

South African Fast Food Outlets Contribution Towards Curbing Obesity: Managements' Perspective

Clara Baloyi 

Food Evolution Research Laboratory, School of Tourism & Hospitality, College of Business & Economics, University of Johannesburg, Johannesburg, South Africa, Email, clarabaloyi@gmail.com

Hema Kesa 

Food Evolution Research Laboratory, School of Tourism & Hospitality, College of Business & Economics, University of Johannesburg, Johannesburg, South Africa, Email, hemak@uj.ac.za

Anesu Kuhudzai 

Statistical Consultation Services (STATKON), Post Graduate School, University of Johannesburg, South Africa, Email, akuhudzai@uj.ac.za

Eridiong Onyenweaku 

Food Evolution Research Laboratory, School of Tourism & Hospitality, College of Business & Economics, University of Johannesburg, Johannesburg, South Africa, Email, eridiongo@uj.ac.za

**Corresponding Author*

How to cite this article: Baloyi, C., Kesa, H., Kuhudzai, A. & Onyenweaku, E. (2023). South African Fast Food Outlets Contribution Towards Curbing Obesity: Managements' Perspective. African Journal of Hospitality, Tourism and Leisure, 12(3):973-988. DOI: <https://doi.org/10.46222/ajhtl.19770720.411>

Abstract

The aim of this study was to determine what the fast food restaurants in the Gauteng region are doing to combat obesity. Obesity is a global epidemic, with figures rising at an alarming rate every year. The food service industry has contributed significantly to the rise in obesity rates worldwide. Purposive sampling technique was utilised. From the target population selected, one manager per establishment was chosen to participate in the survey (one manager x 5 fast food outlets x 6 branches = 30 managers in total). The study used a quantitative research approach, utilising self-administered surveys which were distributed by the researchers. Summarily, the study observed that there was a statistically significant difference ($p < 0.05$) among the managers regarding knowledge of healthy meals. Managers of two of the fast foods had better knowledge of healthy meals than managers of the other three fast foods. A lot still needs to be done across all sectors of the food industry. The South African government, specifically the Departments of Health and Tourism, should collaborate to develop regulations regarding inclusion of nutritional information on menus. Increasing fast food restaurant employees' awareness of the obesity epidemic can have a long-term impact because they will be able to easily promote healthier eating if they are better informed. The findings revealed that the managers agreed that more regulations were needed to help reduce obesity.

Keywords: obesity; fast food outlets; curbing; healthy eating

Introduction

Obesity, as defined by the World Health Organization (WHO), is the accumulation of excessive fat to the point where it may jeopardize a person's health (Roussev, 2014). According to Browning (2017), there are 1.9 billion adults and 42 million children under the age of five who are overweight or obese globally. The National Department of Health (NDoH) created the Strategic Plan for the Prevention and Control of Non-communicable Diseases (NCDs) 2013-2017 to provide guidelines for controlling the rapid increase in chronic conditions.

On March 4, 2021, the South African Department of Health (Department of Health, 2021) hosted a webinar to highlight their mission for World Obesity Day 2021, which is as follows, raising awareness; encouraging advocacy; improving policies, sharing experiences. Obesity and its consequences are depicted in Figure 1. It depicts how 800 million people worldwide are obese and how people who are obese are twice as likely to be hospitalized if they contract the Coronavirus (COVID-19). It also shows how the medical consequences of obesity will cost more than a trillion dollars globally by 2025, and how childhood obesity will rise by more than 60% in the next decade, reaching a peak of 200 million by 2030.

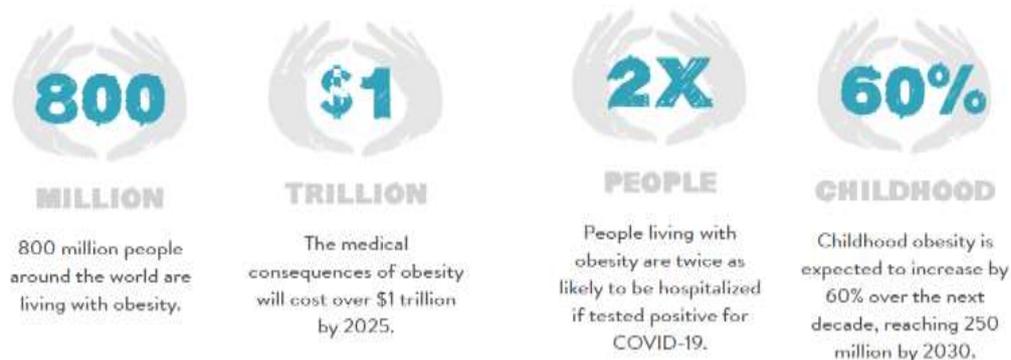


Figure 1: Global obesity and its effects
Source: Department of Health (2021)

