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HEALTHINESS OF FOODS ON PROMOTIONAL FLYERS OF SELECTED ACCRA-BASED SUPERMARKETS

BY

PATIENCE TSRAH

10602628

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DECLARATION

I PATIENCE TSRAH declare that except for other people's investigations/ work which have been duly acknowledged, this work is the result of my own original research, and that this dissertation, either in whole or in part has not been presented elsewhere for another degree.

Patience Tsrah	Dr. Amos K. Laar
(Student)	(Supervisor)
Signature: ……	Signature: ……
Date: ……	Date: ……

ABSTRACT

Introduction: Supermarket shopping is greatly influenced by the level of income, ultra-processed foods, smaller bottles of soft drinks, convenient ready-to-eat products and foods processed to suit local taste. The increase in purchase is due to promotion of these food items in, for example, food promotional flyers, and at heavy discounts. These efforts are gradually shifting consumers' dietary pattern from complex carbohydrates to energy rich, refined and highly processed foods (Junk foods) known to be the leading causes of Non-Communicable Diseases.

Objective: To assess the healthiness of foods on promotional flyers of selected Accra-based supermarkets.

Methods: A quantitative, cross-sectional study was carried out using content analysis of food promotional flyers in the major Accra based supermarkets. All the four major shopping malls in Accra were selected for this study using purposive sampling. Supermarket flyers (32) were collected through mystery shopping, the content of flyers were coded and entered into excel, exported into SPSS statistical software package for analysis into tables and graphs.

Results: The result of the study shows that all the foods promoted in the supermarket food flyers were unhealthy (high sodium / saturated fats - 71.9%, high sodium exclusively - 18.8% and added sugar foods - 9.4%). These unhealthy foods were greatly discounted at an average percentage discount of 27.5%. Major claims that were associated with the promotions were price benefit claims (54.0%) and puffery size claims (34.0%) (Appendix 3).

Conclusion: The results of the study clearly show that Accra-based supermarkets heavily promote unhealthy food items in promotional flyers at great discounts, which could cause substantial consumption of saturated fats, high sodium and added sugar foods and beverages that could significantly escalate the overweight, obesity and hypertension burden in Accra.

DEDICATION

I dedicate this work to my husband, Mr Caleb Nnuro-Frimpong, for his constant encouragements and dedicated support.

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I would like to express my profound gratitude to God for His ever present grace and mercy. God has been good to me and my entire family through it all.

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LIST OF ABBREVIATIONS

NCDs	Non-Communicable Diseases
PAMJ	Pan African Medical Journal
UNFAO	United Nations Food and Agriculture Organization
WHO	World Health Organization
HBFC	Health Bridge Foundation of Canada
GDHS	Ghana Demographic and Health Survey
FT	Food Trust
RWJF	Robert Wood Johnson Foundation
USDA	United States Department of Agriculture
CDC	Communicable Diseases Control
UKMRC	United Kingdom Medical Research Council
QMS	Quality Meat Scottland
RF	Rockefeller Foundation
NPC	National Population Council
INFORMAS	International Network for Food and Obesity / NCDs Research Monitoring and Action Support
FDA	Food and Drugs Authority

CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

Eating of unhealthy foods may result in health problems such as high blood pressure, excessive weight gain or obesity (Le, Banegas, & Rodr, 2016). These problems are known to be the major risk factors for Non-Communicable Diseases (NCDs). Obesity is a risk factor for coronary heart diseases, type 2 diabetes, hypertension, stroke and other chronic illnesses (Sturm & An, 2015). NCDs have surpassed communicable diseases as the leading cause of death in most parts of the world (Vos et al., 2015). In Africa, the burden of disease is fast shifting towards chronic non-communicable diseases (PAMJ, 2013). Overweight and obesity are partially the results of excessive calorie intake and sedentary lifestyle. It has been recognized that an environment that encourages unhealthy eating patterns contribute to the development of overweight and obesity (Le et al., 2016). Environmental factors such as the availability of products and the ease of preparing food in-store (e,g, food shops, eating places and restaurants in shopping malls) have made supermarkets the ideal place for consumers to buy food. There are many factors that inform consumers' choice: store atmosphere, branding, in-store marketing, coupons and advertisements. About 60% of decisions about what to buy are made in-store and are normally unplanned (Johnson, 2011).

The strategy which supermarkets employ to persuade consumers to buy food are 'the four Ps' of marketing – product, placement, price and promotion (FT, 2011). These strategies involved in pricing and promoting of food items greatly affect food purchases in supermarkets but pricing especially has a greater influence (Steenhuis, Waterlander & Mul, 2011). Research has shown that discounting the prices of fruits and vegetables have influenced the purchasing of these healthy products as well Johnson R. W. (2011).

According to Ziliani and Leva (2015) the use of flyers to distribute and communicate supermarket food promotion has been acknowledged as an important tool for attracting consumers into stores but most of these consumable products are ultra-processed , energy dense, ready-to-eat and normally without nutritional value (Gittelsohn et al, 2017). The assessment of these supermarket food promotional flyers is a necessary step in an all-inclusive approach to healthier food selling initiatives.

1.2 Statement of Problem

Worldwide obesity has more than doubled since 1980. Thirty-nine percent (39%) of adults aged 18 years and over were overweight in 2014 and 13% were obese (Communicable Disease Control, 2015). Increases global obesity rates are not simply due to a greater access of food, they reflect a shift in people's eating habits, from healthy nutritious whole foods to heavily processed products Hakkak and Bell (2016). .

The 2013 global burden of diseases study also reported overweight and obesity prevalence in Ghanaian adult (>20 years) males (overweight =15.4%; obesity = 2.5%) and females (overweight = 29.1%; obesity = 9.8%) (Vos et al, 2015). The WHO estimates in 2008 that around 7.5% Ghanaians were obese with higher prevalence in women (10.9%) than men (4.1%). The GDHS from 1993 to 2014 also reported an increasing prevalence of obesity of among Ghanaian women (15 -49 years) from 3.4% to 15.3%.

Furthermore, a systematic review by Commodore-Mensah et al reported overweight/obesity prevalence in Ghanaian adults as 20% - 62% (Commodore-Mensah, Ofori-Asenso, Agyeman, Laar & Boateng, 2016). The fast spread of supermarkets and related shifts in diets were identified as possible factors contributing to overweight and obesity in developing countries (Demmler et al, 2017).

Globalization has caused the rise of supermarket food chains in developing countries including Ghana (Qaim, 2018). Meanwhile, these supermarkets and large food chains have

largely replaced fresh food markets as a major source of food supply in most countries and at a faster rate in developing than developed countries (Parfitt, Barthel & Macnaughton, 2010). The food industry then spends billions of dollars on persistent and pervasive marketing and promotion of unhealthy foods in the supermarkets. Also, varied pricing mechanisms are used to stimulate demand for unhealthy products (Gittelsohn et al , 2017).

According to Umberger et al, 2015, in a study (titled 'Supermarket use and over nutrition in urban Indonesia'), there's some evidence that supermarkets use leads to increase likelihood of over-nutrition in higher income urban households, a risk factor for NCDs. It has been discovered that supermarkets use food promotional flyers to significantly attract consumers into stores (Ziliani , 2000) but there's not enough research conducted to prove this fact in Ghana. Also, successful implementation of healthier food retail approaches depend upon reliable information on the food retail environment which is currently not available for the Ghanaian population.

It is therefore necessary to assess the major food retail supermarkets of Accra (the capital city of Ghana) to understand the extent and nature of super-marketization before strategies can be implemented to improve healthier food retail for the country. This assessment is tailored to address the healthiness of the promotional flyers that the supermarkets employ to promote food items. The information gained from the assessment can be used to prioritize and plan healthier food retail strategies, and inform decision-makers where interventions are necessary.

1.3 Significance of the Study

In view of the present and predicted scale of non-communicable disease epidemics worldwide, the only evidence-based mechanism that can prevent harm caused by unhealthy commodity industries are public regulation and market interventions (Moodie et al., 2013). It is generally assumed that, supermarkets promote unhealthy foods more heavily than healthy

foods. Promotional flyers are known to be effective tools used by supermarkets to promote unhealthy food choices (Ziliani et al, 2015). In the Ghanaian setting, there's lack of good quality evidence on supermarket food promotional flyers. Therefore, the aim of this study is to determine the healthiness of food used on promotional flyers of Accra-based supermarkets.

Data generated from this study will be used to inform policy. The policy document can be used to improve the quality of food items promoted in order to increase the purchase of targeted healthy food items in Accra-based supermarkets. The results can also be used to link leading supermarkets, manufacturers, marketers, consumer product design experts and public health researchers in the city to jointly explore strategies with high potential in promoting healthier diets for families, especially those in lower income households.

Another important benefit from combining ideas from all of these sectors to share and brainstorm innovative marketing strategies, is to help consumers make healthier choices and at the same time, meet retailers and manufacturers business goals. This can further promote collaboration between food retailers and manufacturers, to maximize the understanding, impact and spread of promising marketing approaches that encourage healthy eating.

1.4 Research Questions

1. How healthy are the foods that supermarkets promote on flyers?
2. How significant is the price discount for foods discounted on promotional flyers?
3. What forms of claims are associated with the promotions in the food flyers?

1.5 Main and Specific Objectives

Main Objective

To ascertain the healthiness of foods used on promotional flyers in Accra-based supermarkets.

Specific Objectives

1. To determine the healthiness of food items on promotional flyers of the Accra mall, Junction mall, Achimota mall and West-Hills mall.
2. To estimate the price discounts of foods on the promotional flyers in the malls.
3. To ascertain the claims associated with the food promotions in the promotional flyers of the malls.

