substantial support to existing initiatives such as the one that this research was part of, as an example.

The findings indicate that managers are focused on attracting a new market in consumers who are health conscious even when eating out, as well as improving the restaurant's image. However, waitrons realise that as much as the incorporation of healthy meals may attract a new market, it is also important for the establishment to maintain their current patronage as loyalty from guests is vital for an establishment's survival. Considering the aforesaid, the researcher recommends that restaurants should incorporate healthy balanced meals into their menus because that these would add value to the restaurant's image, attract a new market, as well as retain current patronage.

It is concerning to see the results in Table 4.18 on how well the food service industry had adapted to consumer eating out habits related to healthy OH eating. Main findings revealed that 52.9% (n=37) of managers and 50.7% (n=68) of waitrons agree that the food service industry is not entirely effective in how it is responding to consumer eating out trends regarding healthy preferences. This may be attributed to the fact that the healthy OH eating preference is a fairly new phenomenon in South Africa, but it is growing rapidly, especially in the demographic area which the study covered. Therefore, it is strongly recommended that the food service sector pay urgent attention to this phenomenon.

Considering the findings, it is suggested that more effort is required from the industry in catering to the consumer demand for healthier meal preferences.

6.3.2   Recommendations for future research

There is limited published literature on the quality of meals served OH and what the long-term effect is on an individual's BMI. It is recommended that research into this area should be conducted, which would be of value to the food service industry and to consumers in general.

Although researchers Harnack and French (2008:3) report that there is no published literature that discusses the need for nutritional knowledge among food service employees, existing literature does indicate the need to educate and inform consumers on nutrition through health programmes and kilojoule labelling on food items. The researcher recommends the undertaking of further research into the knowledge and

training of food service employees regarding healthy/low kilojoule menu items or alternatives in South Africa.

Although the findings from the current study showed that waitrons were able to successfully select the healthiest meal from the meal items in the questionnaire, they were unable to adequately assist guests who requested healthier meal options. This may be because of a lack of confidence, or lack of knowledge and understanding of these meals.

The researcher recommends that further research in a broader sense be conducted, particularly in a different province, or even at a national level. Such research would add to the body of knowledge relating to the food service industry.

6.5   LIMITATIONS

Although the research endeavoured to ensure honesty, integrity, validity and reliability of research processes, there remained certain limitations in this study. Among the many limitations of the study, the main limitation was gaining access to the CoJ database of 200 registered restaurants timeously, as the database was initially meant to be the core sample population of the study. Once the database was received, 22 of the 200 listed restaurants agreed to participate in the study. However, ultimately only four of these restaurants agreed that the researcher could conduct the collection of data at their restaurants. Although not part of the initial design, this resulted in the researcher having to seek the participation of other restaurants, including restaurants that were within hotels in order to ensure the sample size was sufficient. Ultimately data was collected from 215 participants, 11 questionnaires were returned incomplete, resulting in 204 usable questionnaires for analysis. Therefore, the realisation rate of the study was 88.70%.

The researcher personally collected the data and was therefore in a position to observe and obtain first-hand information from participants who were reluctant to participate in the study. Reasons for reluctance varied from respondents fearing that their identity would be revealed, even though they were assured of anonymity; some were concerned that the study was criticizing the industry, whilst others felt that the questionnaire was too long and they did not have time to complete it as they were busy on shift. Some respondents stated that they were hotel school students on training/WIL and were not comfortable with completing the questionnaire.

The data collection process was very time consuming.

The sample was drawn from food service employees in Johannesburg only. The findings can therefore not be generalised to food service establishments in other cities.

6.6   CONCLUSION

This chapter concluded the study, offered recommendations and identified the limitations of the study.

Within the recommendations, an agenda for further research was explored and some insights into possible implications of the study were documented. The study aimed to explore the food service industry's contribution towards combating obesity. The study was guided by a conceptual framework which dictated that increased consumption of OH eating, which was associated with poor diet quality (increased fats, added sugars, refined carbohydrates), would lead to an increased BMI. Therefore, it was recommended that healthier meals be incorporated in restaurant menus.

