

Branding and cartoon character usage in food marketing to children: the South African picture

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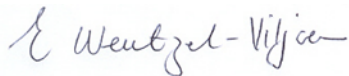


PREFACE

The article format has been selected for this mini-dissertation. Janlie Delpport, the *Magister Scientiae* (MSc) student, conducted the research and wrote the article: “Branding and cartoon character usage in food marketing to children: the South African picture” in accordance with the authors’ instructions of the journal *Appetite*, to which the article will be submitted.

The manuscript was written under the supervision of the co-authors, Prof E Wentzel-Viljoen (supervisor) and Me M Wicks (co-supervisor). The co-authors provided permission for the article to be submitted for examination purposes. As the article still needs to be submitted to the journal, no permission from the editor of the journal was obtained.

The following signatures confirm the co-authors’ role in the manuscript and their permission of the article titled: “Branding and cartoon character usage in food marketing to children: the South African picture” to be included in this mini-dissertation for examination purposes in the partial fulfilment of the requirements for the degree *Magister Scientiae* in Dietetics at the Potchefstroom Campus of the North-West University.



Prof E Wentzel-Viljoen



Me M Wicks

ABSTRACT

Background

Worldwide, including in South Africa, it is a well-known fact that there is a rising prevalence of overweight and obesity contributing to non-communicable diseases (NCDs) in children. In South Africa, the prevalence of overweight in children (2-14 years) amounts to 16.5% in girls and 7.1% in boys, with obesity contributing to a further 11.5% in girls and 4.7% in boys. Research has indicated that marketing practices aimed at children mainly promote foods and non-alcoholic beverages that are high in fat, sugar and/ or salt (HFSS). This may have an effect on children's nutritional knowledge, food choices, purchasing and dietary behaviours, and in the end it can contribute to overweight. It has been indicated that marketing, using cartoon characters and branding, has increased the loyalty and product choice in children. To date, there is limited data on the use of cartoon characters and branding in advertisements and on food packaging marketed to children in South Africa. This lack of data creates a challenge for the development of policies regarding advertisements of foods and non-alcoholic beverages to children. Therefore, the main aim of this study was to describe the frequency of advertising to children, the usage of branding and cartoon characters in the marketing of food and non-alcoholic beverages to children aged 3 to 18 years in South Africa and to use the obtained results as baseline information in policy development.

Objectives

The objectives of this mini-dissertation include: firstly to determine the frequency and type of food products advertised to children on South African free-to-air television (TV) channels; secondly, to determine the amount of breakfast cereal products aimed at children in the three main supermarkets in Potchefstroom; and lastly to describe branding and cartoon character usage in advertisements and on breakfast cereal packaging in the three main supermarkets in Potchefstroom, North West, South Africa and on the four free-to-air TV channels in South Africa.

Methods

In this observational study, the four free-to-air TV channels in South Africa were recorded from a Monday to a Thursday and one Saturday from 6:00 to 22:00 during the last week of the month. Recordings were made for the months of April, June, September and November of the year 2014. All recordings were watched and screened for food advertisements aimed at children. For the investigation of breakfast cereal products, the largest supermarkets in Potchefstroom, South Africa, were visited and information on breakfast cereal packaging aimed at children was

accumulated. Cartoon characters and branding as marketing techniques aimed at children were then illustrated so that it can be used as baseline information for policy development.

Results

A total of 4916 advertisements were shown on the free-to-air TV channels of which 1030 (21%) were food advertisements. Food advertisements aimed at children used techniques such as children in the advertisement, broadcasting in the time of children's programmes, and/ or using cartoon characters in the advertisements. The food advertisements aimed at children mostly included products such as sweets, confectionary, snack foods, sugared beverages, pre-sugared breakfast cereals, and sweetened milk and dairy products. Healthy food advertisements accounted for the minority (1.4%) of food advertisements.

A total of 131 breakfast cereal products were marketed to children. Persuasive techniques on the breakfast cereal packaging included the use of cartoon characters (52%), children featuring on the packaging (44%), games (15%), collectable items (9%), and competitions (6%). It was also observed that breakfast cereal products aimed at children were placed on the lower shelves in supermarkets and cartoon characters looked downwards in order to make eye-contact with children consumers.

Conclusion

Even though certain companies have signed a pledge prohibiting them to market unhealthy foods to children, some of the food industries still targets children with less healthy food advertisements. Although advertising is not the only contributing factor leading to obesity in children, it is considered to be one of many factors contributing to overweight in children. Therefore, it is necessary for the food industry to engage in responsible food marketing aimed at children in order to take one step forward in the prevention of overweight, obesity and NCDs in children.

Keywords

Overweight, obesity, child, branding, cartoon, marketing

OPSOMMING

Agtergrond

Die toename in oorgewig en obesiteit in kinders en die risiko daarvan vir die ontwikkeling van nie-oordraagbare siektes, is wêreldwyd, insluitend in Suid-Afrika, bekend. Die voorkoms van oorgewig in kinders (2-14 jaar) beloop 16.5% in meisies en in 7.1% in seuns, met obesiteit wat in 'n verdere 11.5% van meisies en 4.7% van seuns voorkom. Navorsing het bewys dat bemarkingspraktyke, gerig op kinders, hoofsaaklik voedsel en nie-alkoholiese drankies bemark wat hoog in vet, suiker en/ of sout (HVSS) is; dit kan 'n enorme invloed op kinders se voedingskennis, -keuses, -verkope en dieetgedrag hê en kan eindelijk bydra tot oorgewig in kinders. Navorsing het bewys dat die lojaliteit teenoor voedselprodukte positief beïnvloed word wanneer tekenprentkarakters en handelsmerke gebruik word. Tans is daar 'n beperkte hoeveelheid data oor die invloed van tekenprentkaraktes en handelsmerke in advertensies en op voedselverpakkings wat aan kinders bemark word in Suid-Afrika. Dit stel dus 'n uitdaging daar wanneer dit kom by die ontwikkeling van beleide ten opsigte van die bemarking van voedsel en nie-alkoholiese drankies wat op kinders gemik is. Die hoofdoel van die studie is dus om die hoeveelheid advertensies gerig aan kinders en die gebruik van handelsmerke en tekenprentkarakters in die bemarking van voedsel en nie-alkoholiese drankies wat gerig is aan kinders drie to 18 jaar te ondersoek. Die basislyn-informasie wat uit die ondersoek verkry word, kan dan gebruik word om beleide in Suid-Afrika te ontwikkel.

Doelwitte

Die doelwitte van die verhandeling sluit die volgende in: die identifisering van die hoeveelheid en tipe voedselprodukte wat bemark word aan Suid-Afrikaanse kinders op gratis televisie- (TV) kanale; die identifisering van die hoeveelheid ontbytgrane wat aan kinders bemark word in die drie grootste kruidenierswinkels in Potchefstroom; en laastens om die gebruik van handelsmerke en tekenprentkarakters in advertensies en op ontbytgraanverpakkings te ondersoek in die drie grootste kruidenierswinkels in Potchefstroom, Noord-Wes, Suid-Afrika en op gratis TV-kanale.

Metodes

In hierdie waarnemende studie is die gratis Suid-Afrikaanse TV-kanale opgenem van 'n Maandag tot 'n Donderdag en 'n Saterdag vanaf 06:00 tot 22:00 in die laaste week van die maand. Opnames is gemaak in April, Junie, September en November van 2014. Die opnames is deurgekyk en ontleed om die voorkoms van voedseladvertensies te bepaal. Vir die ondersoek van ontbytgraanverpakkings is die grootste winkelsentrums in Potchefstroom, Suid-

Afrika besoek. Inligting vanaf ontbytgraanverpakkings wat aan kinders, bemark word is versamel. Tekenprentkarakters en handelsmerke, as tegnieke van bemarking gerig aan kinders, is geanaliseer om as basislyn-inligting vir die opstel van beleide te gebruik.

Resultate

In totaal is 4916 advertensies vertoon waarvan 1030 (21%) voedseladvertensies was. Voedseladvertensies wat op kinders gemik is, het bemarkingstegnieke wat die volgende insluit gebruik: die gebruik van kinders in die advertensie; die wys van advertensies tydens kinderprogramme; en/ of die gebruik van tekenprentkarakters in advertensies. Voedseladvertensies het meestal voedselprodukte soos lekkers, gebakte produkte, peuselhappies, versoete drankies, versoete ontbytgrane, en versoete melk en melkprodukte geadverteer. Voedseladvertensies vir gesonde voedsel was in die minderheid (1.4%).

131 ontbytgrane is in totaal in die 3 winkelsentrums aan kinders in Potchefstroom bemark. Bemarkingstegnieke op die verpakkings van ontbytgrane het: tekenprentkarakters (52%); prentjies van kinders op die verpakking (44%); speletjies (15%); versamelitems (9%); en kompetisies (6%) ingesluit. Daar is ook bevind dat ontbytgrane gemik op kinders op die laagste rakke in winkelsentrums geplaas word en dat tekenprentkarakters op die verpakkings se oë afwaarts kyk, sodat hulle oogkontak met kinderverbruikers kon maak.

Gevolgtrekking

Selfs al het sommige voedselmaatskappye 'n ooreenkoms geteken om nie ongesonde kosse aan kinders te bemark nie, word kinders steeds beïnvloed deur sommige voedseladvertensies vir ongesonde kos. Al is voedseladvertering nie die enigste bydraende faktor tot obesiteit in kinders nie, word dit steeds as 'n bydraende faktor tot oorgewig in kinders gesien. Dus moet die voedselindustrie verantwoordelikheid neem ten opsigte van voedseladvertering aan kinders. Dit kan 'n positiewe effek hê op die voorkoming van oorgewig en nie-oordraagbare siektes in kinders.