The rise in the obesity pandemic and related NCDs is also attributed to the change in the food delivery system's industrialisation. The World Health Organization (2018) approves with this statement, proposing that dietary changes can be caused by changes in the environment and a lack of supportive policies in sectors such as health and food production. Adopting a Western diet has been shown to cause detrimental repercussions for human health and the environment because it creates an obesogenic environment, which aids or contributes to obesity. This diet is high in sugar, saturated fats, and processed foods, but low in fibre, and it has become increasingly popular as food marketing has gotten more compelling and attractive (Roussev, 2014). According to data from England's National Child Measurement Programme, one in every three children aged 10 to 11 is obese (Ashton et al., 2012). Nonetheless, in the Organisation for Economic Co-operation and Development (OECD) area, one out of every two adults and nearly one out of every six children are obese today (OECD, 2017). Obesity is linked to heart disease, diabetes, musculoskeletal diseases, and malignancies such as colon, kidney, gallbladder, breast, ovarian, prostate, liver, and endometrial cancer (World Health Organisation, 2018). High cholesterol, sleep apnea, osteoarthritis, reproductive troubles, and mental health conditions are examples of non-communicable diseases (Roussev, 2014).

In an effort to combat obesity, some fast foods have found a way to make healthy food choices available especially for kids. The Baltimore City Council intervention to combat obesity were done by approving legislation requiring healthy drinks as the default choice for 'happy meals' (Harris, 2018). Implementing correct policies can be a way to reduce the obesity epidemic worldwide.

Purpose of the study

The study's goal was to find out how fast food restaurants in South Africa's Gauteng region are combating obesity. This study focused on how managers of various fast food restaurants implement the relevant policy. To help curb obesity, the 111th US Congress enacted the Affordable Care Act, Public Law 111-148 (HR 3590), which stated and allowed food retailers and fast food restaurants, fast casual restaurants, and full-service restaurant chains with more than twenty locations to disclose calories on menus and menu boards and make other nutrition



information available to customers upon request (Kraak, 2018). This policy is not currently being implemented in South Africa, but it contains guidelines and recommendations that are being used to combat obesity in the country. Front-of-Pack Labeling (FoPL) is a nutrition warning label that highlights the excessive nutrients of concern and often includes the text "excess," warning consumers that the levels of those nutrients are above health recommendations; however, South Africa has not yet implemented this labelling system (Bopape et al., 2021). The research looked at how management communicated the policy and its recommendations to employees, as well as whether the regulations were followed in all fast food restaurants.

This study formed part of a bigger study which was to determine the contribution of fast food outlets to curbing obesity in Gauteng: Perceptions of managers and employees. This paper will only focus on the obesity regulations and the fast food outlets managers perceptions on promoting healthy eating and ways the fast food outlets can contribute to curbing obesity. Therefore, the sub objectives were to determine the current regulations that are in place to curb obesity and to assess and comparatively evaluate the perceptions of various fast food outlets managers on promoting healthy eating, knowledge of healthy meals, the effects of healthy meals and possible experiences in curbing obesity.

Literature review

Global perspective on obesity

Obesity is recognized as a disease in and of itself, as well as an illness that increases the risk of developing a variety of NCDs. On the other hand, not so much is known about the mechanism of action by which obesity increases the likelihood of infectious diseases, which can have serious health consequences (Lobstein, 2021). According to the OECD (2017), a number of countries have experienced an increase in obesity over the last few years, including Canada, France, Mexico, Switzerland, and the United States. Nevertheless, it has been estimated that 80% of NCDs such as diabetes, obesity, premature heart disease, stroke cases are preventable (Onyenweaku et al., 2022); and like the popular quote says “prevention is better than cure”.

In terms of fast-growing countries, eight of the twenty that face the challenge of adult obesity are found in Africa (Mwakideu, 2019). In the past, Africa was portrayed as a hungry and starving continent; however, obesity is now a growing health concern, particularly among the middle and lower classes in urban areas. According to Mwakideu (2019), one of the underlying issues in Africa concerning obesity is that there is an African myth in many households that having a pot belly is a sign of wealth and being well-fed. However, this is not correct because having a pot belly is a sign of poor nutrition and lack of adequate exercise. Additionally, World Atlas (2019) contends that obesity rates are relatively low in Africa. However, they are steadily rising across the continent, owing to increased urbanisation, nutrition transition (more fat-rich diets), and sedentary lifestyles. Surprisingly, Libya ranks 16th globally with regards prevalence of obesity and ranks first in Africa, with an obesity rate of 32.5 % in adults, which can be attributed to the Libyan diet's high fat and carbohydrate content; Egypt ranks 2nd on Africa's obesity scale. This is due to their traditional Arab diet, which is high in meat, sugar, and carbohydrates, as well as a lack of commensurate physical activity (Mwakideu, 2019).