The study was both challenging and insightful and the researcher gained a defined understanding of the association between increased OH eating and the increase in BMI of individuals, as well as the possible contributions that the food service industry may effect in efforts to alleviate the prevalence of obesity.

It is believed that the findings of this study will be useful to the food service industry. However, the researcher acknowledges that the food service industry is not solely responsible for the prevalence of obesity, although some literature may condemn the industry for it (McCool & McCool, 2010a:2010).

The researcher recommends further research to unpack the prevalence of obesity and its associations with the food service industry. The conclusion of this study does not represent closure on this topic, it simply paves the way for ongoing studies in this particular area that earnestly must be explored.

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APPENDIX A:

Value proposition for restaurant partners – CoJ Healthy lifestyle campaign

Campaign Narrative: The City of Johannesburg teams up with its leading restaurants and fast-food outlets citywide to showcase the healthiest and best food choices the people of Johannesburg can make as they seek to lead healthier lives.

Campaign components

a) **Published Healthy food ratings and awards**: The City will dispatch ratings teams, made up of both experts and known public figures/celebrities to eat the healthiest meals at participating restaurants and fast food outlets , rating the healthy offerings in each case according to a classification/ranking system. Data on all menus from participating menus will be gathered via this process and a more wide ranging assessment by inspection teams not linked to publicized events. The data will be published widely and available via a dedicated digital platform, including a website and mobile app. The public will be able to submit their own ratings, which will feed into an awards programme for the best healthy eating options citywide.

b) **In-store promotional material highlighting healthy options**: Showcased healthy meals will be branded on menus and with dedicated on-table marketing collateral. Specific marketing collateral will also be developed for the fast food/takeaway space (such as branded napkins and packaging made from recycled material)

   CofJ plaque signed by the Executive Mayor endorsing the establishment partnering in the initiative to be displayed visibly for the clients to see.

c) **Promotion of healthy restaurant meals as part of branded events**: As from March 2014, the City will be initiating weekly weekend road closures in specific areas to create dedicated cycling, walking and running spaces with associated promotion of health-seeking behaviours – including healthy eating. This will enable direct sales opportunities for available healthy meals as well as distribution opportunities for promotional material.

Benefit to participating restaurants and food outlets

a) **Publicity and promotion through healthy food ratings and awards.**

   Above the line: The City will fully publicize all partner restaurants and fast-food outlets in all promotional material linked to the campaign (including branded buses and billboards) as well as all public events within the campaign space. Partner-specific events will unfold as the programme and campaign matures and progress, where the specific partners branding can be given exclusive weight alongside the City.

   Social and digital media: The dedicated web platform and mobile app for healthy food ratings (as discussed above) will include a section showcasing healthy food specials and promotions from partner restaurants and fast-food chains. A proportion share of screen views can be used to ensure direct competitors receive equitable exposure.

Below the line within COJ customer base : Promotional materials linked to the campaign and healthy lifestyles partnership can be distributed via all COJ customer information systems (including monthly statements) and displayed at all COJ facilities, including recreation centres, libraries and parks. Partner restaurant branding will be included here as elsewhere.

Exact quantification of the value of media exposure for each restaurant that can be projected because of campaign/partnership involvement will be possible once scope of activities is more precisely defined.

Potential expansion areas for the healthy lifestyles partnership

a) Structured media partnership linked with a tailored media product

The City is still investigating the various options for bringing a dedicated media partner on board as part of the campaign and partnership structure. Linked to this a tailored media product (such as a linked television show) would be a viable option but requires further development as part of the next phase of the campaign.

b) Linkage with healthy lifestyle rewards programmes provided by the insurance industry

Healthy eating and exercise opportunities accessed via this campaign can in the medium term be recognised as points earning activities under the various schemes rewarding health-seeking behaviour attached to major life assurance products. This will have to be structured with due consideration for brand alignment with the various restaurant and fast food partners involved in the first phase of the campaign.