1.6 Conceptual Framework

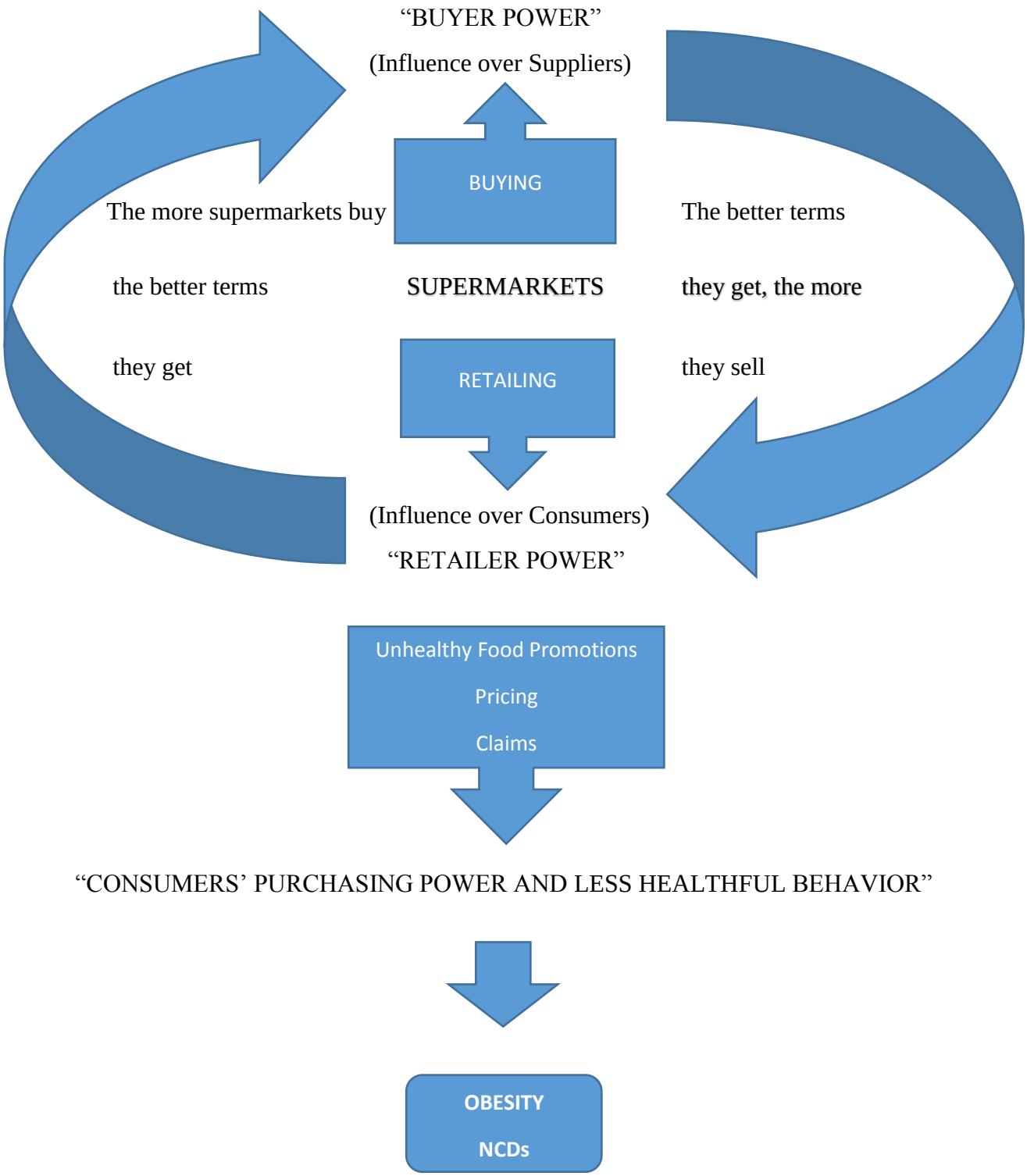


Figure 1. Relationship between Supermarkets' Buyer Power, Retailer Power and Consumer Power and Behavior

Source: Consumers International, 2012.

The conceptual framework above illustrates the relationship between supermarkets 'buyer power', 'retailer power' and consumers' purchasing power. The powers are mutually reinforcing; as retail market shares go up, supermarkets are able to get better deals from their suppliers to make better deals to consumers. Consumers' purchasing power increase with good deals, and would not exist without retail power and vice versa.

Promotions, pricing and claims are included in the retailer deals to increase consumers' purchasing power. The promotion of unhealthy food products in supermarkets at cheap prices could increase the risk of obesity and NCDs.

CHAPTER TWO

LITERATURE REVIEW

2.1 Healthy Food

A healthy food is a term that is used to describe foods that are better than other foods but in the same food group. Eating of a balanced diet is generally known to be healthy eating. The eating of a healthy food is important to public health to ensure a healthy population (Mcgill, Iii & Devareddy, 2015).

Healthy food is defined by the Dietary Guideline for Americans as a food containing a variety of vegetable from all of the food sub-groups, whole fruits, grains, low fat dairy, protein foods and oil (USDA, 2015). According to the same guideline, a healthy eating pattern limits the intake of saturated fats, added sugars and high sodium. These healthy foods cover a wide range of products that can improve health (Nerli, Hiremath & Shettar, 2015). Recommended nutrition guideline for Indians also defines healthy eating as; adult serving, carbohydrate intake should be (50-60) %, free sugars 10%, protein (10-15) %, salt 6g per day and fat (20-30) % (Johnson & Sahu, 2012).

Also, the guideline for South-Africans recommends the use of salt, fats and sugar sparingly, drinking a lot of safe water, eating fish, chicken, lean meat or eggs daily, milk or yoghurt every day, beans and peas regularly, fruits and vegetables every day and making starchy foods the most part of meals (South-Africa Department of Health, 2013).

There is enough evidence to prove the relationship between healthy food and healthy life. Eating healthily comes with healthy body cells, tissues, organs and organ systems in the human body as compared to not eating healthily. Improved access to healthy food is good for the brain and academic achievements (Communicable Disease Control, 2014). Having good access to supermarkets that sell healthy foods like fruits, vegetables, staples and other

wholesome produce at cost affordable with an average income, goes a long way to ensure healthy eating with nutritious diets essential for growth and development (Bell et al, 2010).

The concept of healthy eating and healthy living is embraced by most countries in the world. Regular access to a healthy diets is a valid requirement throughout life to ensure healthy living. The relationship between food, nutrition and health is dynamic, complex and multi-faceted influences that could be socio-economic, biological, environmental, cultural and some behavioral factors (UKMRC, 2017). The application of health psychology to eating behaviors show that vitamins and minerals from healthy diets may improve health, especially mental health, showing an important effect of food on the modulation of mental health, from individual level to population wide level (Gómez-pinilla, 2010).

The complex nature of food, nutrition and health results in an existence of a significant relationship between physical activity, diet and health. Excess weight gain is a result of an imbalance between energy consumed and energy used, which means that eating healthily or less food can contribute to weight loss, thereby preventing overweight and obesity (Wollaston et al., 2015). Supermarkets have several interventions to reduce unhealthful food choices (Escaron, Meinen, Nitzke & Martinez, 2013)

2.2 Unhealthy Food

Some researches indicated that food becomes unhealthy if a composite food lacks the right amount from each of the main food groups; carbohydrate, fats, proteins, vitamins and minerals. A composite food is a dish or meal that has more than one kind of food item in them, example; pizza, pies, burger and sandwiches are made from more than one food group (QMS, 2002). Just like pizza, pies and burger, fast foods are easy to prepare and easy to eat with usually low nutritional value and they are termed ‘junk foods’(a phrase coined in 1972) (Bhaskar, 2016).

Foods that have low nutritional value have adverse effects on health. There are several studies that unearth the health related problems that arise with eating junk foods. A study performed by Payab et al revealed a high association between junk food consumption and high blood pressure and obesity among Iranian children and adolescents (Payab, Kelishadi & Qorbani, 2015). Eating unhealthy foods and becoming obese can result in serious life threatening issues ; hypertension, type II diabetes, heart diseases, infertility and several forms of cancers (Jiang, Lu, Zong, Ruan, & Liu, 2016). Meanwhile developing countries are heavily patronizing unhealthy foods (RF, 2013).

2.3 Relationship between Unhealthy Food, Obesity and NCDs

There's a link between marketing exposure (of high fat, sodium and added sugar foods) to consumers and consumption of fast foods, with increased number of adverts (Thomas et al., 2018), which plays a significant role in the cause of NCDs (Naicker, Venter, Macintyre, & Ellis, 2015).

Studies have shown that, there's a relationship between weight gain and fast food eating during the day (Almuhanna, Alsaif, Alsaadi, & Almajwal, 2014) , and at night (Poudel, 2018). As the devastating consequences of eating fast foods cannot be over emphasized, junk foods were found to be associate with severe forms of obesity (Garcia & Sunil, 2012).

Hakkak and Bell (2016) found in a study that consumption of fast food is linked with obesity which can result in chronic diseases such as liver disease, cardiovascular diseases, type 2 diabetes and cancer. Obesity found its way among young people such as; in-school children that were fond of junk foods (NIH, 2013). In India, junk foods such as burger, pizza, cheese and oily items were associated with overweight and obese adolescents (Kurukshetra, Goel, Kaur, & Gupta, 2013).

Unhealthy food environments lack access to foods such as fruits and vegetables, variety of whole foods and healthier pre-packed meals (Rideout, Mah, & Minaker, 2015). However, in healthier food environments, there are opportunities for food retailing, distribution and production networks to support healthy eating (Rideout et al., 2015) to prevent NCDs.

Diet-related non-communicable diseases are cardiovascular diseases, type 2 diabetes and nutrition-related cancers with the exception of; stunting, osteoporosis, undernutrition, mental health, gastrointestinal diseases and micronutrients deficiencies (Laar et al., 2018).