South African perspective on obesity

The South African fast food industry is one of the most successful in the world. Despite the fact that the country faces significant economic constraints and has a weak currency, it has experienced significant growth (McKay & Subramoney, 2017). According to Doctor Nossel,



the head of Wellness at Discovery Vitality, South Africa faces a major obesity challenge, with 70% of women and 31% of men overweight or obese (BusinessTech, 2019). BusinessTech (2019) and Medical Brief (2020) both agree. They argue that South Africa's obesity epidemic shows no signs of abating and is on track to affect half of women and a quarter of men by 2025. Obesity is on the rise in South African children and adolescents, particularly in previously disadvantaged groups; this is due to cultural beliefs and practices that regard fat infants as healthy (Rossouw et al., 2012). This is due to the fact that the country is becoming more urbanized, which makes people more prone to becoming overweight or obese. According to Rossouw et al. (2012), South Africa, like other middle and low-income countries, faces a double burden of disease in which undernutrition and obesity coexist. According to the United Nations (2020), South Africa is ranked 25th in the world, indicating that obesity is a major issue in the country. Africa Check Sorting Fact from Fiction (2016) contends that because they used research from the World Health Organization's definition of obesity, i.e., refer to definition and terms, South Africa was ranked 44th out of 192 countries, with 26.8 % of adults obese. Furthermore, when overweight people are included, the number rises to 53.9 % of adults; however, the global ranking falls to 111th place. Obesity was ranked fifth in South Africa as a risk factor for premature death and years of disability lived (Department of Health, 2015). Obesity and fast food consumption have been linked. Obesity is a significant health issue in South African adults and children (Marais et al., 2010). Since then, South Africa has implemented a sugar tax in an effort to combat the obesity epidemic; the SBL is a new Health Promotion Levy that supports the Department of Health's deliverables to reduce diabetes, obesity, and other related diseases in South Africa (SARS, 2018). According to the University of the Witwatersrand, a proposed 20% tax on sugar-sweetened beverages could reduce obesity in 0.38 % of adults (Health24, 2018). According to Wilkinson (2018), one in every four South Africans is obese/overweight. However, before declaring South Africa the fattest nation in Sub-Saharan Africa, certain precautions must be taken due to the uncertainty of the estimates.

Curbing obesity

According to Musaiger et al. (2011), there are several ways to combat obesity, including increasing healthier options for people and ensuring the availability of healthier foods with fewer calories in developed and underdeveloped areas. There are several options for choosing healthier fast food meals, including the following: looking for healthy vegetarian options, whole grain options, limiting the number of starchy options, drinking water or milk instead of a soft drink, not upsizing the menu option, choosing a different side than chips, and constructing your own meal (Gerald & Dorothy, 2018). Because obesity is such a severe problem, several different entities will need to come together and work together to combat it. According to the Department of Health (2021), this can be accomplished because their motto for World Obesity Day 2021 was 'Everybody Needs Everyone,' and this notion was supported by many different entities, including the South African Military Health Service (SAMHS) and the Clinton Health Access Initiative (CHAI), to name a few. According to the Department of Health (2021), the NDoH has developed several ways to address the obesity problem in South Africa, including, reviewing and updating the Strategy for the Prevention and Control of Obesity in South Africa: 2015 – 2020, FoPL on foods in accordance with regulations falling under the scope of the Foodstuffs Cosmetics and Disinfectants Act, and the National Dietary Intake Study. In addition, Agbonlahor et al. (2009: 1689) concluded that “overweight and obesity involve the interaction of social, behavioural, cultural, physiological, metabolic and genetic factors”. Consequently, they recommended a multi-component intervention strategy to reduce obesity rates, which include nutrition and physical activities, adequate physical activity, providing nutrition education or dietary prescription, pharmacological and behavioural skills



development. These could go a long way in preventing and managing overweight and obesity among various population groups.

Fast food outlets influence on obesity

In the 2018 Fast Food Industry Analysis, one of the major forces influencing the fast food industry in America is consumers' shifting preferences toward healthier options. According to Gerald and Dorothy (2018), according to the National Restaurant Association, the number of adults who say they are attempting to choose healthier items at restaurants is increasing. The food industry has a significant impact on what and how people's eating habits change. According to Gerald and Dorothy (2018), and Pulido (2019), people are becoming more aware of their health and are finally realizing how important it is to know what they eat and how it affects their body's longevity. Restaurant owners can adapt to changing eating habits, food trends, and consumer preferences by changing their menus and using different cooking methods. These menu changes include, but are not limited to, allergen menus, menus reflecting healthier choices, menus allowing more health-oriented substitutions, menus changing based on in-season produce, menus including more and more functional ingredients, and menu offerings based on time and day to suit consumer preferences (Pulido, 2019).

Looking at current trends, South Africa is experiencing an unprecedented increase in the prevalence of obesity (Sartorius et al., 2017). Not much research has gone into linking fast foods and obesity in South Africa but one study reports that high-income earners are the most frequent consumers of western fast food in South Africa, while low-income earners are more likely to purchase local street food (Steyn et al., 2011). However, it should be noted that both western fast food and local street food are fat- and energy-dense and usually associated with higher consumption of carbonated drinks, which are all factors that contribute to South Africa's obesity epidemic (Ronquest-Ross et al., 2015; Steyn et al., 2011). In terms of the country's fast food market structure, research suggests that "both local franchises and multinational franchise corporations share a unique coexistence with supermarkets and informal traders" (Maumbe, 2012: 148).