Sleutelwoorde

Oorgewig, obesiteit, kind, handelsmerk, tekenprentkarakter, bemarking

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LIST OF ABBREVIATIONS

ads:	Advertisements
ASA:	Advertising Standards Authority
ASASA:	Advertising Standards Authority of South Africa
BMI:	Body Mass Index
CEN:	Centre of Excellence
CGCSA:	Consumer Goods Council of South Africa
DOH:	Department of Health
g:	gram
HFSS:	High in fat, sugar and/ or salt
n:	Number/ frequency
NCDs:	Non-communicable diseases
NFCS:	National Food Consumption Survey
NWU:	North-West University
SABC:	South African Broadcasting Corporation
SANHANES:	South African National Health and Nutrition Examination Survey
TV:	Television
WHO:	World Health Organisation

CHAPTER 1

INTRODUCTION

CHAPTER 1 INTRODUCTION

1.1 Background

Currently, South Africa is struggling with an increasing trend of overweight and obesity amongst children. The prevalence of overweight in children aged 2 to 14 years is 16.5% for girls and 7.1% for boys, while obesity is present in 11.5% girls and 4.7% boys. The prevalence of overweight is the highest in the younger 2 to 5 year group at 18.9% for girls and 17.5% for boys. The urban formal and informal areas in South Africa have the highest prevalence of overweight and obesity in children with a lower prevalence in rural areas (Shisana *et al.*, 2013). Research has indicated that the marketing of food and beverages has an effect on the food choices made by children (Cairns *et al.*, 2013; Consumers International, 2012; Hastings *et al.*, 2003; WHO, 2013).

Marketing can be defined as any form of communication intended to increase the identification, demand and/ or consumption of the specific product that has been advertised or promoted (Consumers International, 2012; WHO, 2010). In a systematic review by Cairns *et al.* (2013) that is supported by other researchers, they have reported that the current marketing practices mainly promote foods and non-alcoholic beverages high in fat, sugar and/ or salt (from this point forward the researcher will refer to this as HFSS foods) that have direct effects on children's understanding of nutrition, their fondness of certain products, their choice and purchase behaviour, their food consumption and finally on their nutrition-related health and dietary behaviour (Cairns *et al.*, 2013; Elliot, 2008; Hastings *et al.*, 2003; WHO, 2010). The majority of HFSS foods marketed include fast foods, sweetened breakfast cereals, confectionary, and soft drinks (Cairns, 2013; Cairns *et al.*, 2013; Chapman *et al.*, 2006).

The process of marketing includes: market research, distribution, pricing, product packaging, product development, the advertising of the specific product, promotions and public relationships (WHO, 2007). The consumer market that include children, is exposed to advertising through television (TV), radio, cinema, text messages, product placement in stores, viral marketing, information services, posters, sponsorships to schools and in-school marketing, product packaging, product design, free samples, gifts and tokens, competitions, loyalty schemes where children can become a club member, the use of licensed and cartoon characters, animation, branding, point of sale positioning, magazines, newspapers and the Internet to promote foods and beverages (Cairns *et al.*, 2013; Consumers International, 2012; Hastings *et al.*, 2003; WHO, 2013). In addition, other marketing techniques that are attractive and engaging to children, that include the use of celebrities to promote specific products may be used (Consumers International, 2012). Examples of celebrities used are the former Springbok

captain and Rugby legend Francois Pienaar and the current captain of the National Protea Cricket Team in the Lays® potato chips advertisement. Branding is a form of marketing frequently used to create strong emotional connections between the consumer and the product name or logo (Connor, 2006). Loyalty to specific brands can be encouraged through children's clubs, competitions and promotions (Hastings *et al.*, 2003). Research also suggests that most food advertisements using cartoon characters and animation target children by creating a world full of fun and imagination in order to sell their products (Elliot, 2008; Hastings *et al.*, 2003).

TV plays a key role as a marketing strategy targeting children and studies have indicated that there is a positive correlation between the time children are spending with media, especially TV, and the prevalence of overweight (Austin & Reed, 1999; Caroli *et al.*, 2004, Hastings *et al.*, 2003). A study performed by Mchiza *et al.* (2012) found that food-related advertisements shown on TV in South Africa are continuing to promote less healthy food products and are making predominantly misleading health claims; this is a reason for concern. Targeting children through advertisements is now seen in the context of the childhood obesity epidemic, as TV viewing may lead to an inactive lifestyle and advertising may increase the intake of HFSS foods and snacks in front of the TV. This increases children's overall energy intake (Folta *et al.*, 2006). A study performed by Strachan and Pavie-Latour (2006) argue that even if children can identify healthy foods from unhealthy foods, children may consume less healthy foods due to the majority of advertisements marketing unhealthy and low value food products.

Unhealthy diets are associated with an increasing rate of overweight and obesity in children worldwide, and an unhealthy diet also places people at risk to get non-communicable diseases (NCDs) that start in early childhood and continues throughout life (WHO, 2010). Because of the rise in childhood overweight and obesity, the World Health Organization (WHO, 2010) compiled recommendations for the marketing of foods and non-alcoholic beverages to children, for the prevention and control of NCDs.

The rising prevalence of childhood overweight and obesity in South Africa and the supporting evidence that food marketing aimed at children influence children's food choices support the need for child directed food marketing regulations. Currently, limited information exists about the amount and type of TV advertisements aimed at children and the use of cartoon characters on breakfast cereal packaging in South Africa (Mchiza *et al.*, 2012; Temple *et al.*, 2008). Thus, further investigation on the influence of advertisements of HFSS food and the use of cartoon characters and branding on breakfast cereal packaging is needed to provide a clear picture of advertisements aimed at children in the South African context.

For the purpose of this study, the use of branding and cartoon characters as techniques of advertising on TV and marketing on the packaging of breakfast cereal products directed at children were described.

1.2 Rationale for the study

Research has indicated that HFSS food advertisements influence children's eating behaviours in that it increases the intake of HFSS foods by children (Cairns *et al.*, 2013; Consumers International, 2012; Hastings *et al.*, 2003; WHO, 2013). It has been shown that unhealthy diets, with a higher intake of HFSS foods, are associated with an increasing rate of overweight and obesity in children worldwide and an increased risk for the development of NCDs early in childhood (WHO, 2010). An increased amount of HFSS food advertisements may thus also contribute to the higher prevalence of obesity among children in South Africa aged three to 16 years (Mchiza *et al.*, 2012; Temple *et al.*, 2008). Because of the continuous rise in childhood overweight and obesity, the World Health Organization (WHO) developed recommendations for the marketing of foods and non-alcoholic beverages, in order to prevent and control NCDs in children (WHO, 2010). Research has indicated that sweetened breakfast cereals are also classified as HFSS foods that are frequently marketed to children (Cairns, 2013; Cairns *et al.*, 2013; Chapman *et al.*, 2006). Research also showed that breakfast cereal products are frequently consumed by South African children (Nel & Steyn, 2000; Tee *et al.*, 2015). Furthermore, research indicated that a total of 4% of children aged one to five years are consuming breakfast cereal portions of 37.5g per person each day. Added to this, 4.3% of children aged six to nine years are consuming 42g breakfast cereal per day (Nel & Steyn, 2000). For these reasons, breakfast cereal products were included for data extraction.

Currently there is limited information available on the type and frequency of food-related advertisements to children on the free-to-air or non-pay TV channels and no information is available on the use of cartoons and branding on the packaging of breakfast cereals in the North West province of South Africa. The amount of food advertisements seen on TV by children may be an enormous contributing factor to the dietary behaviour of children (Dixon *et al.*, 2007); therefore the restriction of unhealthy food advertisements aimed at children may be very important in the prevention of childhood overweight and obesity in South Africa. Research suggests that there is also not enough available information on the use of cartoons and branding in advertisements and on food packaging in South Africa. These aspects may create a challenge in the development of policies for advertising aimed at children (Mchiza *et al.*, 2013; Temple *et al.*, 2008). Thus, a necessity exists to investigate the usage of branding and cartoon characters in advertisements directed at children on free-to-air TV channels and the use of

cartoons and branding on the packaging of breakfast cereal products aimed at children in South Africa.

As it remains difficult to define a “child” due to the variations in regulations in different countries and between different Acts and regulations within a country, a child will be classified as a human with a childhood age that ranges between three and eighteen years (WHO, 2007). To ensure that no marketing aimed at children was excluded, a child in this study was defined as a boy or a girl from the age of three to 18 years.

1.3 Research aim

The purpose of this research is to describe advertising and the usage of branding and cartoon characters in the South African marketing of food and non-alcoholic beverages to children aged three to 18 years.

1.4 Research objectives

Specific objectives include:

- to determine the frequency and type of food products advertised to children on South African free-to-air TV channels;
- to describe the characteristics of breakfast cereal products marketed to children in the three main supermarkets in Potchefstroom, North West, South Africa; and
- to describe the branding and type of cartoon characters used on breakfast cereal packaging in the three main supermarkets in Potchefstroom, North West, South Africa.

1.5 Significance of the study

The information obtained in this study will provide much needed information on the current child directed food and non-alcoholic beverages (from now on referred to as food and beverages) marketing situation in South Africa. The results of this mini-dissertation will contribute towards a bigger study to develop a framework to regulate the marketing of food and non-alcoholic beverages to children in South Africa.

1.6 Structure of the mini-dissertation

This mini-dissertation is constructed in article format according to the postgraduate guidelines of the North-West University (NWU). It consists out of four chapters. To ensure the logical flow of headings and information, decimal numbers are used. In terms of the use of language, format and referencing in this mini-dissertation, directions from the NWU were strictly followed.

Chapter one provides a brief introduction to the research, gives the aim and objectives and describes the rationale and significance of the study. The details related to contributions of the study team are also provided.