APPENDIX B:

LETTER REQUESTING PERMISSION TO CONDUCT RESEARCH

REQUEST FOR PERMISSION TO CONDUCT RESEARCH

I am a registered Master's student in the University of Johannesburg's School of Tourism and Hospitality Management. My supervisor is Dr Hema Kesa

The topic of my research is: ***The food service industry's contribution towards combating obesity.***

The objectives of the study are:

The main objective of the study is to determine what the food service industry in Johannesburg is doing towards combating obesity.

Sub Objectives

- ❖ The study aims at determining and examining the knowledge of food service employees on low-kilojoule and healthy balanced meals (alternatives).

- ❖ To establish to what extent the restaurant managers (menu planners) attempt to alter their menus in order to accommodate for health conscious consumers and as an initiative to assist in combating the obesity epidemic.

- ❖ To examine to what extent the food service industry in the city is adapting to current trends of consumer eating out habits, with regards to the diets consumers follow.

(a) A copy of the research instruments which I intend using in my research (questionnaires) are attached.

Please note the participants/restaurants/hotels are kept completely **anonymous.**

Upon completion of the study, I undertake to provide you with a bound copy of the discussion of the results and the recommendations.

Your permission to conduct this study will be greatly appreciated.

Yours sincerely,

Akhona Melani

073 009 9236

<u>The food service industry's contribution in combating obesity</u>

TO WHOM IT MAY CONCERN

I am a postgraduate student of the University of Johannesburg's School of Tourism and Hospitality currently studying to obtain my Master's in Tourism and Hospitality Management.

This a research based qualification and my focus lies more in Restaurant menus and linking them to nutritional/healthy eating.

The purpose of this survey is to investigate what the food service industry is doing to contribute towards combating obesity through offering healthy balanced meals or even low kilojoule meals. This survey aims to determine the awareness and knowledge of food service personnel on low kilojoule meals (healthy alternatives) and initiatives that various establishments conduct to curb obesity. The data that will be collected is purely for research purposes

I kindly request you to complete the questionnaire. Taking part in this survey is completely voluntary and **anonymous** - **No establishment names will be linked to any of the findings**. It should not take longer than 10 minutes of your time and consists of two sections. Indicate your response to the questions by crossing (X) the relevant block based on your own perspective.

Should you have any queries or comments regarding this survey, you are welcome to contact me telephonically at 073 009 9236 or via email at anmelani13@gmail.com or akhonam@uj.ac.za .

Thank you for your time and input.

Yours sincerely
Akhona Melani

APPENDIX C:

MANAGER'S QUESTIONNAIRE

SECTION A: BACKGROUND INFORMATION

We assure you that your response will remain anonymous. Place an X across the number that most accurately reflects you and your views. Example below:

Gender:

Male	1 (X)
Female	2

1. Age group

18 – 28 years	1
29 – 39 years	2
40 – 50 years	3
51 and older	4

2. Highest educational qualification

Grade 11 or lower (Std 9 or lower)	1
Grade 12 (Matric, Std 10)	2
Post-Matric Diploma or Certificate	3
Bachelor Degree(s)	4
Post-Graduate Degree(s)	5

3. Years worked in current job

Less than 1 year	1
2 – 5 years	2
6 – 10 years	3
11 years and more	4

4. Are you familiar with the term low-kilojoule meals?

NO	YES
0	1

5. Are you aware that SA was ranked 3rd on the World Obesity ranking Compass Group Southern Africa's 2011 report?

NO	YES
0	1

SECTION B: FOOD SERVICE INDUSTRY AND COMBATING OBESITY

The food service industry off late has been condemned for the prevalence of obesity worldwide, as food that is consumed out of home (OH) is said to be of poor diet quality and fattier than home cooked meals.