Coronavirus and its effect on obesity

In December 2019, a relatively unknown strain of SARS-CoV-2 known as Novel Corona Virus 19 began to spread through Wuhan, China (COVID-19). The World Health Organization (WHO) declared the rapidly spreading disease a pandemic and urged countries to plan in accordance with the Global Strategic Preparedness and Response Plan by March 11, 2020. (Aday & Aday, 2020). It has become a massive pandemic, with over 13 million cases worldwide and nearly 600,000 deaths (RSA: National Department of Health, 2021). Various NCDs are linked to coronavirus severity, according to the (Department of Health, 2015). The fight against obesity and other NCDs that affect South Africans and the world in general needs to be more prominent and severe, as the COVID-19 pandemic in South Africa and internationally has identified a link between what the food and beverage sectors produce and what we consume and its consequences for disease (Department of Health, 2021).

COVID-19 is a disease caused by the SARS-CoV-2 coronavirus (World Health Organisation, 2020). Obesity, according to Nakeshbandi et al. (2020), is a risk factor for several COVID-19 outcomes, including increased hospitalizations, severe pneumonia, restrictive lung disease, and lipo-toxicity.

Regulations to curb obesity and implementation

The 111th US Congress enacted the Affordable Care Act, Public Law 111-148 (HR 3590), which was signed into law on March 23, 2010. In Section 4205, it mandated that "food vendors



and quick-service, fast-casual, and full-service restaurant chains with more than 20 US locations disclose calories on menus and menu boards and make other nutrition information available to customers upon request” (Kraak, 2018: 158). There is also a suggestion to implement zoning and other land-use policies, which can limit the number or location of fast food restaurants (Nixon et al., 2015). Nonetheless, Buchwald (2018) contends that the government is failing because the Affordable Care Act does not require coverage of metabolic surgery, owing to legislators' lack of understanding of the needs of the vast majority of obese populations. However, Nixon et al. (2015) argue that nutrition-focused policies were portrayed as inappropriate because they interfered with individuals' personal choices. It was an ineffective approach to addressing the obesity epidemic because the scarcity of restaurants would not change people's eating habits. Menu labelling may have the unintended consequence of encouraging fast food restaurants to offer lower energy items of lower nutritional quality than previously offered (VanEpps et al., 2017).

Menu labelling, on the other hand, has seen some success as consumers become more educated about the energy content of the fast food they consume. It also allows fast food restaurants to serve less energy dense food while maintaining the nutritional quality of the items (VanEpps et al., 2017). Despite the fact that public policymakers at all levels of government have debated various strategies aimed at reversing obesity, the problem is that the causes of obesity are complex (Garbarino et al., 2018). Once a strategy for reducing obesity has been chosen, it is often difficult to garner enough public support to support the policy. Above and beyond all of these recommendations, relevant policy influencers or makers can consider various options to reduce the obesity epidemic; this can be accomplished by regulating the ingredients that fast food outlets use, limiting toy giveaways with unhealthy food purchases, and regulating the different areas or zoning areas in which restaurants can operate; they should not be close to child-oriented locations and should not operate at night (Diller & Graff, 2011).

In the Affordable Care Act section 4205, a menu labelling provision was included and became law in March 2010; this provision requires “restaurants with 20 or more locations to provide calorie data and additional nutritional information for menu items and self-service foods” (Araujo et al., 2012: 588).

Methodology

Study area

The study was conducted in the Gauteng region, at five popular fast food outlets within the following areas: Johannesburg CBD and surrounding areas (Auckland Park, Melville, Cresta; Johannesburg East [Kempton Park, Birch Acres, Norkem Park], Johannesburg South [Soweto and Ridgeway], Johannesburg North, [Sandton and Rosebank], Pretoria [Centurion and Menlyn]). The number of respondents who completed the self-administered questionnaire is referred to as the response rate. The researcher personally distributed the questionnaires in both paper and online formats. The questionnaire was distributed to 30 managers, and five managers declined to participate in the study, yielding an 83% response rate. The 25 participants' responses were all valid, yielding a valid response rate of 100%. The study focused on fast food outlets in the Gauteng province only. This sample size was adequate for this study since the Kaiser Meyer Olkin Measure of Sampling Adequacy (KMO) = 0.522 was close to the commonly recommended value of 0.6 (Tabachnick & Fidell, 2007).

Study design and questionnaire administration

This study used a quantitative research method guided by research questions that assessed fast food outlets' contribution to reducing the Gauteng region's obesity epidemic. Data was gathered through the use of self-administered questionnaires filled out by managers. To assess the data



analysis, this study used a descriptive research design. Descriptive statistics summarize the characteristics of a specific group of participants. A questionnaire based on the foodservice industry's contribution in combating obesity (low kilojoule meals) was adapted from (Melani, 2018). According to Bougie and Sekaran (2016), descriptive studies are frequently designed to collect data describing characteristics of objects such as people, organizations, products, or brands. It may entail gathering quantitative data such as customer satisfaction ratings, production figures, sales figures, or demographic information. The study employed the use of a questionnaire with open-ended and closed-ended questions because different aspects of the questionnaire required an opinionated explanation rather than a pre-determined response. A cross-sectional study design was used for this research. A pilot test was conducted with three managers to assess if the respondents would understand the questions and ensure clarity of the questions. The pilot test was conducted about 2 weeks prior to the field-work.