Cardiovascular diseases (major NCD) can further be explained as disorders of the heart and blood vessels including; pulmonary embolism, congenital heart disease, peripheral arterial disease, coronary heart disease, deep vein thrombosis, rheumatic heart disease and cerebrovascular disease (WHO, 2015). People who are likely to die from stroke, heart attack and cancer by 2030 are today's young people (WHO, 2018) but these terminal illnesses are all preventable once obesity is prevented, because they are basically caused by overweight and obesity.

There's a high prevalence of obesity and overweight in Ghana with prevalence reported as 43.4% in Ashanti, 36.9% in Central, 32.4% in Northern and 55.2% in Greater Accra, and there has been a consistent increase from 1998 to 2016 (Ofori-Asenso et al., 2016). There's also higher prevalence of obesity in urban (20.6%) than rural (8.0%) areas, and in women (21.9%) than men (6.0%) in Ghana (Ofori-Asenso et al., 2016).

Some studies conducted among institutional workers in Accra found some predisposing factors of obesity, to be marriage and old age (Addo et al, 2015), but there are several other factors including unhealthy food and unhealthy eating. There are constant options of high caloric foods, present in urban food environments (Dake et al, 2016).

These options give rise to the presence of unhealthy foods such as; non-alcoholic beverages, processed foods that are high in salt, added sugars, saturated fats and trans-fats (Laar et al., 2018). A study on the dietary habits of adolescents in the Accra Metropolis revealed frequent consumption of pastries, fatty meat and fast foods (Asante & Agb, 2017). A qualitative study carried to assess factors influencing the consumption of fast foods among adolescents indicated the importance of affordability in junk food eating (Majabadi et al., 2016), hence cash incentives could be most effective in marketing healthy food items (Flores & Rivas, 2017).

2.4 African Examples of Dietary Guidelines

The dietary guideline for Nigerians has food recommendations for a variety of population groups. It is a food guide that is in the form of a food pyramid. It has five food groups with bread, grains and tubers at the bottom. It is followed by fruits and vegetables. The third level has eggs, fish, meat and dairy products. The second is fats and oils with water being the first (Federal Ministry of Health, 2006).

According to the guideline, the fifth and the fourth levels of food are to be eaten at every meal. The third level should be eaten in moderation and the second level sparingly. The guideline advices individuals to drink plenty of water (Federal Ministry of Health, 2006).

The key messages in the Nigerian dietary guideline inform the population to take into consideration a person's level of physical activity before food intake. Secondly, a diet should contain a wide variety of foods (Federal Minitry of Health, 2006).

The food guide for South-Africans on the other hand has seven food groups, namely: water; fats and oil; yoghurt and milk; eggs, meat, fish and chicken; soya, lentils, peas, beans, fruits and vegetables; lastly, starchy foods. The key messages in this guide include the use of salt, fats and sugar sparingly, drinking a lot of safe water, eating fish, chicken, lean meat or eggs

daily, milk or yoghurt every day, beans and peas regularly, fruits and vegetables every day and making starchy foods the most part of meals (South-African Department of Health, 2013). Additional health messages in this guideline is to be active and eat from a variety of food sources (South-African Department of Health, 2013).

The dietary guideline for Kenya is similar to that of Nigeria and South-Africa but it has recommendations targeted for each stage of the life cycle. The key messages in this guideline include the eating of food a variety of food groups per day; a lot of green leafy, red and yellow fruits and vegetables per day; beans, peas, cowpeas, lentis,soya, pigeon peas and nuts four times per week; lean meat, fish and sea-food, eggs and poultry twice a week; yoghurt, fresh or fermented milk every day; fat and oils in moderation; sugar and iodated salt sparingly; and drinking of plenty water (Kenya Ministry of Health, 2017).

2.5 Marketing with Supermarket Flyers

Flyers have been in use for decades in marketing supermarket goods and services (Karoline et al, 2013), and supermarket strategies have evolved with different forms of promotional tools used to persuade shoppers and attract them to shops.

An important marketing strategy employed to facilitate the selling of food items involves the use of 'four Ps' (Product - goods designed to satisfy consumers, Place - outlets or locations to ensure consumer accessibility, Price - revenue generated from selling the product and Promotion - combine used of several other methods to target consumers) (Maxi & Coop, 2009). The same strategy also involves the use of 'four Cs' (Convenience, Communication, Customer cost and Customer solution) (Maxi & Coop, 2009).

There are several other marketing methods; advertising (posters, flyers, etc.), publicity, direct marketing (e.g. flyers distribution), sponsorship, exhibitions (videos, stands and flyers), packaging, point of sale merchandizing, sales promotion and personal selling (Keith, 2003).

All these vigorous methods used as marketing strategies to sell food are geared towards strongly persuading a shopper to buy products.

Unplanned buying of products by consumers is clearly as a result of marketing conditions already established before a shopper enters, and these conditions are under the control of the retailer (Bell, Corsten & Knox, 2014), so policy interventions at the population level on marketing restrictions could encourage healthy eating choices, especially among people who rely on unhealthy foods (Thomas et al., 2018).

2.6 Discounts on Supermarket Foods

The price of foods affect the decisions that consumers make about whether to buy food or not, especially in low and middle income countries like Ghana. Current research conducted to ascertain the prices of foods in supermarkets versus the prices of food in small food stores revealed that smaller food stores had higher prices for foods compared to supermarkets (Caspi et al., 2017).

The difference in prices for these food retail settings could mean that supermarkets give significant discounts on their foods. Discounts are possible due to the rapid spread of other supercenters and fast food joints competing with supermarkets (Senauer et al., 2010).

Apart from competition from other supercenters, supermarkets are able to secure better deals from their suppliers as compared to other shops and it gives them more leverage to discount foods greatly without incurring any financial loss (Bob, 2012).

Supermarkets also compel consumers to buy more products to achieve discount when a product is known to be unhealthy (Ravensbergen, Waterlander, Kroeze & Steenhuis, 2015). Cost per calorie studies conducted in the United Kingdom revealed that large quantities of white rice (known to be unhealthy) were sold at exceptional cheap prices in supermarkets (Snowdon, 2017).

2.7 Claims Associated with Supermarket Foods

There are several claims that supermarkets choose to associate with the variety of food products they promote. Examples of such claims are health claims, puffery size claims, convenience claims, new product brand claims and price benefit claims (Appendix 3).

In New South Wales, Australia, health claims that supermarkets normally use in promoting food items include; ‘sugar-free’, ‘reduced sugar’, ‘no added sugars’, ‘contains natural sugars’ and ‘reduced fat’ (Pauline, 2015) and supermarket survey found (2-4) % of food products with health claims (Williams, 2005).

Apart from health claims, a study conducted in Brazil identified price and convenience claims, used to influence the promotion and consumption of ultra-processed foods including beverages (Pereira, Moreira & Silva, 2017).

CHAPTER THREE

METHODS

3.1 Study Design

A quantitative, cross-sectional study was carried out using content analysis to assess food promotional flyers in four Accra-based supermarkets.

3.2 Study Area

The study was conducted in the Accra Metropolitan area, an urban population in the south-eastern zone of Ghana. According to the World Bank document - 'Ghana urbanization review (2015)', Ghana has experienced rapid urbanization since the 1980's. Similarly Accra has also experienced rapid urbanization since 2000.

3.2.1. Population Characteristics

Greater Accra region has the highest population density of 1,236 persons per square kilometer (NPC, 2014) and Accra is the most populated urban dwelling as shown in Table 1.

Table 1: The Highest Urban Populations in Ghana

City Name	Total Urban Population		Annual Growth Rate (%)
	2000	2010	2000 – 2010
Accra	1,658,937	2,076,546	2.2
Kumasi	1,170,270	2,035,064	5.5
Tema	447,472	633,011	3.5
Sekondi/Takoradi	369,166	583,545	4.6
Tamale	197,178	274,022	3.3

Source: Population and Housing Census 2010.

3.2.2. Socio-economic Activities

Accra, the largest city in Ghana is experiencing a very fast rate of urbanization. There's rapid immigration of people from the rural areas, African nations and other places which is influencing the urban economy greatly (Colin, 2013). This is due to the fact that Accra has a significant capacity to attract business activities and migrants all over Africa and beyond.

A lot of people migrated to the city in search of jobs, transfers, marriage, academic studies, etc. Currently, the city has a large number of return migrants who are in transnational businesses and social networks adopted while abroad (Colin, 2013).

In cities such as this, individuals and families benefit a lot from access to different markets, especially supermarkets, allowing for income diversification (Scott & Taylor, 2017). The reviving Ghanaian economy is expected to fuel consumers expenditure in this regard over 2013 to 2020 (Scott & Taylor, 2017).

3.2.3. Study Population

Food retail outlets' procurement and distribution processes across Accra consists of supermarkets procure goods from importers, distributers and agents on a wholesale; convenience shops or store (mini-marts, grocery stores, fuel station marts, kiosk and roadside stalls) normally, have limited capital and limited space for their goods so they buy from sub-wholesalers; traditional markets are clustered in open air places and normally buy from local farmers (Scott & Taylor, 2017).

The market shares of the various retail food sectors are: supermarkets 4%, convenience stores and small grocery stores 36% and traditional markets 60% (Scott & Taylor, 2017). Meanwhile, hawkers also travel on foot in the neighborhoods and streets of Accra selling ready-to-eat food items and beverages (Meng, Florkowski & Sarpong, 2014).

The rise of supermarkets in Accra is increasingly becoming very important in the food retail environment causing the food retail structures to undergo transformations (Therien, 2017). It is generally believed that the wealthier and more educated individuals and families form the greater population of people who buy food from the supermarkets. However, consumers in Accra also believe supermarkets provide the higher socio-economic group a new alternative food source, offering convenience, increased access and preferred foods. Studies conducted in Accra contrarily found that supermarkets sell cheaper processed foods to lower income groups (Therien, 2017).