Chapter two contains the literature review. The literature review focuses on the prevalence of overweight and obesity, the influence of marketing on the food behaviour of children, children's role in marketing, marketing techniques, television advertisements, food packaging aimed at children, the use of branding and cartoon characters aimed at children, current legislation and regulations governing food marketing to children and the current situation in South Africa.

The article containing data from this research project is provided in Chapter three. This article, titled "Branding and cartoon character usage in food marketing to children: the South African picture", will be submitted for publication to an international peer-reviewed journal. The references of the article in Chapter three will be provided at the end of the chapter according to the instructions provided by the specific journal to which the article will be submitted for publication.

Chapter four completes this mini-dissertation by providing a summary and conclusion of the research performed, as well as recommendations for further research.

The bibliography provides all the references of chapters one, two and four according to the referencing style of the NWU.

1.7 Contributions of members of the study team

The contributions of the researchers listed as authors in the article and who formed part of the research project are presented in Table 1.1.

Table 1-1: List of study team members and their contribution to this research project

Name and signature	Affiliation	Role in this study
Ms J.E. Delpont (BSc Dietetics)	Part time MSc student. Dietitian at Potchefstroom Hospital.	Responsible for the planning, execution and management of this project. Compiled the literature review, conducted a statistical analysis with the help of a statistical analyser, interpretation of data and writing of mini-dissertation
Prof E. Wentzel-Viljoen (PhD Dietetics)	CEN and School for Physiology, Nutrition and Consumer Science, NWU.	Supervisor of Ms J.E. Delpont in the completion of this mini-dissertation. Responsible for the conceptualization of the research project. Played a supervisory role in the planning and execution of the research project as well as the statistical analysis and interpretation of data.
Mrs M. Wicks (MSc Dietetics)	CEN and School for Physiology, Nutrition and Consumer Science, NWU.	Co-supervisor of Ms J.E. Delpont in the completion of this mini-dissertation. Played a supervisory role in the planning and execution of the research project as well as the statistical analysis and interpretation of data

CEN: Centre of Excellence for Nutrition; NWU: North West University

CHAPTER 2
LITERATURE REVIEW

CHAPTER 2 LITERATURE REVIEW

2.1 Introduction

In the past, a fat child was seen as a healthy child (Ebbeling *et al.*, 2002; Renzaho, 2004). Historically, overweight and obesity have been associated with success, wealth, good health, optimism and happiness in the African culture (Renzaho, 2004). The reason for this is that fatter children were more likely to survive health problems such as undernutrition and infections (Ebbeling *et al.*, 2002; Renzaho, 2004). Since then, these views have changed. Currently the worldwide prevalence of overweight and obesity has risen to such an extent, that it has become a significant problem in childhood health (Dixon *et al.*, 2007; Ebbeling *et al.*, 2002).

Research has indicated that there is a positive correlation between the time spent watching television (TV) and advertisements of foods and beverages high in fat sugar and/or salt (from now on referred to as HFSS foods) aired on TV and the prevalence of overweight in children (Cassim & Bexiga, 2007; WHO, 2013). The increased prevalence of overweight in children, with the contributing factor of an increased amount of HFSS advertisements, put children at risk to contract non-communicable diseases (NCDs). The presence of these diseases is related to a diet high in HFSS foods (Cassim & Bexiga, 2007; WHO, 2013). Children are vulnerable to the effect of advertising (Cassim & Bexiga, 2007; Kunkel *et al.*, 2004) as children may not be able to understand the persuasive intent of advertising (Kunkel & Gantz, 1992). Kunkel *et al.* (2004) also described the vulnerability of children when they showed that children younger than eight years may lack the cognitive ability to understand the persuasive intent of advertising and cannot defend themselves against the harmful effects of advertisements (Kunkel *et al.*, 2004). It has been shown that advertisements that make use of branding and cartoon characters may have an influence on a child's tendency to choose a certain product (Cassim & Bexiga, 2007). Advertisements on TV frequently advertise HFSS foods; despite research that indicate that the consumption of these foods contributes to the prevalence of childhood overweight and obesity (Cassim & Bexiga, 2007; WHO, 2013). Research, with regard to the use of cartoons and branding in advertisements and on food packaging in South Africa is limited and this lack of data creates a challenge when it comes to the development of policies regarding the advertising of foodstuffs and beverages to children.

2.2 Overweight and obesity amongst children globally and in South Africa

Worldwide the prevalence of overweight and obesity in children has increased from 4.2% to 6.7% from 1990 until 2010 (De Onis, 2010). According to the findings of research, obesity in childhood is most prevalent where over-nutrition becomes a problem as many people adapt to

Western lifestyles, and this change in lifestyle affects both low- and middle-income countries (Ebbeling *et al.*, 2002; WHO, 2004). Children in developed countries have an increased risk to develop overweight and obesity due to poor diet and limited opportunities to be physically active (Gordon-Larsen *et al.*, 2000). Research has indicated that obese children have a greater risk of becoming even more obese, and this has an even greater negative effect on their health (Ebbeling *et al.*, 2002). The average percentages of overweight and obesity amongst children worldwide are shown in Table 2-1.

Table 2-1: Global percentages of overweight and obesity amongst girls and boys

Country	Childhood overweight & obesity (%)		Year of Survey
	Girls	Boys	
Nigeria	27	18.5	2012
United States of America	33.2	35.1	2009/ 2010
Argentina	27.5	32.1	2005
Brazil	21.1	23.1	2002
Austria	21.7	18	2012
Canada	24.1	25.3	2009 - 2011
England	36.3	35.6	2013
Denmark	21.1	29.3	2007 - 2009
France	14.9	13.1	2006/ 2007
Germany	17.7	22.6	2008
Greece	37.7	44.4	2010
Netherlands	15.4	16.8	2010
Russian	16.9	17.3	2005
Scotland	26.6	30.9	2013
Spain	29.5	32.3	2012
Sweden	20.9	13.3	2013
India	18.3	20.6	2007/ 2008
Australia	24	22	2007
China	14.5	15.5	2009
Japan	14.3	16.2	1996 - 2000
New Zealand	28.8	28.2	2007

OW: Overweight; OB: Obese; %: Percentage

(Ref: World Obesity Federation, 2014)

South Africa is also currently struggling with an increased burden of overweight and obesity rates among the child population (Shisana *et al.*, 2013) and has one of the highest levels of obesity in the world (Mchiza *et al.*, 2013). This raises concerns, since overweight and obesity

are associated with increased risks of NCDs that start early in childhood and continues until adulthood (Elliott, 2008; Shisana *et al.*, 2013). In 1999, the first National Food Consumption Survey (NFCS) determined the nutrient intakes and assessed the anthropometric status of children aged one to nine years. They found that nutritional disorders included stunting that affects almost one in five children and underweight affecting one in ten children at national level. The prevalence of overweight was 12.1% and that of obesity 5% of children aged one to nine years. The children that were stunted were at an increased risk of developing overweight or obesity (Labadarios *et al.*, 2005). In 2005, the executive summary of the NFCS provided an overview of the nutritional status of children aged one to nine years. They found that a total of 10% of children aged one to nine years was overweight with a total of 4% being obese. Although there was a decrease in the prevalence of overweight and obesity since the NFCS in 1999, the authors acknowledged that it should be interpreted with caution and should be seen within the limitations of the comparison analysis (Labadarios *et al.*, 2007). In 2013, the South African National Health and Nutrition Examination Survey (SANHANES-1) was conducted. This data was compared to the data on overweight and obesity obtained in the NFCS of 2005. It was reported that the South African urban formal and informal areas have a higher prevalence of overweight and obesity amongst children when compared to the rural informal areas. Data on the dominance of the increased burden of overweight and obesity in South African children at various ages, indicates that girls contribute considerably more to this burden than boys (Shisana *et al.*, 2013). The comparisons of overweight and obesity since 1999 are described in Table 2-2.

Table 2-2: Prevalence of overweight and obesity in children (from 1999 to 2012) in South Africa

Survey	Year	Age group (y)	Overweight %	Obesity %
NFCS	1999	1 – 3	16.0	7.8
		4 - 6	12.0	3.8
		7 – 8	6.5	3.0
		Total (National)	12.1	5.0
NFCS	2005	1-6	10.6	4.5
		6-9	7.8	2.5
		Total (National)	10.0	4.0
SANHANES	2012	1-6	18.2	4.7
		6-9	8.4	3.4
		2-14 (girls)	16.5	11.5
		2-14 (boys)	7.1	4.7

NFCS: National Food Consumption Survey; SANHANES: South African National Health and Nutrition Examination Survey; y: years; %: percentage

The South African figures for overweight in children have increased from 10.6% to 18.6% since 2005, while obesity rates have remained more or less the same, from 4.5 to 4.7% (Shisana *et al.*, 2013). This poses a big concern for the wellbeing of children, as figures of overweight keep on growing and obesity rates remain too high. When looking at the current prevalence of overweight and obesity in South Africa, it is shocking to see that the prevalence of overweight and obesity in South Africa is currently where the United States was in 1999 – 2000 (UNICEF, 2013). Table 2-3 provides a detailed description of the latest overweight and obesity statistics in boys and girls aged two to 14 years.