Due to the COVID-19 pandemic, alterations to the study needed to be made, which led to two pilot studies being conducted. The first pilot study was a paper-based questionnaire, which became problematic, as many of the participants were reluctant to fill in the questionnaires due to the fear of the spread of the virus. This resulted in a digital questionnaire being formulated, as it reduced the risk of spreading the virus as the electronic device, i.e., tablet, cellular phone or laptop, was regularly sanitised.

Data/statistical analysis

The findings of this study are based on quantitative data gathered through the use of a questionnaire in response to the study's research questions and objectives. The researcher gathered information from various fast food restaurants. The IBM Statistical Package for the Social Sciences (SPSS) version 27 was used to analyse the data. The following statistical techniques were used to analyse the study data: frequencies, custom tables, means, standard deviation, exploratory factor analysis, reliability analysis, and One-Way ANOVA.

Results and discussion

Demographic statistics of the respondents

Table 1 below presents the demographic statistics of the managers from the different fast food outlets. The majority of the manager respondents were females 64% (n=16) and the rest were males 36% (n=9). Regarding race, there were 17 (68%) black managers, 4 (16%) white managers and 4 (16%) coloured managers that took part in the study. The majority of the managers (9) either had a certificate or a diploma (36%), those who had a bachelor's degree(s) were 8 (32%), those who had Grade 12 (Matric, Std 10) were 7 28%, and one (4%) manager had a post-graduate degree. Table 1 illustrates that the managers from each fast food outlet, i.e., A, B, C, D and E respectively made up 20% as five respondents from each fast food outlet participated in the study bringing the total number of participants to 25. The popular fast food outlets requested to remain anonymous hence they will be referred to A – E. The age of the respondents ranged from 18 to 36 years.

Fast food outlet managers' awareness level of obesity in South Africa

According to Table 2, managers' opinions on what more can be done to reduce the country's obesity epidemic vary, with 12% saying they don't know, 8% saying nothing needs to change, 16% saying more laws/regulations need to be implemented and put in place, 4% saying more awareness is needed, 48% saying more people need to be educated, and 12% saying South Africa needs to do more. The majority of managers (64%) agreed that the foodservice industry was adapting to consumers' healthy eating habits. However, 8% believe the industry is failing to adapt to consumers' healthy eating habits.



Table 1: Managers' demographics

Variable	Category	Frequency (n)	Percentage (%)
Age	18-25	5	20
	26-29	11	44
	30-36	9	36
	Total	25	100
Gender	Male	9	36
	Female	16	64
	Total	25	100
Race	Black	17	68
	White	4	16
	Coloured	4	16
	Total	25	100
Highest Education qualification	Grade 12 (Matric, Std 10)	7	28
	Diploma or Certificate	9	36
	Bachelor's degree(s)	8	32
	Post-Graduate Degree(s)	1	4
	Total	25	100
Fast Food Outlet	A	5	20
	B	5	20
	C	5	20
	D	5	20
	E	5	20
	Total	25	100

Source: Researchers own construct

Table 2: Awareness of obesity epidemic in South Africa

Variable	Category	Percentage (%)
Managers opinions on what more can be done to reduce the obesity epidemic	Gym	12
	Education	48
	Awareness	4
	Law/Regulations	16
	Nothing needs to change	8
	I do not know	12
	Total	100
Manager's opinion to foodservice industry adaptation to consumer healthy eating habits	Yes	28
	No	8
	Partially	64
	Total	100
Manager's opinion in reducing the obesity epidemic in the country	Yes	80
	No	20
	Total	100
Awareness that South Africa was ranked 25th in the world in terms of obesity	Yes	72
	No	28
	Total	100

Source: Researcher's own construct

Current industry regulations to curb obesity

In terms of the Affordable Care Act, Public Law 111 – 148 (HR 3590) policy, only 52% of managers were aware of it, while the remaining 48% were not. When asked if they were willing to follow the guidelines outlined in Public Law 111-148 (HR 3590), they responded as follows: 44% said they would partially follow the guidelines, while 16% said they would completely follow the guidelines. In terms of whether the policy would be useful in their establishments,



40% said it was not applicable, 44% said it would be partially useful, and 16 % said it would be very useful, as shown in Table 3 below.