Currently, there are four major supermarkets and shopping malls in Accra including the Accra mall on Spintex road, Junction mall at Nungua, Achimota mall at Achimota and West-hills mall at new Weija. There are several other average supermarkets and Mini-marts that sell food items to consumers e.g. Max Mart Limited, Melcom group of companies, Koala, A&C mall, Palace mall, Marina mall, etc. Consumers in Accra also patronize the Makola, Kaneshie, Agbobloshie, traditional open markets.

3.3 Sampling Method

All the four major supermarkets and most popular malls in Accra were selected for this study with purposive sampling method. These four supermarkets were selected for five important reasons: first, they are the major and most popular shopping malls in Accra currently; second, they have high patronage of both local folks and foreigners; third, they are shopping centers that are designed to welcome shoppers of all ages and color; fourth, people of different socio-economic status all enjoy great shopping experiences in these malls; lastly, the glamour, cool temperature and the resting areas in these malls make shoppers feel at home and are never in hurry to exit and end their shopping experience. These reasons make the selection of all four shopping malls inevitable.

Mini-Marts and other forms of food outlets were not included in this study. Thirty-two printed supermarket food flyers were sampled over a period of eight weeks. Most of the supermarkets had weekly promotional flyers hence one flyer was picked from each food shop for a period of 8weeks to make up for the 32 flyers.

Composite week sampling technique was employed in the selection process (one visit day,per mall, per week for a total of 8weeks between June and July, 2018) on specific dates to the supermarkets, and all had equal number of visits. All supermarkets were visited on same day of the week on data collection days.

3.4 Data Collection Technique

Data was collected over two month's period for this study. Promotional flyers were collected in four supermarkets per week. Three Physician Assistant Students (at level 300 from the College of Health, Kintampo – Ghana), were trained as mystery shoppers to assist with the data collection process. Mystery shopping is to enter a retail shop as a regular customer or a window shopper with the sole purposes of collecting data and making further enquiries (if necessary), without declaring this intensions to the retailer.

Data collectors engaged store attendants to mainly pick-up or collect food promotional flyers, in the process, they engage in conversations to make further enquiries about the menu and original prices of food items on promotion in the flyers. In some cases, available printed store menu was collected as well, to confirm original prices. Data collectors also collected all other necessary information as required by the study (e.g. if there are free offers that were not stated on the promotional flyers, shop attendants are politely asked to quote them). The minimum time taken to complete data collection per shop was (5-15) minutes.

3.5 Data Collection Instrument

A questionnaire was used to collect data (Appendix 2). This tool had both open-ended and close-ended questions. Most of the questions asked were adopted from International Network for Food and Obesity / NCDs Research Monitoring and Action Support (INFORMAS) protocol. INFORMAS is a global network that aims to monitor and support actions to reduce obesity and NCDs while increasing healthy food environments (Mhurchu, 2017).

The INFORMAS protocol was adopted and adapted, using the nutritional guideline for Americans (2015-2020). The same food categories used in the protocol were adopted but prices categories were added to collect data on original and promotional prices for this study.

This protocol was used to develop the questionnaire and coding format/tool used as a checklist to assess and classify the adverts in the flyers, into relevant categories. Data coding was done by the recording of all promotions advertised in the supermarket flyers. If a promotion consisted of multiple products, this was counted as one promotion.

3.6 Variables of the Study

The outcome variables of this study include: Nutrient Dense Foods (e.g., vegetables, fruits, whole grains, low-fat and fat-free dairy products, most oils, lean cuts of meats and poultry, fries); Healthier Beverages (e.g., fat-free or low-fat milk and milk products, fortified soy beverages and other lactose-free products, 100% juice, and water); Added Sugar Foods (Any food items with added sugar e.g. Cake, Cookies, Sweet rolls, pastries, doughnuts, Brownies, Pies, Cobblers, Candy, Dairy desserts, Ice Cream, Energy drinks, soft drinks, fruitages and fruit punch); Saturated Fats Foods (e.g., butter, stick margarine, cream, cheese, whole milk, beef ribs, sausage, poultry skin) and High Sodium Foods (e.g., Pizza, Casseroles, Burgers, Tacos, Sandwiches, Pepperoni, Sardines, Flavored/Fried Rice, Instant Noodles, Ready-Made Pasta) and Promotional prices of food items.

Each food item on promotion was characterized based on the type of food category it is classified into. Independent variables that were measured include; Original prices, Type of Promotion, Health claims, Disclaimers, Brand benefit claims (e.g. Puffery benefit claim – using and exaggerating the size of products to entice consumers) and other background characteristics of the supermarkets which include; name of mall, opening and closing hours, promotion days and food shop name.

A healthier food will include fruits, vegetables, whole grains, fat-free and low-fat dairy products, and seafood, as well as foods with less sodium (salt), saturated fats, trans-fats, cholesterol, added sugars, and refined grains which could encourage healthy eating pattern with a variety of diverse assortment of foods and beverages across and within all food groups and subgroups selected to fulfill the recommended amounts without exceeding the limits for calories and other dietary components.

3.7 Data Processing and Analysis

The data gathered was manually edited to correct wrong recordings. It was entered into MS Excel 2016, and imported into SPSS version 17.0 statistical software for analysis. Graphs and Tables were used to display the results of the study.

SPSS was used to perform basic descriptive statistics on the general information on promotional flyers to determine the healthiness of food items on promotion. The relationship between the independent and dependent variables were also determined and displayed by cross tabulation of study outcomes by mall and by claims associated with products. The average percentage discount for food items on promotion and average percentage discount for overall ad category for promotions were also analyzed.

Product categories and price discounts were analyzed with basic statistics to get a clear understanding of how the respective discounts were distributed for this study.

3.8 Ethical Consideration

Ethical clearance was obtained from the Ghana Health Service Ethical Review Committee (GHSERC) for this study to be carried out (Appendix 1). Clearance also covered the need to not seek the informed consent of supermarket shop owners and managers, in order to avoid compromising the true reflection of information gathered for this study.

3.9 Pretest

The study was pretested in Palace mall which was not part of the main study. Using the questionnaire, supermarket food promotional flyers were collected from the shop attendants in the Palace mall with the 'mystery shopper' strategy and the content of these flyers were assessed using the coding sheet.

The pretest was done to check the accuracy of the questionnaire (Appendix 2) and the mystery shopping process. After pretesting, it was realized that, the data collection instrument captured promotional prizes of food items but not original prizes, also some food items were given out for free and these could not be recorded by the instrument.

The pretest helped in the modification of the data collection tool in order to capture original food item prizes and free items. Information gathered from the pretest informed the adjustment of the coding tool to accurately collect relevant data specific to the study.

3.10 Study Limitations

There are some limitations to this study which include the purposive sampling of the four major shopping malls in Accra. The exclusion of the other types of supermarkets could affect the generalizability of the results. However, it is important to note that, the four major malls in Accra are currently the largest shopping centers in the city.

The study also has no information on the total supermarket product range. It focused only on food items on promotion, and hence, assessment was done only at the level of promotional items instead of considering total product range.

CHAPTER FOUR

RESULTS

4.1 Introduction

The study explored the healthiness of foods on promotional flyers in Accra-based supermarkets. It described the types of foods that were promoted and the significant price discounts for them. A total of 32 flyers were collected which resulted in recording 250 food advertisements, only 79 were promoting food items , the remaining 171 were merely displays of the menu for the food shops visited.

4.2 General Information on Promotional Flyers

The results from Table 2 show that more than half of food items that were on promotion during this period, were not having specific promotion days, (56.3%). This was followed by promotions that run from Mondays to Thursdays, (21.9%). Table 2 again shows that there were 11 different food shops that were opened with food items on promotion with heavy discounts. Among the different food shops, Pizza Inn and Chicken Inn combined shop, had the highest number of distribution of promotional flyers (21.9%), and closely followed by Pizza Hut (18.8%).

All the 11 food shops had 07:00-09:00 am and 05:00-09:00 pm as their opening and closing hours respectively (Table 2). The food shops engaged mostly 71.9% in multi-item promotions (Appendix 3) than in single item promotion (Table 2), which means that, shoppers received more discounts on food items that had additional products, as compared to single item promotions.

Table 2: General Information on Promotional Flyers (N = 32)

Variables	Frequency	Percent
Day of promotion		
From Monday-Thursday	7	21.9
From Monday-Wednesday	4	12.5
Mondays Only	3	9.4
Not specified	18	56.3
Shopping Mall		
Accra Mall	8	25.0
Junction Mall	8	25.0
Achimota Mall	8	25.0
West Hills Mall	8	25.0
Shop Name		
KFC	5	15.6
Chicken Inn and Creamy Inn	1	3.1
Barcelos	2	6.3
Pizza Inn	2	6.3
Chicken Inn	4	12.5
Creamy Inn	2	6.3
Pizza Hut	6	18.8
Pizza Inn and Chicken Inn	7	21.9
Pizza Inn and Creamy Inn	1	3.1
Others (Basilissa and Steak)	2	6.3
Open Hours – Morning (07:09)am	32	100.0
Closing Hours – Evening (05:00 to 09:00)pm	32	100.0
Type of Promotion		
Single Item Promo	9	28.1
Multi-Item Promo	23	71.9

4.3 Healthiness of Food Items on Promotional Flyers

Table 3 shows that promotions on pizza were most 31.6% frequently observed, followed by chicken, chips and coke combination 29.1% (Appendix 3). Products that were least promoted were French fries 1(1.3%), and pizza, sauce and cheese combination 1.3% (Table 3). The food items promoted were categorized as High sodium/saturated fats, high sodium exclusively and added sugar foods (Table 3). All the food items promoted in the study as in Table 3 were generally unhealthy foods (Appendix 3).