With reference to the **Restaurant you are currently employed at,** please *indicate to what extent you agree or disagree with the following statements by* **crossing (X)** *the relevant block using a 5-point scale where 1 = Strongly Disagree, 2= Disagree, 3= Neutral, 4 Agree and 5 = Strongly Agree.*

6.	Statement	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
		1	2	3	4	5
6.1	The menu offers a variety of meal options that have lean meats, vegetables and fruits prepared with minimal fat	1	2	**3**	4	5
6.2	Management encourages staff to promote (upsell) menu items that are healthier	1	2	3	4	5
6.3	The menu caters for guests who are health conscious/prefer low-kilojoule meals/on diet	1	2	3	4	5
6.4	The menu changes according to seasonal availability of fresh produce (fruit and veg)	1	2	3	4	5
6.5	Healthier meal items are labelled on the menu	1	2	3	4	5
7.	**Knowledge**					
7.1	Management briefs staff after new menu item have been added to the menu	1	2	3	4	5
7.2	Staff is knowledgeable on the cooking methods used in the kitchen	1	2	3	4	5
7.3	There is a demand for healthier/low-kilojoule meals	1	2	3	4	5
7.4	Restaurant food is fattier than home cooked meals	1	2	3	4	5
7.5	We provide training/information with regards to healthy, low-kilojoule (low fat) meals	1	2	3	4	5
7.6	I am aware of seasonal availability of fruits and vegetables on menu	1	2	3	4	5
7.7	Staff is knowledgeable on healthy, low-kilojoule (low fat) meals	1	2	3	4	5

8. Has a guest asked you to assist them select a low fat/kilojoule or a healthier menu item?

NO	YES
0	1

9. If yes, how would you rate your level of assistance to the guest?

Not applicable	Very poor	Poor	Average	Good	Very good
0	1	2	3	4	5

10. Select a meal that is lowest in fat/kilojoule amongst these. Mark with an X

Grilled Hake with Seasonal Steamed Veggies	1
Deep Fried Chicken Schnitzel with Steamed Veggies	2
Fried Battered Hake with Fries	3
Grilled Beef Fillet with Mixed Veggies (Sautéed)	4

11. During the Menu Planning process, do you consider adding low fat/kilojoule items?

NO	YES
0	1

12. **If yes, please select below criteria/factors that influence your decision in adding low-kilojoule items to the menu.**

Please *indicate to what extent these are important or not important with the following statements by crossing (X) the relevant block using a 5-point scale where 0 = Not Applicable, 1 = Not Important, 2= Moderately Important, 3= Important and 4= Most Important*

Statement		Not applicable	Not important	Moderately important	Important	Most important
		0	1	2	3	4
12.1	Consumer demands (Profit/Sales Margin)	0	1	2	3	4
12.2	Ease of cooking (time it takes to prepare the meal)	0	1	2	3	4
12.3	Food safety	0	1	2	3	4
12.4	Seasonal availability of fresh produce	0	1	2	3	4
12.5	Costs of ingredients	0	1	2	3	4
12.6	Public health concern (prevalence of obesity)	0	1	2	3	4
12.7	Government Requirements (with possibility of incentives for the establishment in some way)	0	1	2	3	4

13. Have you attempted to alter your menu to cater for Healthier preferences or to promote healthy out of home eating?

No	Partially	Yes
0	1	2

14. If yes or partially, please select below challenges that you might have faced during this process. Even if you have not attempted, please indicated your perceived challenges.