Table 2-3: Overweight and obesity statistics in boys and girls aged two to 14 years and in the different provinces in South Africa (2012)

Categories	Overweight %		Obesity %	
	Girls	Boys	Girls	Boys
Age (y)				
2 – 5	18.9	17.5	4.9	4.4
6 – 9	12.3	4.5	4.1	2.7
10 -14	16.7	7.5	5.6	2.7
Province				
Eastern Cape	12.4	12.4	6.7	3.7
Free State	17.7	10.8	4.7	4.1
Gauteng	20.3	11.0	10.0	5.3
Kwazulu-Natal	20.3	15.1	8.5	6.1
Limpopo	9.1	4.8	4.3	3.3
Mpumalanga	14.1	10.6	5.5	6.1
Northern Cape	8.3	2.9	3.5	2.3
North West	15.2	6.4	4.3	2.7
Western Cape	19.1	18.2	7.2	4.1

y: years; %: percentage

2.3. Marketing of unhealthy foods to children

A lack of physical activity, lifestyle changes, socio-economic status, unfavourable physical environment, unhealthy diets, and marketing of unhealthy foods by the means of different media may lead to the increased prevalence of overweight and obesity amongst children (Andreyeva *et al.*, 2011; Ebbeling *et al.*, 2002).

Unhealthy diets frequently start early in childhood and continue throughout adulthood (WHO, 2010). A high consumption of HFSS foods is classified as an unhealthy diet and is associated with overweight and obesity, which in turn increases the risk for NCDs that became a growing burden over the past decade (WHO, 2010).

A study performed by Viner and Cole (2005) has shown that TV viewing at the age of five years has been associated with an increased body mass index (BMI) at the age of 30. It has also been shown that every hour of TV viewing during childhood, significantly increases the risk for adult obesity (Proctor *et al.*, 2003; Viner & Cole, 2005).

2.4. Consequences and prevention of overweight and obesity

South Africa is currently in the process of moving from infectious diseases to NCDs. Unhealthy practices such as unhealthy diets, physical inactivity, and alcohol and tobacco use may all contribute to the prevalence of NCDs (Shisana *et al.*, 2013). Research has shown that 6.8% of school learners have reported to already have smoked their first cigarette by the age of 10 years with one in five learners that are current smokers. It has also been reported that learners as young as 13 years and younger have reported that they have used alcohol (38.4%) (Reddy *et al.*, 2010). It can thus be seen that alcohol and tobacco products are used from an early age; this further increases the risk of contracting NCDs in younger children. As NCDs and risk factors for NCDs can affect anyone, including children, it is necessary to address these unhealthy practices to prevent an increase in disease and mortality rates in South Africa (Shisana *et al.*, 2013). SANHANES is an on-going population health survey put in place to address health changes and to regularly study the health status of South Africans by providing a more complete picture of the current health status. The baseline information obtained from this survey is important for the development of prevention and control programs against NCDs (Shisana *et al.*, 2013).

Obesity in childhood may continue into adulthood (WHO, 2003) and may cause health problems that may include chronic disease and cardiovascular risk factors (Srinivasan *et al.*, 2002; WHO, 2003). Hypertension, hyperlipidaemia, endothelial cell dysfunction, hyperinsulinaemia, (Srinivasan *et al.*, 2002) type 2 diabetes mellitus, cardiovascular diseases and cancer may all be the result of obesity (Elliott, 2008; WHO, 2003). Pulmonary complications, such as sleep apnoea, asthma and exercise intolerance, may also limit physical activity in overweight and obese children (Ebbeling *et al.*, 2002) and this will then contribute to the increase in childhood overweight and obesity.

In May 2004, the Global Strategy on Diet, Physical Activity and Health was developed by the World Health Organization (WHO) because of the world wide increased prevalence of NCDs.

The data has indicated that intakes of HFSS foods, lack of physical activity, and tobacco use increase the risk for NCDs. Diet and physical activity that were the main risk factors contributing to the contraction of NCDs are addressed by this strategy. Research has shown that the prevalence of overweight and obesity has increased in developing and low-income groups. Therefore, an integrated approach targeting unhealthy diet and lack in physical activity is needed to reduce the prevalence of NCDs and overweight and obesity (WHO, 2004). The main objectives of the Global Strategy are (WHO, 2004):

- To reduce the risk of contracting NCDs caused by an unhealthy diet and a lack of physical activity.
- To increase knowledge about the important influence of a healthy diet and physical activity on health and the prevention of NCDs.
- To develop and implement policies reinforcing the importance of sustainable healthy diets and physical activity.
- To support the research performed on the influence of diet and physical activity on health and to monitor the scientific data thereof.

2.5. Marketing of unhealthy foods to children

The marketing of food is designed to increase the identification of, demand for and the consumption of the product advertised (WHO, 2004; WHO, 2010). Evidence exists that current marketing practices mainly promote HFSS foods and drinks, and this has direct effects on children's understanding of nutrition, their fondness of certain products, the choice and purchase behaviour, food consumption, and in the end on the nutrition-related health and dietary behaviour of children (Cairns *et al.*, 2013; WHO, 2003). An increased intake of HFSS foods contributes to an increased risk for obesity and NCDs in children (Moodie *et al.*, 2013), and by targeting children through the advertisements of HFSS foods, these advertisements are now considered as a significant contributing factor to the childhood obesity epidemic (Folta *et al.*, 2006). A systematic review performed by Cairns *et al.* (2013) reported that the HFSS foods mostly advertised on TV include: sweets and chocolates, sugary soft drinks, sweetened breakfast cereals, biscuits, confectionary, fatty and salty snack foods, ready meals, and fast food restaurants. It was found that the majority of these HFSS food advertisements are aimed at children (Cairns *et al.*, 2013).

Advertisements have become prevalent in the audio and visual divisions of food companies and have become important instruments in raising awareness of new and available products to potential consumers (WHO, 2013).

Children are considered to be important and profitable consumers due to their spending power and influences over their parents' purchasing behaviour and decisions, and their vulnerability (AEf, 2012; Boyland & Halford, 2013; Caroli *et al.*, 2004; Cassim & Bexiga, 2007; Consumers International, 2005; Folta *et al.*, 2006; Hastings *et al.*, 2003; Hastings *et al.*, 2009; Preston, 2005) and because they are seen as risk takers, explorers, and early adopters of new technology (Boyland & Halford, 2013).

Advertisements that are designed to promote food to children, are utilizing 'pester-power'. 'Pester-power' is the power children exert when they attempt to influence the purchaser to purchase a certain product that they desire. Marketers have creative ways such as the inclusion of collectable toys in packaging, competitions, and the use of celebrities, cartoons and branding to manifest 'pester-power' in children (Austin & Reed, 1999; Caroli *et al.*, 2004; Hastings *et al.*, 2009). Though children are not the final decision makers when it comes to the purchasing of food, it has been shown that children as young as eight years are already capable of making independent purchases (Marshall, 1997).

Companies are targeting children as children are seen as lifelong consumers that influence household purchases. When children are enticed to become lifelong consumers, companies achieve their aim through the selling of their products (Cairns *et al.*, 2013; Kelly *et al.*, 2008). Therefore companies continue to target children by aiming advertisements at them as they play key roles in the purchasing of a product (Boyland & Halford, 2013; Cassim & Bexiga, 2007).

Children get motivated to purchase products, as companies use creative techniques such as product placement, becoming fans by joining web sites, packaging, labelling, text messages, animation, familiar cartoon characters, celebrities, branding, and other entertainment to market their products (Cairns *et al.*, 2013; Elliot, 2008; Hastings *et al.*, 2003; WHO, 2010; WHO, 2013). These advertisements are frequently also focussed on aspects that may enhance the idea of taste, humour, action, adventure, fantasy and fun (Cairns *et al.*, 2013; Elliot, 2008; Hastings *et al.*, 2003). This is done to enhance the product choice and purchasing behaviour of children (Boyland & Halford, 2013).

Companies do a lot of research to determine what would impress children and what products they would like (Henderson & Kelly, 2005). Research has shown that food advertising has an influence on the food choices made and the behaviour of children (Hastings *et al.*, 2003). Marketers use information obtained from child psychologists and academic literature on child development to market their products. Furthermore, marketers send these experts to stores and fast food restaurants to study children's drawings, dreams and fantasy lives. Food manufacturers spend a lot of money on advertising to ensure sales (Henderson & Kelly, 2005).

All the above mentioned techniques are used and applied to advertisements and product designs to make products more desirable to children (WHO, 2013).

Children do not understand and interpret advertisements in the same way as adults. Because of differences in their understanding and interpretation of advertisements, they are more vulnerable to the effects of advertisements (Cassim & Bexiga, 2007). The Global Strategy on Diet, Physical Activity and Health emphasises that as food advertisements influence dietary choices, advertisements of food and beverages may not take advantage of children's vulnerability. This strategy encourages the portrayal of healthy messages and advertisements (WHO, 2004).

2.6. Marketing/ advertising of food and non-alcoholic beverages to children in South Africa

South Africa has limited research available on advertisements aimed at children. One study has found that around 55% of advertisements aired on TV advertised fast food restaurants or unhealthy foods (Temple *et al.*, 2008). Research done by Da Fonseca (2010) supported these findings by Temple *et al.* (2008). Da Fonseca investigated the perceptions of parents' on TV food advertising directed at children and found that parents recognized that food advertisements on TV strongly influenced their children's food preferences and eating behaviours. It was also confirmed that South African parents seek reductions in the number of food advertisements on TV as well as stricter restrictions on food advertisements shown during children's viewing hours (Da Fonseca, 2010).

A study done by Mchiza, *et al.* (2013) determined whether there were any significant changes in TV food-related advertising in South Africa by comparing it to the first study by Temple and colleagues in 2008. They determined the amount, content and marketing approaches used by advertisers to influence children and adults to buy the product that are advertised. Television advertisements of foods were investigated on South African free-to-air domestic TV channels, as these channels are viewed by the largest audiences in South Africa (Mchiza *et al.*, 2013). This free-to-air domestic TV channels include SABC 1, SABC 2, SABC 3 and e.TV (SABC, 2004; Mchiza *et al.*, 2013).