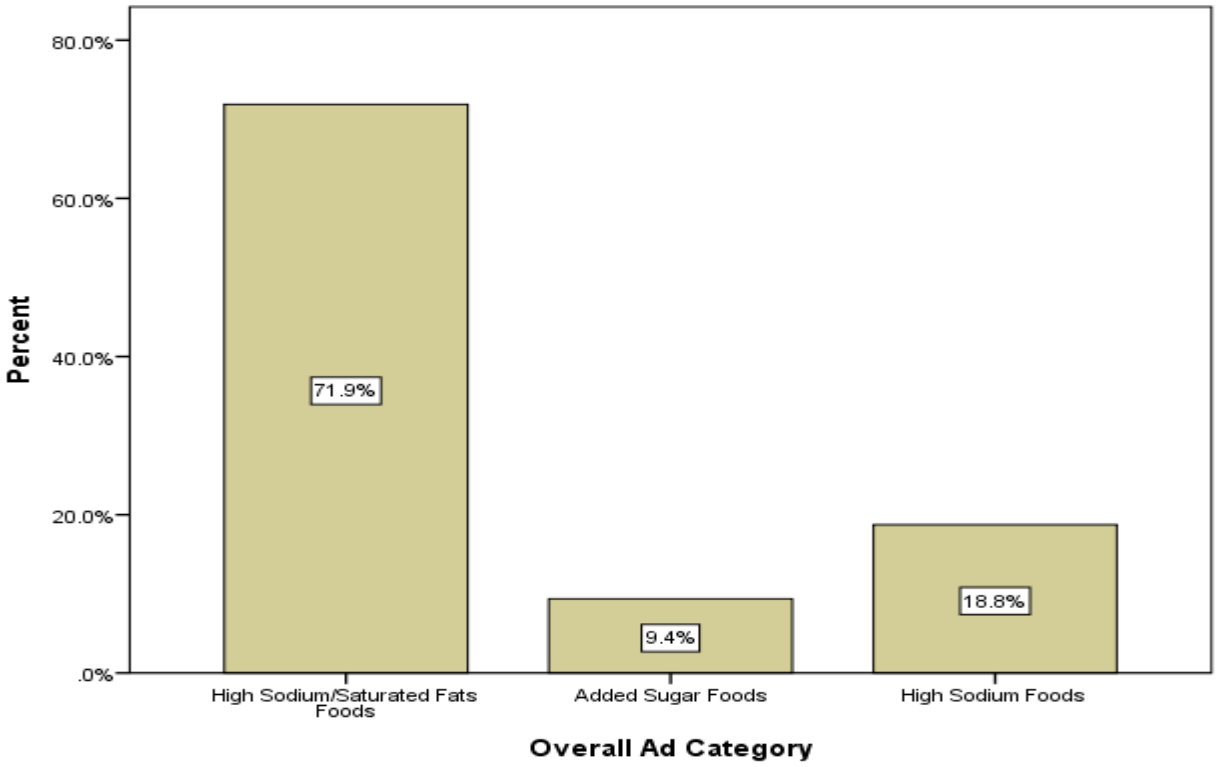
Table 3: Healthiness of Food Items on Promotion

Name of Item on Ad	Frequency	Percentage	Description	Healthiness
Chicken, chips, coke	23	29.1	High sodium/saturated fats	Unhealthy
Chicken, chips, salad, coke	3	3.8	High sodium/saturated fats	Unhealthy
Chicken, fried rice	8	10.1	High sodium/saturated fats	Unhealthy
Chicken, rice/chips, coke	2	2.5	High sodium/saturated fats	Unhealthy
French fries	1	1.3	High sodium	Unhealthy
Ice cream	3	3.8	Added sugar	Unhealthy
Naked fries	2	2.5	High sodium	Unhealthy
Pizza	25	31.6	High sodium	Unhealthy
Pizza, coke	4	5.1	High sodium	Unhealthy
Pizza, coke, chips	3	3.8	High sodium	Unhealthy
Pizza, fries	4	5.1	High sodium	Unhealthy
Pizza, sauce, cheese	1	1.3	High sodium	Unhealthy
Total	79	100.0		

All of the food ads promoted on the flyers were unhealthy

Among all the unhealthy categories of foods that were promoted, High sodium/saturated fats foods were the most (71.9%). The remaining 28.1% was distributed among high sodium exclusively and with added sugar foods (Figure 2). The high sodium/saturated fats foods that were greatly promoted could have serious health implications for consumers that patronize these malls. It is important to note that added sugar foods had the very least (9.4%) attention in this study.

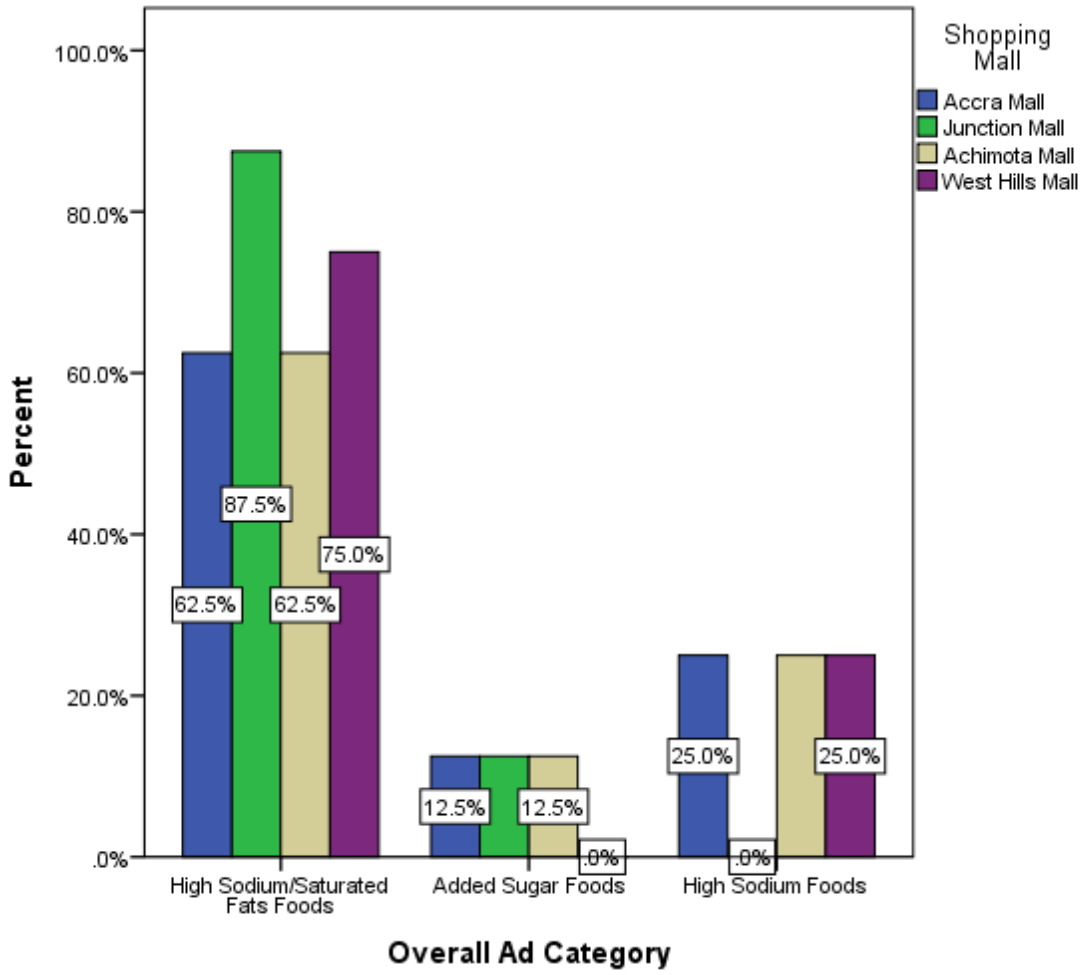
Figure 2: Overall Advertisement Category



Accra mall, Junction mall and Achimota mall were the supermarkets responsible for promoting added sugar foods (12.5%), see Figure 3. Achimota, West-Hills and Accra malls also promoted more (25.0%) of high sodium exclusive foods but Junction mall in particular, promoted more (87.5%) of the High sodium/saturated fats foods, Figure 3.

This result clearly show that, all the four major shopping malls in Accra had higher promotions in the high sodium / saturated fats foods category as compared to the added sugar and high sodium exclusive category. It is important to note that West-hills mall did not promote any added sugar foods, while Junction mall was not involved in promoting any high sodium exclusively foods, see figure 3.

Figure 3: Overall Ad Category by Mall



4.4 Price Discounts for Foods on Promotional Flyers

Table 4 shows the average percentage discount on the different food items that were on promotion. French fries were given for free at 100 percent discount, followed by discounts on naked fries (e.g. potatoe chips, yam chips, etc) (42.8), Ice cream (33.3), pizza, sauce and cheese (31.8) Table 4. It is important to note that French fries were given for free as an incentive for buying any regular food item on the menu. The table again shows that an average of 27.5 percent of the original cost of food items on promotion were discounted for consumers. Among the 8 multi-item combinations, pizza with sauce and cheese had 31.8

percent of its original cost discounted. The multi-items promoted had combinations either in chicken category or pizza category (Appendix 3).

There were four different food combinations in the chicken category as compared with five different pizza categories (Table 4). Among the chicken category, chicken-chips-coke combination (Appendix 3) had 30.7 percent of its original price discounted and for pizza category, naked pizza alone had 27.1 percent of its original price discounted.