Table 3: Regulations to curb obesity

Variable	Category	Percentage (%)
Awareness of the Affordable Care Act, Public Law 111 – 148 (HR 3590) policy	Yes	52
	No	48
	Total	100
Willingness to follow the guidelines offered by the Affordable Care Act, Public Law 111 – 148 (HR 3590) policy	Not Applicable	40
	Partially	44
	Yes	16
	Total	100
The policy usefulness in establishments	Not Applicable	40
	Partially	44
	Yes	16
	Total	100

Source: Researchers own construct

Managers’ perceptions and responses on promoting healthy eating in fast food outlets

Table 4 shows the means of items measuring the promotion of healthy meals range from 1.96 to 3.52, indicating a range of results ranging from general disagreement to general agreement. Table 4 also shows that many managers (28 % to 60 %) responded in a moderate or neutral manner. None of the managers reported that their menu includes kilojoule labelling to indicate the number of calories in various meals and that their fast food restaurants plan their menus in accordance with the food pyramid. However, 52 % of participants did encourage staff to promote healthy menu items, and 40 % provided a variety of meal options prepared with minimal fat.

Table 4: Managers’ responses to promoting healthy eating in fast food outlets

Description of item	Strongly disagree/ disagree	Neutral	Agree/ strongly agree	Mean (n)	SD
The menu offers a variety of meal options that have been prepared with minimal fat	16%	44%	40%	3.32	1.108
Management encourages staff to promote menu items that are healthy	20%	28%	52%	3.52	1.046
The menu caters for guests who are health conscious	40%	28%	32%	2.88	1.364
The menu has kilojoule labelling to indicate to the guests the calorie in a meal	64%	36%	0%	1.96	0.889
The fast food outlet adjusts its menu according to customers health preferences	12%	60%	28%	3.20	0.707
The fast food outlet follows the food pyramid when planning the menu	44%	56%	0%	2.36	0.810
The menu has the option to substitute fries with seasonal vegetables or fruit	48%	36%	16%	2.52	1.085

Key: On a Likert scale of 1-5, 1 is strongly disagree, 2 is disagree, 3 is neutral, 4 is agree, 5 is strongly agree Source: Researchers own construct

Assessment of Managers’ knowledge and awareness level of obesity

Table 5 shows that the means for measuring managers' knowledge and awareness of obesity ranged between 3.20 and 4.76. These mean values above 3 indicate the participants' overall agreement with the various aspects of obesity knowledge and awareness.

It is evident from Table 5 that management informs staff members when a new menu item is added to the menu, as 96 % of respondents strongly agreed, and 4 % respond moderately. Table 5 also shows that the managers were knowledgeable about the cooking methods used, with 96% strongly agreeing. The majority of managers (80%) indicated that fast food is fattier than home-cooked meals. When asked if they were aware of the country's rising obesity epidemic, 4% disagreed, 12% responded moderately, and 84% strongly agreed. Customers' demand for healthy items is increasing as indicated by the general agreement of



60%. Regarding the knowledge of different seasonal fruit and vegetables available on the menu, 64% of the managers revealed that they were knowledgeable.

Table 1: Managers' responses on knowledge & awareness of obesity

Description of item	Strongly disagree/ disagree	Moderate	Agree/ strongly agree	Mean	SD
Management informs staff after new menu item have been added to the menu	0.0%	4.0%	96.0%	4.64	.569
As a manager, I am aware of the rising obesity epidemic in the country	4.0%	12.0%	84.0%	4.36	.860
As a manager, I am knowledgeable on the cooking methods used where I work	0.0%	4.0%	96.0%	4.76	.523
Fast Food, food is fattier than home-cooked meals	0.0%	20.0%	80.0%	4.44	.821
Customers demand for healthy items is increasing	4.0%	36.0%	60.0%	3.68	.748
We provide training with regards to healthy meals	28.0%	40.0%	32.0%	3.20	1.155
Staff is knowledgeable on healthy meals offered at the establishment	16.0%	40.0%	44.0%	3.48	1.005
As a manager, I am aware of the different seasonal fruit and vegetables available on the menu	4.0%	32.0%	64.0%	3.76	.926

Source: Researchers own construct

Managers' perceptions on the effects of healthy meals on fast food outlets

The means of items measuring the effects of healthy meals range from 4.04 to 4.32, as shown in Table 6 below, indicating that the majority of the results agreed with the aspects that contribute to the effects of healthy meals. According to the managers, having healthy meals on the menu has a moderate impact on the fast food outlet's image, as shown by 40% who neither agreed nor disagreed, while 44% strongly disagreed/disagreed that it has an influence. Managers also believe healthy meals improves the image of fast food restaurants, as indicated by the 72% general agreement. When asked if having healthy meals on the menu attracts a new market, 80% of respondents agreed/strongly agreed to that statement. Table 6 also depicts the managers' responses from the respective fast food outlets on how healthy meals improve customer satisfaction; 68% strongly agreed and 32% perceived healthy meals to moderately improve customer satisfaction.

Table 2: Responses on the effects healthy meals have on fast food businesses

Description of item	Strongly disagree/ disagree	Neutral	Agree/ strongly agree	Mean	SD
It has no influence on the fast food outlet's image	44%	40%	16%	4.04	1.020
It improves the fast food outlets image	4%	24%	72%	4.24	1.012
It promotes return business	4%	16%	80%	4.32	1.030
Attracts a new market	4%	16%	80%	4.16	0.898
It improves customer satisfaction	0%	32%	68%	4.04	1.020

Key: On a Likert scale of 1-5, 1 is strongly disagree, 2 is disagree, 3 is neutral, 4 is agree, 5 is strongly agree

Source: Researchers own construct.