The South African Broadcasting Corporation (SABC) TV channels are watched by different ethnic groups in South Africa. The four free-to-air TV channels, SABC 1,2,3, and e.TV are broadcasted in all 11 official languages of South Africa. Only SABC 1, 2 and 3 are funded from licenced fees and the four free-to-air TV channels all receive funds from advertising (SABC, 2004; SABC, 2011).

2.7. Marketing techniques aimed at children

Marketers and advertisers use different methods to advertise food products to children. These methods are usually attractive and engaging to children to increase the purchasing of a product. This may include the use of TV, radio, magazines, newspapers, comics, billboards, viral marketing, direct marketing and e-mails, the internet and online advertising, and print and digital advertising. Integrated marketing linking food products to films and sport stars or celebrities, is another method of advertising. Sponsorships and marketing are methods of advertising used in schools. In stores, animation, free samples or gifts within food packages, sales, low-cost or tie-ins of foodstuffs, point of sale promotions and product placement, competitions, branding, cartoon and brand-based characters are all different methods used to advertise food products (Cairns *et al.*, 2013; Cassim & Bexiga, 2007; Consumers International, 2012; WHO, 2013).

2.7.1. Television

In South Africa, most South Africans have access to the four free-to-air TV channels and it is thus also the channels mostly watched by South Africans (Mchiza *et al.*, 2013). The four free-to-air TV channels include SABC 1, 2, 3 and e.TV. Statistics by the SABC (2011) indicate that SABC 1 is the most popular TV channel in South Africa, attracting almost 22 million viewers in a week. SABC 1 broadcasts in a variety of languages that include English and other African languages. SABC 2 is the TV channel that attracts the second most viewers (18.8 million viewers) per week and broadcasts mostly in Afrikaans and English. e.TV attracts the third most viewers per week (17.9 million) and broadcasts mostly in English, while SABC 3 attracts the fourth most viewers per week (14.9 million), broadcasting mostly English programmes, and American and British comedies and dramas (SABC, 2011). Studies have found that food advertisements are frequently shown during the timeslot of children's programmes. What is alarming, is that more children are watching TV during primetime that is focussed on family programmes, thus increasing the amount of TV viewing throughout the day (Boyland & Halford, 2013).

Despite a decline in advertising on TV because of increased digital media marketing (Cairns *et al.*, 2013; Cassim & Bexiga, 2007), TV still remains the most popular channel for the marketing of foodstuffs (Cairns *et al.*, 2013; Cassim & Bexiga, 2007; WHO, 2013) that targets children (Hastings *et al.*, 2003). Nowadays, children are spending more time watching television and less time on outdoor activities (Hastings *et al.*, 2003). The increase in time that children are spending watching TV, may lead to a greater exposure to the amount of advertisements shown on TV. Research reported a positive correlation between the prevalence of overweight and obesity and the amount of time spent watching TV (Andreyeva *et al.*, 2011; Coon & Tucker,

2002; Folta *et al.*, 2006; WHO, 2013), amongst others because frequent TV viewing may be associated with increased snacking in front of the TV (Andreyeva *et al.*, 2011; Coon & Tucker, 2002; Folta, 2006; WHO, 2013; Zimmerman & Bell, 2010). South African school learners reported that they watch TV for more than three hours a day (Reddy *et al.*, 2010), thus exposing them frequently to advertising. Furthermore, the SABC channels and e.TV allow 10 to 12 minutes of advertising per hour (SABC, 2004) exposing children frequently to advertisements when watching TV (Mchiza *et al.*, 2013). Research has also indicated that the dietary behaviour of children may be influenced when exposed to a high frequency of food advertisements (Dixon *et al.*, 2007).

Although TV viewing is a sedentary activity, it has been suggested that just watching TV does not contribute to obesity (Andreyeva *et al.*, 2011; Cairns *et al.*, 2013; Folta *et al.*, 2006; Zimmerman & Bell, 2010). A positive relationship between the advertisement of HFSS foods (Andreyeva *et al.*, 2011; Cairns *et al.*, 2013; Chapman *et al.*, 2006; Folta *et al.*, 2006) and the increased consumption of these foods when children are exposed to these advertisements has been recognised (Andreyeva *et al.*, 2011; Cairns *et al.*, 2013; Folta *et al.*, 2006). Research suggests that food advertising influences the food choices and requests of children and their attempts to influence their parents' food purchases, thus affecting children's eating patterns and energy intake (Boyland & Halford, 2013; Cairns *et al.*, 2013; Coon & Tucker, 2002; Dixon *et al.*, 2007; Folta *et al.*, 2006; Hastings *et al.*, 2003; WHO, 2010). In addition, HFSS advertisements have a negative effect on children's knowledge of nutrition (Cairns *et al.*, 2013; Hastings *et al.*, 2003) that may lead to a poor quality diet (Boyland & Halford, 2013).

Children have positive attitudes towards HFSS foods when frequently watching commercial TV advertising these foods (Dixon *et al.*, 2007). Television viewing may also lead to an increased energy intake and the consumption of larger quantities of food (Boyland & Halford, 2013; Cairns *et al.*, 2013; Cassim & Bexiga, 2007; Folta *et al.*, 2006), especially of HFSS foods that are advertised on TV (Boyland & Halford, 2013; Cairns *et al.*, 2013; Cassim & Bexiga, 2007; Consumers International, 2005; Folta *et al.*, 2006; Hastings *et al.*, 2003; WHO, 2010; WHO, 2013). Advertisements on HFSS foods may be a reflection of the daily dietary pattern of children (Folta, 2006; WHO, 2003; WHO, 2013). Children and their families that watch TV on a regular basis may also choose different types of foods, usually HFSS foods, when compared to non-frequent TV users (Coon & Tucker, 2002). This may further be associated with the increased burden of overweight in children (Cairns *et al.*, 2013; Cassim & Bexiga, 2007; Folta *et al.*, 2006; Mchiza *et al.*, 2013; WHO, 2013) that may continue into adulthood (Viner & Cole, 2005). This proposes a health risk, as the promotion and advertising of HFSS foods are classified as a modifiable risk factor for the development of non-communicable diseases in children (Cairns *et al.*, 2013).

Halford *et al.* (2007) showed that children aged five to seven years had a significant increased energy intake after exposure to food advertisements. During this study, specific brands of foods were shown in advertisements. Foods that did not include the food brands shown during the advertisements were then offered to the children. Irrespective of this, children still had an increased food intake after exposure to advertisements. This confirmed data from previous findings in older children aged nine to 11 years (Halford *et al.*, 2004). Thus, it can be concluded that TV advertisements have an overall influence on the eating behaviour of children, leading to increased energy intakes (Halford *et al.*, 2004; Halford *et al.*, 2007).

The frequency of food advertisements on TV may be an enormous contributing factor that influence the dietary behaviour of children (Dixon *et al.*, 2007). Dixon *et al.* (2007) have also found that advertisements on healthy foods are not sufficiently signified during children's programme time slots on TV. They suggested that children may have more positive attitudes towards healthy food and may obtain higher nutritional knowledge when exposed to more healthy food advertisements (Dixon *et al.*, 2007).

2.7.2. Food packaging in supermarkets aimed at children

There is little information available on the packaging of foods in supermarkets advertising to children (Elloitt, 2008). The packaging of food may appeal to children through the use of package shapes, strange shapes on packaging, bright colours, puzzles and games on the packaging, cartoon character usage and familiar cartoon characters from TV programmes or movies (Elliott, 2008). Elliott (2008) reported that some of the cartoon characters used on the packaging of food products was engaged in physical activity that might suggest encouragement to exercise.

Research has shown that breakfast cereal products is a HFSS food frequently marketed to children (Cairns, 2013; Cairns *et al.*, 2013; Chapman *et al.*, 2006). In South Africa it has been found that children are frequently consuming breakfast cereals (Tee *et al.*, 2015). A total of 4% of children aged one to five years and 4.3 % of children aged six to nine years consume a portion of 37.5 gram (g) or 42g of breakfast cereal products per day respectively (Nel & Steyn, 2000; Tee *et al.*, 2015). Musicus *et al.*, (2014) reported that cereals marketed to children are placed on the lower shelves in grocery stores than adult cereal products. The bottom two shelves are usually used for cereals marketed to children, while the top two shelves are usually utilized for cereals aimed at adult shoppers. Musicus *et al.* (2014) observed that cartoon characters featuring on the packaging of children's cereal products are looking downwards, while characters on adult cereal packaging are looking forward. The cartoon characters on the cereal packaging marketed to children make eye contact with children, while characters on the

packaging of cereal products marketed to adults make eye contact with adult shoppers. The children experienced a better connection, a sense of trust and more positive feelings towards specific brands when cartoon characters on the packaging of the cereal products made eye contact with them. These researchers concluded that eye contact with cartoon characters on cereal packaging can be used as an advertising tool that increases brand loyalty.

2.8. The use of branding and cartoon characters aimed at children

Branding is a form of marketing that focuses on consumers, including children, with the intention to develop a strong emotional connection between a certain product name or logo and the consumers (Connor, 2006; WHO, 2010). Branding and the use of cartoon characters are strategies used when advertising food and beverages to children (Connor, 2006). Cartoon characters and branding logos on food packaging have been shown to influence the choice, intake, and it increased children's rating of the taste of a specific food product (Lapierre *et al.*, 2011; Roberto *et al.*, 2010; WHO, 2013). The recognition of brands begins early in childhood and can be linked to the eating behaviour and weight status of a child as early as four years (WHO, 2013). Children regard branding as an important role-player in product choice. Because children regard branding as important, most advertisements aimed at children will use branding to influence product choice. Marketers create a loyalty towards a specific brand that would ensure loyalty to choose and purchase a specific product (Connor, 2006).