Table 4: Average Percentage Discount for Food Items on Promotion

Name of food item on Promotion	Average Percentage Discount
Ice cream	33.3
Chicken, chips, coke	30.7
Chicken, chips, salad, coke	15.7
Chicken, fried rice	23.3
Chicken, rice/chips, coke	22.2
French fries	100
Naked fries	42.8
Pizza	27.11
Pizza, coke	16.5
Pizza, coke, chips	9.7
Pizza, fries	24.6
Pizza, sauce, cheese	31.8
Total	27.49

In an overall ad category for the unhealthy food promotion, more than half (50.6%) were high sodium foods and only 3.8% were added sugar foods, see Table 5. Table 5 generally shows the 79 food items on promotion with various levels of discounts. Food items that were categorized as having high sodium exclusively had the highest (40) frequency in an overall ad category, followed by high sodium / saturated fats foods (36). In other words, all the 79 food ads were found to fall under three major categories (High sodium exclusively, High sodium plus saturated fats, and Added sugar). After the assessing the food items in the ads, 50.6 percent were discounted in the high sodium exclusive category, closely followed by the high sodium / saturated fats category (45.6%).

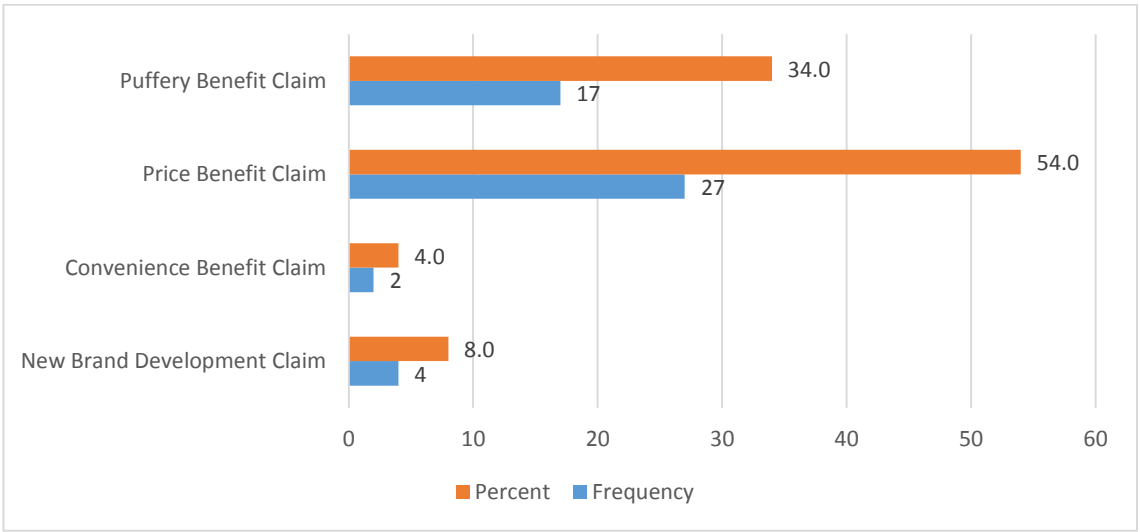
Table 5: Average Percentage Discount for Overall Ad Category for Promotions

Ad Category	Frequency	Percent
Added sugar	3	3.8
High Sodium	40	50.6
High Sodium/ saturated fats	36	45.6
Total	79	100

4.5 Claims Associated with Food products Promoted in the Flyers

Claims that were associated with food items promoted in all the four major supermarkets in Accra were mostly (54.0%) price benefit claims and puffery size benefit claim (34%), Figure 4 and Appendix 3. From the figure 4, claims that referred to convenience and the development of new brands were (4%) and (8%) respectively.

Figure 4: Claims Associated with Products



**Puffery benefit claim (using and exagerating the big size of products to entise consumers to patronize sales)

CHAPTER FIVE

DISCUSSION

5.1 General Information on Promotional Flyers

The study explored the healthiness of foods in selected Accra-based supermarkets. A total of 250 food ads were advertised, out of which 79 were actual food promotions displayed on 32 promotional flyers. A study conducted by Guliana et al. (2013) revealed that 8.4% of consumers who received or picked up flyers in supermarkets bought larger numbers of products as compared to those who did not. This reveals the significant role of ads, displayed in supermarket flyers to influence consumer behavior towards the type of food purchase. This study actually confirms that here are several marketing strategies (Maxi & Coop, 2009) but flyers have been in great use (for decades) to promote supermarket goods and services (Karoline et al, 2013).

The results from this study revealed that food promotions run from Mondays to Thursdays and most 18(56.3%) of the time, supermarkets promote their food items on any day of the week, as and when they please. This means, supermarkets use every opportunity during the week to market food items constantly, on almost every working day.

All the food shops also had long (07:00am – 09:00pm) opening hours. In other words, shoppers can have enough shopping time in these shopping malls for up to 14hours per day to increase their shopping experience, engaging mostly 23 (71.9%) in multi-item promotions.

5.2 Healthiness of Foods on Promotional Flyers

All the food items promoted in this study were classified as ‘Unhealthy’. This research confirmed the general assumption that supermarkets heavily promote unhealthy foods. On the contrary, a similar study conducted in Dutch supermarkets (Netherlands) by Ravensbergen et al. (2015) found promotions that 29.8% were categorized as healthy. This

significant difference between developed and developing countries supports the article by Bell et al (2013) that unhealthy foods are heavily marketed in developing countries than developed ones. It also supports the article by Kelishadi and Qorbani (2015) that there is high patronage of unhealthy foods among communities with low socio-economic status.

According to the Rockefeller Foundation (2013), unhealthy developing world food markets like that of Ghana need food security policies to avert the current situation of unhealthy eating, leading to chronic non-communicable diseases. Several studies unearth the health related problems that arise with the eating of unhealthy foods. Some of these life threatening health problems are hypertension, type II diabetes, heart diseases, infertility and several forms of cancers (Jiang et al., 2016).

Among all the unhealthy categories of foods that were promoted in all the supermarkets, high sodium/saturated fats foods were the most (71.9%). High sodium diets, according to Claudine et al (2016), can cause a lot of devastating problems that go beyond raising blood pressure, to affect target organs in the body such as the heart, kidney and the brain.

Although high sodium intake is generally considered negative, Andrew et al (2016) have stressed on the importance of sodium in diets for the regulation of normal body processes, and the recommendation of high sodium diets to hypotension patients.

5.3 Price Discounts for Foods on Promotional Flyers

All the promotions in this study were categorized as unhealthy yet they had significantly great price discount (Average discount 27.5%). This finding has a lot of health implications for Ghanaian shoppers that patronized the shopping malls in Accra due to the fact that the price of food items affect the decisions that consumers make about whether to buy food or not, especially in a low or middle income country, Kelishadi and Qorbani (2015).

Smaller shops have expensive foods (healthy or unhealthy) as compared to supermarkets (Caspi et al., 2017) but the lower prices of food items in supermarkets cause more harm than good to supermarket consumers. This is because shoppers are compelled to buy more products to achieve discounts, especially when the product is found to be unhealthy (Ravensbergen et al., 2015). This observation as supported by this study, found about 72% of multi-item (two or more items had to be bought to receive a price discount) promotions. , see Appendix 3. Thus, a consumer is encouraged to buy more than one unhealthy food product in order to receive a discount. A single unhealthy meal may not cause diseases but excess weight gain is as a result of imbalance between energy consumed and energy used (Wollaston et al., 2015).

The unhealthy food items promoted in the Accra-based shopping malls could definitely lead to poorer health outcomes, since they are sold in large quantities in the multi-item category (Appendix 3). This definitely has implications for controlling negative effects of unhealthy diets through regulation of food sales and advertisement.

5.4 Claims Associated with Food products Promoted in the Flyers

This study identified Price benefit claims, puffery size benefit claims, new brand development claims and convenience claims. In other words, the major Accra-based supermarkets focused on developing price benefit claims for consumers in this setting to catch attention to their food promotion lists. They were as well heaping more unhealthy food items on consumers by convincing them to buy, due to large size/quantities with great discounts.

It is important to note that there were no health claims associated with the promotions in this study. This confirms that, healthy foods were not promoted, and a similar study conducted in Brazil also identified price benefit claims, as well as convenience claims, to be associated

with the promotion of ultra-processed food items and beverages (Pereira, Moreira & Silva, 2017).

Health claims that supermarkets in the developed world normally use in promoting their healthy food items include; 'sugar-free', 'reduced sugar', 'no added sugars', 'contains natural sugars' and 'reduced fat' (Pauline, 2015). It is important for the developing world supermarkets (including Accra-Based supermarkets) to emulate such healthful marketing practices to inform and promote the consumption of healthy foods in the populations.

5.5 Implication of Results on Public Health

The role of food in the cause of NCDs is greatly important (Naicker et al., 2015). Junk foods and beverages were found to be heavily promoted in this study, which could escalate the already existing overweight and obesity conditions in Accra (Ofori-Asenso et al., 2016). In view of this finding, there's the need to intensify local population promotion of healthy eating and encourage healthy food environments to prevent diet-related NCDs, including Obesity.

There was studies also, that investigated the link between marketing exposure (of high fat, sodium and added sugar foods) to consumers and consumption of fast foods, statistically, a significant association existed with increased number of adverts (Thomas et al., 2018). Also high BMI (Body Mass Index) was found to be significantly related to evening time fast food consumption (Poudel, 2018).

Food composition standards are required by supermarkets and food industries in Ghana, to serve as a guide during the processing of foods that contain hidden amounts of salts and sugars (e.g. processed drinks or junk foods). This can gradually reduce the adverse impact of processed foods on the population. There's therefore the need to formulate and enforce legislation in the country, to reduce the exposure and power of unhealthy food promotions.