With reference to the Restaurant you are currently employed at, please *indicate to what extent you agree or disagree with the following Challenges by crossing (X) the relevant block using a 5-point scale where 1= Strongly Disagree, 2 = Disagree, 3 = Neutral, 4= Agree and 5 = Strongly Agree.*

Perceived or Experienced Challenges		Strongly disagree	Disagree	Neutral	Agree	Strongly agree
		1	2	3	4	5
14.1	We had limited knowledge on healthy meal composition or requirements	1	2	3	4	5
14.2	There was not much demand for healthy meals in the past	1	2	3	4	5
14.3	Ingredients required for healthy meals are expensive	1	2	3	4	5
14.4	Healthy meals require more effort and thought in preparation	1	2	3	4	5
14.5	Consumers do not order or prefer healthy alternatives at our establishment	1	2	3	4	5

14.6	We had to up price healthy meals (ingredients are expensive)	1	2	3	4	5
14.7	We needed something to guide us, i.e. the Set Minimum Standards	1	2	3	4	5
14.8	Seasonal availability of fruits and vegetables would force us to amend our menu often	1	2	3	4	5
14.9	We executed our healthy meals with ease	1	2	3	4	5

15. How do you perceive having healthy (low-kilojoule) meals on the menu benefits the Restaurant?

Please *indicate to what extent you agree or disagree with the following statements by crossing (X) the relevant block using a 5-point scale where 1 = Strongly Disagree, 2= Disagree, 3= Neutral, 4= Agree and 5 = Strongly Agree.*

Statement		Strongly disagree	Disagree	Neutral	Agree	Strongly agree
		1	2	3	4	5
Staff Perception on how healthy meals benefit Restaurant						
15.1	It has no bearing on the restaurant's image	1	2	3	4	5
15.2	Improve restaurant image	1	2	3	4	5
15.3	Maintain patronage	1	2	3	4	5
15.4	Attract New market	1	2	3	4	5

16. Are staff members (waiters) trained or informed with regards to availability of healthy meals?

NO	YES
0	1

17. Are staff members (waiters) informed of specific ingredients and cooking methods that are considered as healthy alternatives?

NO	YES
0	1

18. In your opinion, how has the food service industry adapted to consumer eating habits (healthy low-kilojoule /fat preference/various diets)?

Very poor	Poor	Average	Good	Very good
1	2	3	4	5

Thank you for your co-operation in completing this questionnaire.

APPENDIX D:

WAITRON'S QUESTIONNAIRE

<u>SECTION A</u>: <u>**BACKGROUND INFORMATION**</u>

We assure you that your response will remain anonymous. Place an X across the number that most accurately reflects you and your views. Example below:

Gender:

Male	1
Female	2

19. Age group

18 – 25 years	1
26 – 35 years	2
36 – 45 years	3
46 years and above	4

20. Highest educational qualification

Grade 11 or lower (Std 9 or lower)	1
Grade 12 (Matric, Std 10)	2
Post-Matric Diploma or Certificate	3
Bachelor Degree(s)	4
Post-Graduate Degree(s)	5

21. Years worked in current job

Less than 1 year	1
2 – 5 years	2
6 – 10 years	3
11 years and more	4

22. Are you familiar with the term low-kilojoule meals?

NO	YES
0	1

23. Are you aware that SA was ranked 3rd on the World Obesity ranking Compass Group Southern Africa's 2011 report?

NO	YES
0	1

SECTION B: FOOD SERVICE INDUSTRY AND COMBATING OBESITY

The food service industry off late has been condemned for the prevalence of obesity worldwide, as food that is consumed out of home (OH) is said to be of poor diet quality and fattier than home cooked meals.

With reference to the **Restaurant you are currently employed at,** please *indicate to what extent you agree or disagree with the following statements by* **crossing (X)** *the relevant block using a 5-point scale where 1 = Strongly Disagree, 2= Disagree, 3= Neutral, 4 Agree and 5 = Strongly Agree.*