Loyalty to specific brands is also encouraged through children's clubs, competitions and promotions (Hastings *et al.*, 2003). Tie-ins are frequently used when well-known cartoon characters in children's programmes or movies accompany a specific product (Boylard & Halford, 2013). An example of tie-ins followed on the launch of the SpongeBob Squarepants™ movie in 2014 when the cartoon character was used to promote food products and concurrently SPUR (a family and children friendly restaurant) offered SpongeBob toys with children's meals at their restaurants.

Companies use these promotional strategies to attract children by developing a level of recognition and fondness to increase the demand for the product that was advertised and consequently an increase in the purchase behaviour (Cairns *et al.*, 2013). The exposure to advertisements has a big influence on a change in the preference of food brands and total energy intake in children (Borzekowski & Robinson, 2001). Increased demands lead to increased purchasing of the specific product (Cairns *et al.*, 2013) that would suggest the marketers had reached their goal of selling the product. In conclusion, there is strong evidence that suggests that the advertising of food has an influence on the choice of food product as well as a product brand (Cairns *et al.*, 2013).

2.9. The persuasive intent of advertising and vulnerability of children

Children may not understand the persuasive aspect of advertising and are therefore more vulnerable to the effects of advertising. Persuasive techniques may include the use of cartoon characters, celebrities and giveaways. Most advertisements use fun and happy images when advertising food products and children may then associate these food products with being happy and having fun (Kunkel & Gantz, 1992). Folta *et al.* (2006) researched the effect that advertisements may have on the behaviour of children aged six to 12 years. Focus groups were held in which children viewed and responded to advertisements. It was found that children are affected by the pleasure conveyed by the advertisements of food. The pleasure experienced when watching these advertisements can also lead to the consumption of these foods (Folta *et al.*, 2006).

It is important to understand to what extent children understand specific situations they are placed in, their social competency and their ability to get perspective on a situation in order to understand how they would interpret advertisements that are aimed at them (AEf, 2012). It has been shown that children seven to eight years and younger, do not have the cognitive ability to understand the value of advertisements and are unable to defend themselves against the persuasive effects of advertisements aimed at them (Kunkel *et al.*, 2004).

There are three stages in the development of cognitive defence that include: pre-recognition, intermission intent, and selling intent. During the stage of pre-recognition, children fail to distinguish between an advertisement and a TV program. Children of four to five years of age and younger may fall in this group. The intermission intent stage entails children to believe that advertisements are there to take a break from TV or to get something to eat. At the last stage of selling intent, children are aware of the purpose of advertisements to sell a product. Children may reach this stage at seven to eight years of age (Kunkel *et al.*, 2004). Kunkel *et al.* (2004) recommended that no advertisements must be aimed at children seven to eight years and younger, because they would not understand the selling intent of the advertisement yet. Carter *et al.* (2011) found that by the age of eight years most children were able to identify the selling intent of advertisements, but disagreed that these children would be able to defend themselves against the persuasive intent of advertisements. It was argued that children do not always understand that advertisements may influence them in such a way that they would buy a specific product that they would never do if it was not advertised (Carter *et al.*, 2011). It can thus be concluded that advertisements do have an effect on children as advertisements are not yet clearly understood by them, which may thus influence purchasing behaviour.

In 1999, Roedder-John presented a three stage conceptual model of consumer socialization. This model is based on Piaget's model of cognitive development. The three stage conceptual

model of consumer socialization consists out of the perceptual stage (3 - 7 years), the analytical stage (7 - 11 years), and the reflective stage (11 - 16 years). According to Roedder-John (1999), children who have reached the reflective stage possess a good and established understanding of advertisements and marketing. The reason for this can be contributed to the fact that children in the reflective stage have a better understanding of communication and the perception of people. Children are only able to have an in-depth understanding of abstract ideas and ability to make logical judgements when they have reached adolescence (Roedder-John, 1999). It is only in the reflective stage (children aged 11 to 16 years) that children may understand the persuasive intent of advertising (AEf, 2012; Roedder-John, 1999).

Children have a different understanding of the messages portrayed by advertisements than adults. They are therefore defenceless and predisposed to the effects of advertising (Kunkel *et al.*, 2004). The vulnerability of children to advertisements creates the need for regulatory systems to regulate advertisements aimed at children (Cassim & Bexiga, 2007).

2.10. The role and responsibility of parents in protecting children against HFSS food advertisements

Parents are the ones responsible for the well-being of children as parents are the care-givers. Parental control may be influenced by the control a parent may apply on their children's behaviour. Parents who spoil children and provide to their requests may be more frequently the ones providing confectionary in lunch boxes or as rewards for good behaviour. Parents' need to have control over discipline and must control the time children spend watching TV. Parents must help to educate children on the nature and meaning of advertising in order for children to better understand the purpose of advertising (WHO, 2013).

Discussions of unhealthy food advertising between children and parents may frequently be undermined. Advertisements may create a different picture when showing different parent-child relationships on unhealthy food advertisements (WHO, 2013). This may include parents serving unhealthy foods while giving the message of love and care that can often be misinterpreted (Prell *et al.*, 2011). Children can also be reached through other media devices such as the internet and smart-phones that parents may not always have control over (WHO, 2013). This makes it difficult for parents to control the exposure of their children to HFSS advertisements. Therefore, education on HFSS advertisements and the intent of marketers remain extremely important so that the child can have a better understanding of these advertisements

2.11. Legislation, regulations, pledges and self-regulation governing food marketing to children

Because children are so susceptible to the effects of advertising, the need for the regulation of advertising became crucial to protect children against the effects and influential techniques of advertisements (Consumers International, 2005; Swinburn *et al.*, 2009). As children are regarded as inexperienced, regulations are set in place to avoid harm and to protect children against the harmful effects of advertisements.

Due to consistent evidence indicating that the advertisements and the promotion of HFSS foods may increase the risk for NCDs and are linked to the obesity crisis in children, policies are developed to protect children (Hastings *et al.*, 2003; WHO, 2010). To address the risk for the increased prevalence of NCDs caused by unhealthy marketing practices and the rise in childhood overweight and obesity, the World Health Organization (WHO) developed the “*Set of Recommendations on the Marketing of Foods and Non-alcoholic Beverages to Children*”. This set of recommendations was developed for the purpose of guiding new and developed policies on food marketing aimed at children to limit the marketing of unhealthy foods and non-alcoholic beverages. These recommendations are important, as the marketing of HFSS foods may threaten public health and children must be protected against the devastating effect of these advertisements. Therefore, these recommendations are mandatory in the prevention and control of NCDs (WHO, 2010).

The aim of this set of recommendations is to provide a framework to ensure more responsible marketing of food and non-alcoholic beverages to children. These recommendations are therefore put in place to protect children against the dangers of advertising and the impact of HFSS foods (WHO, 2010).

The WHO set of recommendations on the marketing of foods and non-alcoholic beverages to children consists out of 12 recommendations that should be considered in policy development (WHO, 2010):

- Recommendation 1 states that the policy aim must be focussed on limiting the impact that advertisements of HFSS foods may have on children.
- Recommendation 2 states that the overall objective of the policy must be to limit children’s exposure to marketing and to reduce the powerful marketing techniques used to market HFSS foods to children, as marketing remains an effective and powerful medium to promote the advertisement of foods.

- Recommendation 3 states that comprehensive measures must be taken against the advertisements of HFSS foods in order to achieve the aims and objectives of policies.
- Recommendation 4 states that definitions given in policies must be clear in order to provide a standard for the uniform implementation of a policy. If definitions are clear, the impact and, power of and exposure to advertisements aimed at children can be reduced. To ensure the effective restriction of advertisements to children, definitions need to include age group restrictions for advertising, communication channels, marketing techniques and type of foods.
- Recommendation 5 states that children should not be exposed to any form of marketing of HFSS foods. This may include any environment in which a child may be present, such as schools, playgrounds, paediatric units or clinics, during sport events or at any other activity involving children.
- Recommendation 6 states that governments should protect public interests by being the key stakeholders in policy development and governments should provide leadership in the implementation of policies.
- Recommendation 7 states that the most advanced and effective method in the reduction of the marketing of HFSS foods to children should be considered and a framework thereof must be developed to achieve these objectives.
- Recommendation 8 states that advertising of HFSS foods should be restricted on national level as well as on marketing in other countries in order to ensure maximum impact of the policies.
- Recommendation 9 states that marketers must be encouraged to follow marketing practices and systems must be established to ensure implementation of a policy. A clear set of definitions of authorization is also very important and may include the reporting of complaints.
- Recommendation 10 states that a monitoring system to ensure compliance with policy objectives should be included.
- Recommendation 11 states that an evaluation system must be included to evaluate the efficacy of the aim of the policy.

- Recommendation 12 states that existing information on the degree, character and the effect of marketing to children must be identified. Further research should also be encouraged, also focussing on the implementation of policies to ensure the limitation in the marketing of HFSS foods directed at children.

Self-regulation is frequently used to control advertising (Cassim & Bexiga, 2007). It requires that marketers and companies are encouraged to create messages that are not misleading to the public, but self-regulation are voluntarily and not part of legislation. The companies are responsible to control the behaviour of associates and to voluntarily regulate the content of the advertising by that specific company (CGCSA, 2008). The self-regulatory framework is usually implemented through a “Code of Practice”. The aim of the code is to protect children from harmful advertisements, abuse of children’s naivety and innocence, misleading messages, and to compromise the safety of a child (Cassim & Bexiga, 2007; WHO, 2013). These codes provide principles of marketing messages that need to be followed. Principles may include that marketing messages may not promote disproportionate consumption, or undermine promotion of healthy diets, or obscure the division between programmes, editorial content and advertising (WHO, 2013). Self-regulatory advertising is not always effective and as a result children may still be affected by the harmful and persuasive tactics used in advertisements (Cassim & Bexiga, 2007).