Another study conducted among Sudanese found a significant relationship existing between weight gain and fast food eating (Almuhanna et al., 2014), and another study found a strong association between severe forms of obesity and fast foods consumption (Garcia & Sunil, 2012). Meanwhile Hakkak and Bell (2016) found that obesity creates the link to chronic diseases such as liver disease, cardiovascular diseases, type 2 diabetes and cancer (Hakkak & Bell, 2016).

This link between fast food, weight gain, obesity and other related NCDs should be a public health concern and encourage education on major platforms and forums (schools, religious grounds, markets, etc) to inform the general population of the devastating effects of unhealthy eating habits and how to prevent them.

Furthermore, among school children, a study conducted yielded a statistically significant rise in obesity and BMI, in the presence of junk food (NIH, 2013). A similar study conducted in India resulted in finding junk foods such as burger, pizza, cheese and oily items to be more common in overweight and obese adolescents, and the same study found the correlation coefficients were statistically significant and positive between weight and fried foods (Kurukshetra et al., 2013).

As proven by research, children and adolescents are not spared in the menace of unhealthy eating. There's therefore the need for clear and consistent policy or nutrition standards, formulated and enforced to govern the activities of supermarkets, food industries, school canteens, food vending machines, etc. in Ghana, in order to protect the health of the future leaders of the country.

Unlike this quantitative study, a qualitative work carried to assess factors influencing the consumption of fast foods among adolescents indicated, affordability, among other factors (Majabadi et al., 2016), hence price benefit claims and discounts on junk foods could

encourage unhealthy eating habits. Comparing the prices of food items before purchase is very crucial for consumers and cash incentives or discounts could be most effective policy to reduce unhealthy food consumption (Flores & Rivas, 2017).

Quantitative and qualitative studies have both indicated the relevance of price in the consumption of healthy or unhealthy foods. Policies and programmes should to formulated and implemented to support the availability and affordability of healthy foods, while limiting unhealthy ones in various communities, in-store and food outlets in Ghana.

CHAPTER SIX

CONCLUSION AND RECOMMENDATIONS

6.1 Conclusion

- This study found that all the food items that were on promotion in supermarket food flyers of the four major malls in Accra were found to be unhealthy, and were heavily promoted in large quantities.
- The average discounts on these unhealthy food promotions were very high with high sodium foods receiving more than half of the total discounts.
- Price benefit claims, as well as puffery size benefit claims were promoted in all the shopping malls. There were no health claims or disclaimers.

6.2 Recommendations

- Given that all the food items promoted in this study were unhealthy, there may be a need for government to implement comprehensive policies to reduce the impact of food industries and supermarkets promotion of unhealthy foods. The policy can be enforced to ensure supermarkets that make ready-to-eat meals and food industries that produce e.g. soft drinks, reformulate pre-processed foods and beverages to remove excess calories.
- Government should take action to create systems to support supermarket owners to sufficiently stock healthy foods and beverages by developing and implementing policy frameworks and structures that are specifically designed and placed to regulate the type of food items, their placement, promotion and pricing in supermarkets; and minimize levies or reduce import duties on healthy foods. .
- As showed by this study that supermarkets heavily discount unhealthy foods, it will be necessary for the government to introduce policies that will heavily place value-

added taxes on unhealthy foods like high sodium foods and added sugar beverages e.g. pizza, soft drinks, etc., to discourage supermarket managers from placing discounts on them .

- As the study clearly shows that price benefit and puffery size claims were highly associated with the unhealthy food promotions, there could be the need for FDA to ensure food industries and supermarket managers, introduce disclaimers and change product offerings to include healthy food items, so that health claims can be applied to promote healthy foods.
- Food and Drugs Authority should include and enforce front-of-pack labelling of food to provide consumers with information about the content of sugar, fat, saturated fat and salt.
- Researchers (especially in Public Health) should consider conducting more studies on the healthfulness of supermarket food environment to yield enough evidence to inform policy as part of an all-inclusive approach to improve population health.

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APPENDICES

Appendix 1: Ethical Clearance

GHANA HEALTH SERVICE ETHICS REVIEW COMMITTEE

In case of reply the number and date of this Letter should be quoted.

MyRef. GHS/RDD/ERC/Admin/App
Your Ref. No. 18/222

Research & Development Division
Ghana Health Service
P. O. Box MB 190
Accra
Tel: +233-302-681109
Fax + 233-302-685424
Email: ghserc@gmail.com
10th May, 2018

Patience Tsrah
University of Ghana
School of Public Health
Legon, Accra

The Ghana Health Service Ethics Review Committee has reviewed and given approval for the implementation of your Study Protocol.

GHS-ERC Number	**GHS-ERC075/12/17**
Project Title	Healthiness of Foods on Promotional Flyers of Selected Accra- Based Supermarkets
Approval Date	10th May,2018
Expiry Date	9th May, 2019
GHS-ERC Decision	**Approved**

This approval requires the following from the Principal Investigator

- Submission of yearly progress report of the study to the Ethics Review Committee (ERC)
- Renewal of ethical approval if the study lasts for more than 12 months,
- Reporting of all serious adverse events related to this study to the ERC within three days verbally and seven days in writing.
- Submission of a final report **after completion** of the study
- Informing ERC if study cannot be implemented or is discontinued and reasons why
- Informing the ERC and your sponsor (where applicable) before any publication of the research findings.

Please note that any modification of the study without ERC approval of the amendment is invalid.

The ERC may observe or cause to be observed procedures and records of the study during and after implementation.

Kindly quote the protocol identification number in all future correspondence in relation to this approved protocol

SIGNED.....
DR. CYNTHIA BANNERMAN
(GHS-ERC CHAIRPERSON)

Cc: The Director, Research & Development Division, Ghana Health Service, Accra

Appendix 2: The Questionnaire

INDICATORS	DESCRIPTION	CODE
Date of promo.	dd/mm/yyyy	
Date Mall was visited	dd/mm/yyyy	
Day Mall was visited	Sunday, 15/07/2018	1
	Sunday, 08/07/2018	2
	Monday, 02/07/2018	
	Tuesday, 26/06/2018	3
	Wednesday, 20/06/2018	4
	Thursday, 14/06/2018	5
	Friday, 08/06/2018	6
	Saturday, 02/06/2018	7
Shopping Mall	Accra Mall	1
	Junction Mall	2
	Achimota Mall	3
	West Hills Mall	4
Shop Name	KFC	1
	Barcelos	2
	Pizza Inn	3
	Chicken Inn	4
	Creamy Inn	5
	Pizza Hut	6
	Others	7
Opening HRS	Morning (07:00 to 09:00)am	1
	24 HRS Open	2
Closing HRS	Evening (05:00 to 09:00)pm	1
	24 HRS Open	2
Type of Promo.	Single Item Promo	1
	Multi-Item Promo	2
Type of Product	Nutrient Dense Foods (e.g., vegetables, fruits, whole grains, low-fat and fat-free dairy products, most oils, lean cuts of meats and poultry, fries)	1
Name of Product		
	Healthier Beverages (e.g., fat-free or low-fat milk and milk products, fortified soy beverages and other lactose-free products, 100% juice, and water)	2
Name of Product		
	Added Sugar Foods (Any food items with added sugar e.g. Cake, Cookies, Sweet rolls, pastries, doughnuts, Brownies, Pies, Cobblers,	3

	Candy, Dairy desserts, Ice Cream, Energy drinks, soft drinks, fruitages and fruit punch)	
Name of Product		
	Saturated Fats Foods (e.g., butter, stick margarine, cream, cheese, whole milk, beef ribs, sausage, poultry skin)	4
Name of Product		
	High Sodium Foods (e.g., Pizza, Casseroles, Burgers, Tacos, Sandwiches, Pepperoni, Sardines, Flavored/Fried Rice, Instant Noodles, Ready-Made Pasta)	5
Name of Product		
	Recipe additions (e.g., soup and stew cubes, oils, dried herbs and seasonings)	6
	Tea and coffee	7
	Baby and toddler milk formulae	8
Overall Ad category	Nutrient dense foods	1
	Healthier beverages	2
	Added sugar foods	3
	Saturated fats foods	4
	High sodium foods	5
Health Claims	Reduction of Disease Claim Yes	1
	No	2
	Other Health Claims (e.g. organic food) Yes	1
	No	2
Disclaimers	Yes	1
	No	2
Brand Benefit Claims	sensory based characteristics Yes	1
	No	2
	new brand development Yes	1
	No	2
	suggested use (e.g. great for lunch boxes) Yes	1
	No	2
	suggested users	1

	Yes	
	No	2
	Convenience Yes	1
	No	2
	Price Yes	1
	No	2
	Puffery size Yes	1
	No	2
Cost of Item / Pack on Promo (in a range)	GH₵ 0.00 = free	1
	GH₵ 1.00 to GH₵ 5.00	2
	GH₵ 6.00 to GH₵ 10.00	3
	GH₵ 11.00 to GH₵ 15.00	4
	GH₵ 16.00 to GH₵ 20.00	5
	GH₵ 21.00 to GH₵ 25.00	6
	GH₵ 26.00 to GH₵ 30.00	7
	GH₵ 31.00 to GH₵ 35.00	8
	GH₵ 36.00 to GH₵ 40.00	9
	GH₵ 41.00 to GH₵ 45.00	10
	GH₵ 46.00 to GH₵ 50.00	11
	GH₵ 51.00 to GH₵ 55.00	12
	GH₵ 56.00 to GH₵ 60.00	13
	GH₵ 61.00 to GH₵ 65.00	14
	GH₵ 66.00 to GH₵ 70.00	15
	GH₵ 71.00 to GH₵ 75.00	16
	GH₵ 76.00 to GH₵ 80.00	17
	GH₵ 81.00 to GH₵ 85.00	18
	GH₵ 86.00 to GH₵ 90.00	19
	GH₵ 91.00 to GH₵ 95.00	20
	GH₵ 96.00 to GH₵ 100.00	21
	> GH₵ 100.00	22