Validity and reliability tests

Exploratory Factor Analysis (EFA) was conducted in this study as a factor or construct validity technique. Twenty questions relating to promoting healthy eating, knowledge of healthy meals and effects of healthy meals were factor analysed using Principal Components Analysis (PCA) with varimax rotation. The results of the EFA are shown in Table 7 below.

Prior to performing EFA, Kaiser Meyer Olkin Measure of Sampling Adequacy (KMO) and Bartlett's Test of Sphericity were performed to measure the factorability of the data. It can be seen from Table 7 below that the KMO = 0.522 close to the commonly recommended value of 0.6 Tabachnick and Fidell, (2007) and Bartlett's Test of Sphericity was statistically significant (p-value < 0.05) Bartlett, (1954) suggesting that the data was suitable for factor



analysis. Using the Kaiser’s eigen value criterion (Kaiser, 1974) to determine the underlying components, the analysis yielded three factors explaining a total variance of 76.032% above the threshold value of 60% (Hair et al., 2014). Factor 1 was called EHM (Effects of Healthy Meals) because of the high loadings by the following items: It promotes return business, attracts a new market, it improves the fast food outlets' image, and it improves customer satisfaction. This first factor with an eigenvalue of 3.495 explained 31.7750% of the total variance. Factor 2 was called PHE (Promoting Healthy Eating) because of the high loadings by the following items: The menu caters for guests who are health conscious, the menu offers a variety of meal options that have been prepared with minimal fat, the fast food outlet adjusts its menu according to customers health preferences and management encourages staff to promote menu items that are healthy. This factor with an eigenvalue of 3.054 contributed 27.76% of the total variance.

Factor 3 was called knowledge of healthy meals (K) because of the high loadings by the following items: Customers demand for healthy items is increasing, as a manager, I am aware of the rising obesity epidemic in the country and as a manager and I am aware of the different seasonal fruit and vegetables available on the menu. This factor with an eigenvalue of 1.815 accounted for 16.496% of the total variance. Nine items namely EHM1, PHE4, PHE6, PHE 7, K1, K3 K4, K6 and K7 were deleted from the factor solution due to low factor loadings below 0.5, and that some of the items were not measuring what they were intended to measure (Pallant, 2010). To assess reliability in this study, Cronbach’s alpha coefficient was utilised. The satisfactory value of alpha ranges from 0.70 to 0.95 (Tavakol & Dennick, 2011). As indicated in Table 7, all the Cronbach alpha values are above the suggested level of 0.7, suggesting that the research instrument was reliable.

Table 7: Exploratory factor and reliability analysis results

Codes	Variable	Factor Loadings		
		EHM	PHE	K
Factor 1: Effects of Healthy meals (EHM)				
EHM3	It promotes return business	0.979	-0.075	0.006
EHM4	Attracts a new market	0.959	-0.010	-0.049
EHM2	It improves the fast food outlets' image	0.904	0.128	-0.016
EHM5	It improves customer satisfaction	0.777	-0.150	0.212
Factor 2: Promoting Healthy eating (PHE)				
PHE3	The menu caters for guests who are health conscious	-.063	.851	.016
PHE1	The menu offers a variety of meal options that have been prepared with minimal fat	.119	.829	.302
PHE5	The fast food outlet adjusts its menu according to customers health preferences	-.307	.784	.243
PHE2	Management encourages staff to promote menu items that are healthy	.069	.760	-.101
Factor 3: Knowledge of Healthy Meals				
K5	Customers demand for healthy items is increasing	-.015	.208	.876
K2	As a manager, I am aware of the rising obesity epidemic in the country.	.110	-.010	.818
K8	As a manager, I am aware of the different seasonal fruit and vegetables available on the menu	.003	.069	.771
Kaiser Meyer Olkin Measure of Sampling Adequacy (KMO)		0.522		
Bartlett’s test of Sphericity		p- value < 0.05		
Eigenvalues		3.495	3.054	1.815
% Of Variance Explained		31.775	27.760	16.496
Total Variance Explained		76.032		
Cronbach’s Alpha		0.931	.801	.771

Source: Researchers own construct

One-way ANOVA and post hoc tests results for managers’ responses

Table 8a shows that there were no statistically significant differences in the managers' perceptions of healthy eating i.e. PHE ($p = 0.061$) and the effects of the healthy meals i.e. EHM ($p = 0.069$). There was a statistically significant difference in the managers' perceptions of healthy meal knowledge ($p = 0.016$). As a result of the significant statistical difference in the managers' perceptions of healthy meals, it is ideal to investigate where the difference lies across the five fast food outlets using the Tukey's HSD Tests, as demonstrated by the Post Hoc Tests



results (in Table 8b). Table 8b shows that there were statistically significant differences ($p < 0.05$) in the managers' knowledge of healthy meals. Managers of fast food B and D had better knowledge than managers of fast food A, C and E.