Self-regulation is also used in South Africa (Cassim & Bexiga, 2007). “*The South African Pledge on Marketing to Children*” is a voluntary agreement by companies in the food, beverage, restaurant and retail sector to not advertise products inappropriate to children younger than 12 years. Appropriate advertising may include products that promote healthy dietary choices and a healthy lifestyle. This could be done through the promotion of healthy dietary behaviour and increased physical activity in children. Table 2-4 gives the names of all the companies that have signed the pledge on the marketing to children as agreement to comply with this initiative. These companies have agreed voluntarily not to use any celebrities and cartoon characters or to advertise any unhealthy foods or beverages to children 12 years and younger. Marketing communication on or close to the premises of schools should also be limited and there should be no marketing communication in primary schools (CGCSA, 2008).

Table 2-4: Companies that have signed “The South African Pledge on Marketing to Children” that is also part of CGCSA (2008)

Company	International pledge also in place to enhance commitment
Cadbury	✓
Coca-Cola	✓
Danone	✓
Entyce/ Snackworks	
Epic	
Foodcorp	
General Mills	✓
Kellogg	✓
Kraft	✓
Mars	✓
Nestlé	✓
Oceana brands	
Parmalat	
Pepsico/Simba	✓
Pioneer Foods	
Rainbow Chicken	
Tigerbrands	
Unilever	
Famous Brands (Wimpy, Steers)	
KFC	
McDonalds	✓
Nando's	
Pick n Pay	

(Ref: CGCSA, 2008)

However, problems with advertisements may still be experienced due to shortcomings in the voluntary pledges. This may include that not all companies have signed these pledges (WHO, 2013). Most of the companies have not made any commitments to the pledge, causing a barrier in the protection of children against advertisements (Igumbor *et al.*, 2012). Advertising may still permit branding promotions that include cartoon characters associated with the product. Advertising may also be allowed during TV programmes that are watched by children even if it is not classified as child-targeted TV programmes. In the end, pledges still remain voluntarily and companies have the right not to sign, or can change or abandon the pledge at any given time (WHO, 2013). Food labelling and packaging that use branding, cartoon

characters, bright colours, shapes and the inclusion of free gifts in HFSS products, are also not restricted (WHO, 2013).

The South African Department of Health Directorate on Food Control (DOH) published the **Draft** Guidelines relating to the Food Labelling and Advertising of Foods (No. R429 of 29 May 2014). According to these guidelines, unhealthy food may not be marketed to school-going children from grade 0 to grade 12. Child actors younger than 18 years, using of celebrities or sport stars, cartoon characters, puppets, or any form of computer animation, and the use of competitions, gifts or collectable items may also not be used to market unhealthy foods to children. These guidelines further state that the marketing of unhealthy food or marketing activities aimed at children may not be advertised on television between 6:00 in the morning and 21:00 in the evening (DOH, 2014). The **draft** guidelines were thus developed to limit the advertisement of unhealthy foods and beverages to children 12 years and under (CGCSA, 2008).

In South Africa, the government compiled a draft based on the Foodstuffs, Cosmetics and Disinfectants Act, 1972 (Act 54 of 1972) that restrict the advertising of foods to children younger than 16 years of age. According to this draft, the advertising of foods that would be classified as “non-essential to a healthy lifestyle” to children would be prohibited to be advertised. These foods may include carbonated drinks, confectionary, potato chips, and fast foods. These regulations are intended to prohibit the use of cartoon characters, puppets, animation, tokens, or gifts used to market foods to children (DOH, 2010; Igumbor *et al.*, 2012).

The Advertising Standards Authority (ASA) of South Africa is the monitoring body for the self-regulation of advertisements in South Africa (ASASA, 2011; Cassim & Bexiga, 2007). The ASA food and beverage code Section II, Clause 4-1, discourages the promotion of less healthy food on TV directed at children younger than 12 years (ASASA, 2011). A study performed by Da Fonseca (2010) has shown that in spite of the ASA code, children are still not protected against advertisers (Da Fonseca, 2010). The ASA regulations have endorsed 31 consumer goods companies to sign a pledge endorsed by the Consumer Goods Council of South Africa (CGCSA). This pledge is based on the South African food-based dietary guidelines of healthy living (Gibney & Vorster, 2001).

It has been shown that restrictions on advertisements need further restrictions from an ethical point of view to protect children of 12 years and younger against advertisements (Carter *et al.*, 2011). Therefore, more structured and regulated regulations and legislation are needed in order to protect children against the effects of advertisements (Cassim & Bexiga, 2007).

2.12. Conclusion

It is a well-known concept that advertisements of HFSS foods aired on TV and aimed at children have a direct correlation to the prevalence of overweight and obesity that can start early in childhood and continue until adulthood (Cairns *et al.*, 2013; Dixon *et al.*, 2007). The use of branding and cartoons, either in TV advertisements or on breakfast cereal packaging aimed at children has also shown to increase brand loyalty and increase the requests for the specific product (Connor, 2006). However, marketing messages on HFSS foods should not be directed to persons who have not reached the age to be competent in protecting themselves against marketing techniques (WHO, 2013).

Chapter 3 is the article based on the research conducted in this study that will be submitted for publication. In South Africa there is limited data on the use of branding and cartoon characters in the marketing on TV and on breakfast cereal packaging aimed at children. This study is aimed to provide more information about TV and breakfast cereal packaging marketing aimed at children by using cartoons and branding. This study would provide a clearer picture of the current child directed marketing situation in South Africa. The information obtained from this research can be used in the development of new regulations or legislation on advertisements aimed at children in order to protect children against the devastating marketing effects of HFSS food advertisements.

CHAPTER 3

ARTICLE

CHAPTER 3 ARTICLE

The article has been written based on the author guidelines of the journal *Appetite*. The article will be submitted for publication after the examination of the mini-dissertation. Any suggestions made by the examiners will be included before submission.

Branding and cartoon character usage in food marketing to children: the South African picture

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Abstract

The aim of the study was to describe the frequency of advertising and the use of cartoon characters and branding as a marketing strategy of food and non-alcoholic beverages promoted to children aged 3 to 18 years. The four South African free-to-air television (TV) channels were recorded from a Monday to a Thursday and one Saturday from 06:00 to 22:00 in the last week of the months April, June, September and November 2014. The recordings were screened for advertisements. Breakfast cereal products were also investigated in the largest supermarkets in Potchefstroom, North West province, where the study was conducted. Information on breakfast cereal packaging was then accumulated. The use of cartoon characters and branding was described as techniques used in the food marketing aimed at children. Of the 4916 TV advertisements, 1030 were food advertisements (17.9% containing cartoon characters) in which the majority of advertisements aimed at children advertised sweets, confectionary and snack foods, sugared beverages, pre-sugared breakfast cereals, and sweetened milk and dairy products. The least amount of advertisements advertised healthy foods (1.4%). A total of 131 breakfast cereal products were marketed to children. Persuasive techniques on breakfast cereal packaging included cartoon characters (52%), children featuring on the packaging (44%), games (15%), collectable items (9%), and competitions (6%). Breakfast cereals aimed at children were also placed on the lower shelves and cartoon characters looked downwards to make eye-contact with the children. Although advertising can only be seen as one contributing factor to obesity in children, addressing the food industry to ensure responsible advertising to children may be one step towards addressing the overweight crisis and preventing non-communicable diseases (NCDs) that may start early in childhood.

Keywords: Overweight, obesity, child, branding, cartoon, marketing

Introduction

Overweight and obesity have reached epidemic proportions and are increasing in low- and middle income countries worldwide (WHO, 2013) to such a high degree that it is negatively influencing childhood health (Dixon *et al.*, 2007; Ebbeling *et al.*, 2002). The current picture in South Africa also indicates a country that is increasingly struggling with the burden of childhood overweight and obesity, with the highest prevalence of overweight and obesity found in the urban formal and informal areas with a lower prevalence in the rural areas. In the age group of two to 14 years, more than 15% (16.5%) of girls and 7.1% of boys are overweight and a further 11.5% of girls and 4.7% of boys obese. In the two to five year old group, the situation is even worse with nearly 20% being overweight (18.9% girls; 17.5% boys)(Shisana *et al.*, 2013). Obesity during childhood is also a risk factor for the development of non-communicable diseases (NCDs) that can start early in childhood (Cassim & Bexiga, 2007; Elliot, 2008; Shisana *et al.*, 2013; WHO, 2013). Contributors to the increase in overweight and obesity amongst children may include a lack of physical activity, certain lifestyle changes, socio-economic status, unfavourable physical environments, less healthy diets with an increased consumption of food and non-alcoholic beverages high in fat, sugar and/ or salt (HFSS foods), and the aggressive marketing of HFSS foods (Andreyeva *et al.*, 2011; Ebbeling *et al.*, 2002).

Children form an important part of the consumer market because of their individual spending power as well as the influence children have on their parents' purchasing behaviour and choices of food products (AEf, 2012; Boyland & Halford, 2013; Caroli *et al.*, 2004; Cassim & Bexiga, 2007; Consumers International, 2005; Folta *et al.*, 2006; Hastings *et al.*, 2003; Hastings *et al.*, 2009; Preston, 2005). The food industry and marketers see children as risk takers, explorers, and early adopters to new technology that plays a vital role in determining the importance of the child in the consumer market (Boyland & Halford, 2013). For these reasons marketers are marketing their products to children. This is a concern, as children are vulnerable to the effects of advertising (Cassim & Bexiga, 2007; Kunkel *et al.*, 2004), because they do not understand the persuasive intent of advertisements. Research by Kunkel *et al.* (2004), suggests that children aged seven to eight years and younger, do not have the cognitive ability to understand the persuasive intent of advertisements and can therefore not defend themselves against the effects of advertisements.