Cost of Item / Pack on Promo (NOT in a range)		
Original Cost of Same Item (In a range)	GH₵ 1.00 to GH₵ 5.00	1
	GH₵ 6.00 to GH₵ 10.00	2
	GH₵ 11.00 to GH₵ 15.00	3
	GH₵ 16.00 to GH₵ 20.00	4
	GH₵ 21.00 to GH₵ 25.00	5
	GH₵ 26.00 to GH₵ 30.00	6
	GH₵ 31.00 to GH₵ 35.00	7
	GH₵ 36.00 to GH₵ 40.00	8
	GH₵ 41.00 to GH₵ 45.00	9
	GH₵ 46.00 to GH₵ 50.00	10
	GH₵ 51.00 to GH₵ 55.00	11
	GH₵ 56.00 to GH₵ 60.00	12
	GH₵ 61.00 to GH₵ 65.00	13
	GH₵ 66.00 to GH₵ 70.00	14
	GH₵ 71.00 to GH₵ 75.00	15
	GH₵ 76.00 to GH₵ 80.00	16
	GH₵ 81.00 to GH₵ 85.00	17
	GH₵ 86.00 to GH₵ 90.00	18
	GH₵ 91.00 to GH₵ 95.00	19
	GH₵ 96.00 to GH₵ 100.00	20
	>GH₵ 100.00	21
Original Cost of Same Item (NOT in a range)		
Number of Food Ads on Flyer	1 Only	1
	2 or More	2
Completed Data Collection	Yes	1
	No	2

Appendix 3: Supermarket Food Promotional Flyers

KFC Shops

KFC Shops


Burgers
Zinger / Colonel Burger
Meal
27
Chicken
Variety
Bucket
89
KFC
59
9 piece
75
12 piece
89
15 piece
99
18 piece
HOT
&Crispy
KFC

KFC Shops


KFC
Popcorn Chicken
9
Regular
13
Large


Box meals
BoxMaster
20
BOXMASTER
Zinger Fillet, Tomato, Lettuce,
Hash Brown, Cheese and Colonel Sauce


Fully Loaded
Box Meal
36
Coca-Cola
KFC

KFC Shops


Wicked Zinger
BoxMeal
44


Twisters
Twister Meal
27


Regular Chips,
64.00
2 Piecer &
FREE 350ml
American Cola
1400
NOW available in
ORIGINAL
or
Spicy
American Cola


Krushers
10
Peppermint
Oreo
Verry
Berry

KFC Shops


Soft Twirl
4

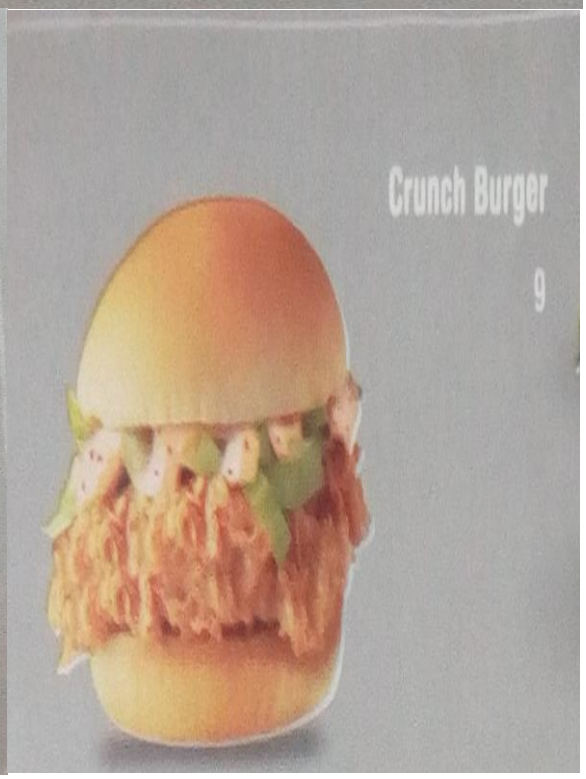

Chocolate
Fudge
Sundae
7


1 ltr drinks
10
Sprite
1 litre
Fanta

KFC Shops


500ml drinks
Coca-Cola
Fanta
Coca-Cola


Colonel
17
With cheese
19


Crunch Burger
9

KFC Shops

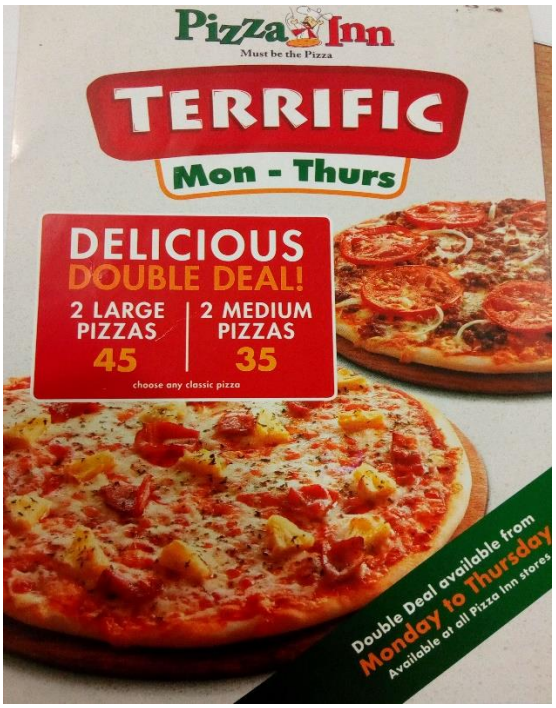

Snacks
Lime & Chilli Hot Wings
16
4 Piece
29
8 Piece


Classic Strips
10
3 Piece
19
6 Piece


Zinger
17
With cheese
19

Barcelos Shops

Pizza Inn


Pizza Inn
Must be the Pizza
TERRIFIC
Mon - Thurs
DELICIOUS
DOUBLE DEAL!
2 LARGE PIZZAS
45
2 MEDIUM PIZZAS
35
choose any classic pizza
Double Deal available from
Monday to Thursday
Available at all Pizza Inn stores


CLASSIC PIZZAS
all-time favourites
REGULAR
24
MEDIUM
29
LARGE
35
CHICKEN MUSHROOM
succulent chicken - mushroom - creamy mayo
HAWAIIAN
bacon - pineapple
BOEREWORS
100% beef mince - fresh tomato - fresh onion
BBQ STEAK
marinated bbq steak
PERI-PERI CHICKEN
spicy peri-peri chicken
CHICKEN TIKKA
marinated chicken tikka - green pepper - onion
VEG FEAST
green pepper - onion - sweetcorn - chilli


DELUXE PIZZAS
something special
REGULAR
26
MEDIUM
33
LARGE
38
CHICKEN HAWAIIAN
succulent chicken - bacon - pineapple
CHEESE BURGER
NEW
100% beef mince - real cheddar cheese
fresh onion - creamy mayo
MEAT DELUXE
bbq steak - pepperoni - beef - bacon - ham
CHICKEN BACON BBQ
succulent bbq chicken - bacon
sweetcorn - onion
PEPPERONI PLUS
double pepperoni - onion - mushroom
ROAST VEG & FETA
NEW
fresh red & green peppers - olives
feta cheese - mushroom
SPICY BOEREWORS
100% beef mince - fresh onion
green pepper - jalepeño chilli


NEW!
ESHISHI
PIZZA
MEDIUM
29
LARGE
35
Also available in Spicy Beef MED 29 LRG 35
Offer valid while stocks lasts.

Chicken Inn


MUNCHIE
MONDAYS
Make Mondays Matter!
Only 15.00
1 PIECE FREE!
3 Pieces of Chicken with Rice
Offer valid while stocks last. Available on Mondays Only.
Chicken inn
luv dat chicken


2 PIECER
with Chips & a FREE 350ml American Cola
Only 14.00
Offer valid while stocks last
Chicken inn
luv dat chicken


Chicken Ebusua
BUCKET
9 Pieces of Succulent Chicken
Add 2l Coca-Cola 15.00
Add Large Chips 8.00
Add Coleslaw 4.00
9 Piece Bucket Only
40.00
Ts & Cs apply. Offer valid while stocks last.

Creamy Inn

Pizza Hut


Pizza Hut
79 GHC
MEAL DEAL BOX!
NEW OFFER!
2 MEDIUM PIZZA + CHICKEN WINGS + CHEESY GARLIC TWIST + FRENCH FRIES


TRIPLE TREAT!
BOX
NEW OFFER!
ANY 2 MEDIUM PIZZA + CHICKEN WINGS + CHEESY GARLIC TWIST + FRENCH FRIES
ONLY 79 GHS


MEAL DEALS
FROM MONDAY TO WEDNESDAY
GHs55
ANY 4 SMALL PAN PIZZA!
GHS45
ANY 2 MEDIUM ANY BASE!
GHs28
ANY SMALL PIZZA + CHIPS + 300ML DRINK
EVERYDAY!


Pizza Hut
CREATE YOUR OWN PIZZA
SMALL 22 GHC
MEDIUM 33 GHC
LARGE 47 GHC
Your pizza comes with 4 Toppings, 1 Sauce, 1 Cheese as Standard
NEW

PIZZA HUT


Pizza Hut
16"
EPIC SIZE
BIG,
BIGGER,
EPIC
NEW
EPIC SIZE
45-65
GHS
EACH
AVAIL ABLE IN ALL OUR FLAVOURS
DINE IN | TA
DELIV
CALL & OR
CRA MALL: 050 002 233 1 ACHIMOTA MALL: 050 002 233 2 TEMA BRANCH: 050
NTEX BRANCH: 050 002 233 4 EAST LEGON: 050 002 233 5
Pizzahut

Basilissa Shop

Steak Shop