Table 8a: Managers' One-Way ANOVA Results

Fast food outlet	Fast Food Outlets – Mean (SD)					p-value
	A	B	C	D	E	
Promoting Healthy Eating Knowledge of Healthy meals EHM	3.10 (0.84)	3.00 (1.26)	2.75 (0.53)	4.20 (0.48)	3.10 (0.34)	0.061
	3.93 (0.43)	4.27 (0.60)	4.07 (0.43)	4.33 (0.53)	3.07 (0.80)	0.016
	4.00 (0.73)	5.00 (0.00)	4.45 (0.82)	3.45 (1.32)	4.05 (0.54)	0.069

Source: Researchers own construct

Table 8b: Post hoc tests on knowledge of healthy meals

Fast food outlets	Probability values
B (M= 4.27, SD= 0.60) & E (M= 3.07, SD= 0.80)	p-value =0.026
D (M= 4.33, SD= 0.53) & E (M= 3.07, SD= 0.80)	p-value = 0.017

Source: Researchers own construct

According to the findings of this study, when it comes to managers' awareness of the obesity epidemic in South Africa, 64 % of managers agree that the industry is adapting to consumers' healthy eating habits. Kesa and Melani (2015) conducted a study that enunciates these findings, as their qualitative findings highlight the various themes that food and beverage managers identify regarding how the industry is adapting to this new trend of healthy consumer eating habits. The results of the managers agree with Discovery Vitality (2017: 29), which states that what is trending fast in fast food outlets is an increased demand for healthier fast food options and that ordering food through mobile apps and deliveries is more convenient. However, Cheng and Liu (2019: 2525) argue that there is a plethora of factors that influence food choice, including cultural/societal factors, psychological, economic, and gender factors.

The researcher discovered that fast food managers' responses to PHE in their results indicate that the menu can substitute fries with seasonal vegetables or fruit, to which 48 % strongly disagree/ disagree, 36 % moderately disagree, and 16 % agree/ strongly agree. According to Health Canada, a balanced meal should contain half fruits and vegetables, (Pulido, 2019). This also agrees that the respective fast food outlet menus must have menu substitution available and provide balanced and varied food options from the various food groups as specified by (Pulido, 2019). The researchers can conclude from the managers' responses on knowledge and awareness of obesity that management informs staff after new menu items are added to the menu because 96 % of the respondents strongly agree/ agree and 4 % of the respondents are moderate in their response. Concerning whether fast food restaurant employees were given training on healthier food options, it should be noted that, more importantly, there should be health awareness among restaurant personnel about how to prepare healthy and low-calorie foods, not just being informed about the establishment's menu (Musaiger et al., 2011). The results of the managers' responses to the aspects of training employees on healthier food options show that 40% of the managers responded negatively when asked if staff members (waiters) were trained or informed about the availability of healthy meals, and 60% responded positively. This in a way implies that the fast food establishments are yet to properly see the need to incorporate healthy diets into their menus. This could be because they think it will reduce their profit levels due to lower patronage since the 'junk' foods are more appealing to the public.

Furthermore, these results show that there were no statistically significant differences in the managers' perceptions of PHE and the EHM. The results of this study show that there



are statistically significant differences in the managers' perceptions of healthy meals between managers of B, D and E fast foods while managers of A and C had statistically similar levels of perception of healthy eating. This shows that the managers generally have a good idea of the effects of healthy eating but are not as aware of what exactly constitutes healthy diets, therefore, they need more enlightenment in this regard. A suggestion for further study would be to assess whether increased knowledge of healthy eating among stakeholders would positively affect the fast food business. This will establish if an increase in nutrition knowledge would suffice in fighting the rise in NCDs or if people would still place financial profit above societal wellbeing despite their awareness.

Implications/conclusion

The findings of this study show that key role players like the fast food outlet managers need to be more enlightened on the need for healthier food alternatives and the effect they have on reducing the prevalence of non-communicable diseases (NCDs) such as obesity. Custom tables were used to assess managers' perceptions/knowledge of promoting healthy meals and its positive effects, as well as the perceived challenges they faced. A one-way ANOVA analysis was used to look for statistically significant differences in how fast food managers perceive PHE, knowledge of healthy meals, and the effects of healthy eating. Managers of fast food B and D had better knowledge of healthy eating than managers of fast food A, C and E.

The main findings revealed that the managers agreed that more regulations were needed to help reduce obesity. There is much room for improvement, and the South African government, specifically the Departments of Health and Tourism, must collaborate to develop regulations that are easier to follow and implement in order to aid in the fight against obesity. Restaurant employees' awareness of the obesity epidemic and its dangers also needs to be improved via proper nutrition education. There are also several gaps in how fast food restaurant managers think that healthy meals should be promoted, their knowledge of healthy meals, the outcome of healthy diets, and possible experiences in obesity prevention. This is a cause for concern because all the above-mentioned, play a critical role in reducing obesity hence increased awareness and healthy food adverts is hereby advocated for.

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