	24. Statement	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
		1	**2**	**3**	**4**	**5**
6.1	The menu offers a variety of meal options that have lean meats, vegetables and fruits prepared with minimal fat	1	2	**3**	4	5
6.2	Management encourages staff to promote (upsell) menu items that are healthier	1	2	3	4	5
6.3	The menu caters for guests who are health conscious/prefer low-kilojoule meals/on diet	1	2	3	4	5
6.4	The menu changes according to seasonal availability of fresh produce (fruit and veg)	1	2	3	4	5
6.5	Healthier meal items are labelled on the menu	1	2	3	4	5
25. Knowledge						
7.1	Management briefs staff after new menu item have been added to the menu	1	2	3	4	5
7.2	Staff is knowledgeable on the cooking methods used in the kitchen	1	2	3	4	5
7.3	There is a demand for healthier/low-kilojoule meals	1	2	3	4	5
7.4	Restaurant food is fattier than home cooked meals	1	2	3	4	5
7.5	We provide training/information with regards to healthy, low-kilojoule (low fat) meals	1	2	3	4	5
7.6	I am aware of seasonal availability of fruits and vegetables on menu	1	2	3	4	5
7.7	Staff is knowledgeable on healthy, low-kilojoule (low fat) meals	1	2	3	4	5

26. Has a guest asked you to assist them select a low fat/kilojoule or a healthier menu item?

NO	YES
0	1

27. If yes, how would you rate your level of assistance to the guest?

Not Applicable	Very poor	Poor	Average	Good	Very good
0	1	2	3	4	5

28. Select a meal that is lowest in fat/kilojoule amongst these. Mark with an X

Grilled Hake with Steamed Veggies	1
Deep Fried Chicken Schnitzel with Steamed Veggies	2
Fried Battered Hake with Fries	3
Grilled Beef Fillet with Mixed Veggies (Sautéed)	4

29. How do you perceive having healthy (low-kilojoule) meals on the menu benefits the Restaurant?

Please *indicate to what extent you agree or disagree with the following statements by crossing (X) the relevant block using a 5-point scale where 1 = Strongly Disagree, 2= Disagree, 3= Neutral, 4= Agree and 5 = Strongly Agree.*

Statement		Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
		1	2	3	4	5
Staff Perception on how healthy meals benefit Restaurant						
11.1	It is not important for restaurant's image	1	2	3	4	5
11.2	Improve restaurant image	1	2	3	4	5
11.3	Will cause guests to come again	1	2	3	4	5
11.4	Attract New market	1	2	3	4	5

30. Please select below challenges that you might have faced with regards to healthy meals on the menu and during service.

With reference to the Restaurant you are currently employed at, please *indicate to what extent you agree or disagree with the following Challenges by crossing (X) the relevant block using a 5-point scale where 1 = Strongly Disagree, 2= Disagree, 3= Agree and 4 = Strongly Agree.*

Perceived or Experienced Challenges		Strongly disagree	Disagree	Neutral	Agree	Strongly agree
		1	2	3	3	5
12.1	I had limited knowledge on healthy meal composition or requirements	1	2	3	4	5
12.2	I am not really aware of the cooking methods for healthy meals	1	2	3	4	5
12.3	I was not briefed or informed by management about healthy meals or healthy food items	1	2	3	4	5
12.4	I have difficulty in understanding guests' request with regards to healthy meals	1	2	3	4	5
12.5	I have difficulty in explaining the menu items to the guests	1	2	3	4	5

31. In your opinion, how has the food service industry adapted to consumer eating habits (healthy low-kilojoule /fat preference)?

Very poor	Poor	Average	Good	Very good
1	2	3	4	5

Thank you for your co-operation in completing this questionnaire.

APPENDIX E:

GRAMMARIAN CERTIFICATE

22 Krag Street
Napier
7270
Overberg
Western Cape

September 2017

EDITING & PROOFREADING

Cheryl M. Thomson

THE CONTRIBUTION OF THE FOOD SERVICE INDUSTRY
TOWARDS COMBATING OBESITY

Supervisor: Dr Hema Kesa

This is to confirm that the language and technical editing of the above-titled Master's thesis of AKHONA MELANI, student number 201012659, at the UNIVERSITY OF JOHANNESBURG, was undertaken by me, Cheryl Thomson, in preparation for submission of this thesis for assessment.

Yours faithfully

CHERYL M. THOMSON

Email: cherylthomson2@gmail.com

Cell: 0826859545

Landline: 028 4233076