Marketers use different promotional channels for advertising to children, but TV still remains the main medium with newer media also on the increase (Cairns *et al.*, 2013; Cassim & Bexiga, 2007; Hastings *et al.*, 2003; WHO, 2013). Marketing communication may include: online advertising, the internet, product placement in TV programmes, branding and cartoon character usage, viral marketing, radio, cinemas, information services, magazines and posters,

sponsorships, educational materials, sport clubs and in-schools marketing, use of celebrities, direct marketing, e-mails, and text messaging. In stores, the point of sale placements of food products and promotions, product packaging, and product design are also creative ways to market food products. Lastly, integrated marketing, in which food is linked to new movies or toys is also used to increase the selling of the product (Cairns *et al.*, 2013; Consumers International, 2012; Hastings *et al.*, 2003; WHO, 2013).

Foods and non-alcoholic beverages high in fat, sugar or salt (HFSS) are the main foodstuffs promoted to children (Cairns, 2013; Cairns *et al.*, 2013; Cassim & Bexiga, 2007; Elliot, 2008; Hastings *et al.*, 2009; WHO, 2010; WHO, 2013) that include snack foods, sugared beverages, sweetened breakfast cereals, confectionary and fast food (Hastings *et al.*, 2009). A positive correlation exists between the exposure to HFSS food advertisements and the intake of HFSS foods (Andreyeva *et al.*, 2011; Cairns *et al.*, 2013; Chapman *et al.*, 2006; Folta *et al.*, 2006). Frequent exposure to HFSS food advertisements through TV viewing may create positive attitudes towards HFSS foods, affecting the dietary behaviour of children (Dixon *et al.*, 2007).

The South African National Department of Health published **draft** legislation to regulate the advertising of foods and non-alcoholic beverages to children (DOH, 2014). However, research to inform this regulation is limited. One study reported on the use of cartoons and branding in advertisements and on food packaging in South Africa (Mchiza *et al.*, 2012; Temple *et al.*, 2008). Furthermore, a recent study focusing on the breakfast behaviour of adolescents in the North West Province of South Africa indicated that nearly 50% of those adolescents who had breakfast the day before the study, consumed a breakfast cereal (Tee *et al.*, 2015). Research has indicated that breakfast cereals can be classified as HFSS foods (Cairns, 2013; Cairns *et al.*, 2013; Chapman *et al.*, 2006).

In the current study, TV advertisements and breakfast cereal packaging are described as the two promotional channels used by food marketers. The purpose of this research was to describe TV advertising and the usage of branding and cartoon characters in the marketing of food and non-alcoholic beverages to children aged 3 to 18 years in South Africa. For the purpose of this study, a child is classified as a boy or a girl from the age of three to the age of 18 years.

More specifically, the researchers determined the frequency and type of food product advertisements aimed at children on the non-pay television channels by examining the use of branding or cartoon characters. The researchers investigated which breakfast cereal products were marketed to children and how cartoon characters and branding were used.

Methods

Study Design

This study uses an observational study design.

Advertisements on Television

In South Africa, most people have access to the four non-paying domestic TV channels that are viewed by the largest audiences (Mchiza *et al.*, 2013; SABC, 2011). The four non-paying South African TV channels, SABC 1, SABC 2, SABC 3 and e.TV, were recorded once from 06:00 to 22:00 from Monday to Thursday and Saturday in the last week of the months April, June, September and November 2014. These months were chosen in order to capture different advertisements with seasonal changes as well as changes during the holidays and with other festivities like Christmas. SABC 1 attracts the most viewers per week (22 million viewers) and broadcasts in a variety of languages including English and other African languages. SABC 2 has the second highest viewer figures at around 18.8 million viewers weekly. The channel e.TV attracts around 17.9 million weekly viewers and 14.9 million viewers per week are watching SABC 3 (SABC, 2011).

The sample size was obtained by reviewing previous articles. A previous Australian study by Chapman *et al.* (2006) included TV programmes and advertisements and recorded the three non-paying Australian TV stations. Programmes and advertisements between 07:00 and 21:00 were recorded, but they only included two week and two weekend days. A previous study in South Africa that recorded children's programmes only recorded two of the four non-paying TV channels. Only children's programmes on SABC 1 and SABC 2 were recorded on weekdays between 09:00 and 11:00 during the time slot for children's programmes (Temple *et al.*, 2008). Another South African study recorded all four non-paying TV channels between 15:00 and 21:00 hours for seven consecutive days over a four week period (Mchiza *et al.*, 2013). After these articles were examined, it was decided to include children's programming times as well as family viewing times in which children would possibly watch TV with adults.

For advertising purposes, SABC and e.TV allow a maximum of 10minutes to 12 minutes of advertising hourly (SABC, 2004). The VideoMate C200 Plus USB Video/Audio Capture stick was used to record the advertisements. The first author viewed and manually analysed the recordings to determine the number and type of advertisements directed at children.

The inclusion criteria only included the four non-paying domestic TV channels in South Africa. Secondary inclusion criteria for food advertisements on TV aimed at children were the use of branding and/ or cartoon characters, whether children were used in the advertisement, whether

the advertisement was shown in children's programming time (times on TV dedicated for children's programmes) or any other method used as marketing strategy aimed at children. Advertisements aimed at adults only, and advertisements on household products, slimming products and all non-food products were all excluded. Non-TV advertisements, such as advertisements on billboards, advertising in take away outlets, radio, magazines, internet, social media or by any other means of advertising to children were also excluded.

Branding and cartoon characters on packaging of breakfast cereals

Research has shown that HFSS foods that include sweetened breakfast cereals are frequently marketed to children (Cairns, 2013; Cairns *et al.*, 2013; Chapman *et al.*, 2006). In South Africa, a study by Tee *et al.* (2015) found that ready-to-eat breakfast cereals are one of the most frequently breakfast foods consumed by school-going children in grade nine to grade 11. It was also found that breakfast cereals are consumed daily by 4% of children aged one to five years and 4.3% of children aged six to nine years. The average daily portion consumed was approximately 37.5 to 42 g (Nel & Steyn, 2000). Therefore, breakfast cereals were investigated as a frequently consumed food by South African children.

The marketing practices of the largest retailers in South Africa were investigated. The largest retailer is Shoprite Holdings Ltd that includes different stores with the names Shoprite, Checkers, Friendly, Seven Eleven and Price Club Discount Supermarket. Pick 'n Pay is the second-largest supermarket chain in South Africa. The Pick 'n Pay group includes stores named Score Supermarkets and Boxer (Ventures, 2012). The largest supermarkets in the local town, Potchefstroom, included for data extraction in this study, were then identified as Shoprite (in the Riverwalk Mall), Checkers (in the Moorivier Mall) and Pick 'n Pay (in the Westacres Centre).

Shoprite, Checkers and Pick 'n Pay were visited in September 2014 and data on the packaging of breakfast cereal products was collected once. The George Institutes Data Collection Application version 1.1 was used to collect data on the packaging of breakfast cereal products after which it was downloaded on an iPad® (Dunford, 2014). Data was collected by taking specific photos of the cereal packaging that were aimed at children. The first step was scanning the barcode by holding the iPad® over the product's barcode, this was followed by taking a photo of the front of the breakfast cereal packaging. The second photo of the product's nutritional information panel was taken where after the third photo of the product's ingredients list was taken. Blurry photos were taken again before uploading and using it. After all the photos were taken, it was uploaded and captured (Dunford, 2014).

The inclusion criteria included only the three biggest supermarkets in Potchefstroom, South Africa. Secondary inclusion criteria on the packaging of breakfast cereals included the use of cartoon characters including brand-owned and licensed characters aimed at children, branding directed at children, foregrounding of unusual and bright colours, puzzles, competitions or games, the provision of free gifts in the packaging, and the use of celebrities, personalities or individuals who may appeal to children (Elliott, 2008; Consumers International, 2012). Exclusion criteria included all supermarkets not mentioned and cereal packaging aimed at adults only. The collected data was used to create a profile of breakfast cereals marketed to children in the above mentioned South African supermarkets. For the purpose of breakfast cereal packaging in supermarkets, all cereal packaging which made use of cartoon characters and branding as marketing strategy to children, were included and collected on one occasion.

Ethical aspects and approval

As there was no contact with living individuals in this study, there were no ethical implications. The researcher was not exposed to any risks greater than normal day-to-day living. However, the protocol was submitted to and approved by the Health Research Ethics Committee of the Faculty of Health Sciences of the North West University, Potchefstroom, South Africa.

Statistical analysis

The computer software package IBM SPSS® Statistics 22 (Statistical Package for Social Sciences, IBM, NY, USA) was used to do the statistical analysis. The data was presented as numbers and percentages. Data proportions were compared using the Pearson Chi-Square test. Statistical significance was indicated by a p-value of ≤ 0.05 . The strength of associations was determined using Cramer's V-value. The guidelines determining the degree of effects described by Cramer's V-value are:

- 0.1 indicates a small effect
- 0.3 indicates a medium effect
- 0.5 indicates a big effect

As the database consists out of a large amount of data, it is easier to get a p-value with statistical significance. Therefore, it is necessary to investigate the practical significance of the association with Cramer's V-value to indicate the strength of the association.

Results

Advertisements

Overall advertisements on South African TV

A total of 4916 advertisements were shown during the recording times over the four month period (Figure 1). These advertisements included for example advertisements on foods, alcoholic beverages, sugared beverages and sports drinks, funeral and life cover and promotions from supermarkets and new motor vehicles from different manufacturers; thus these were not only advertisements aimed at children.

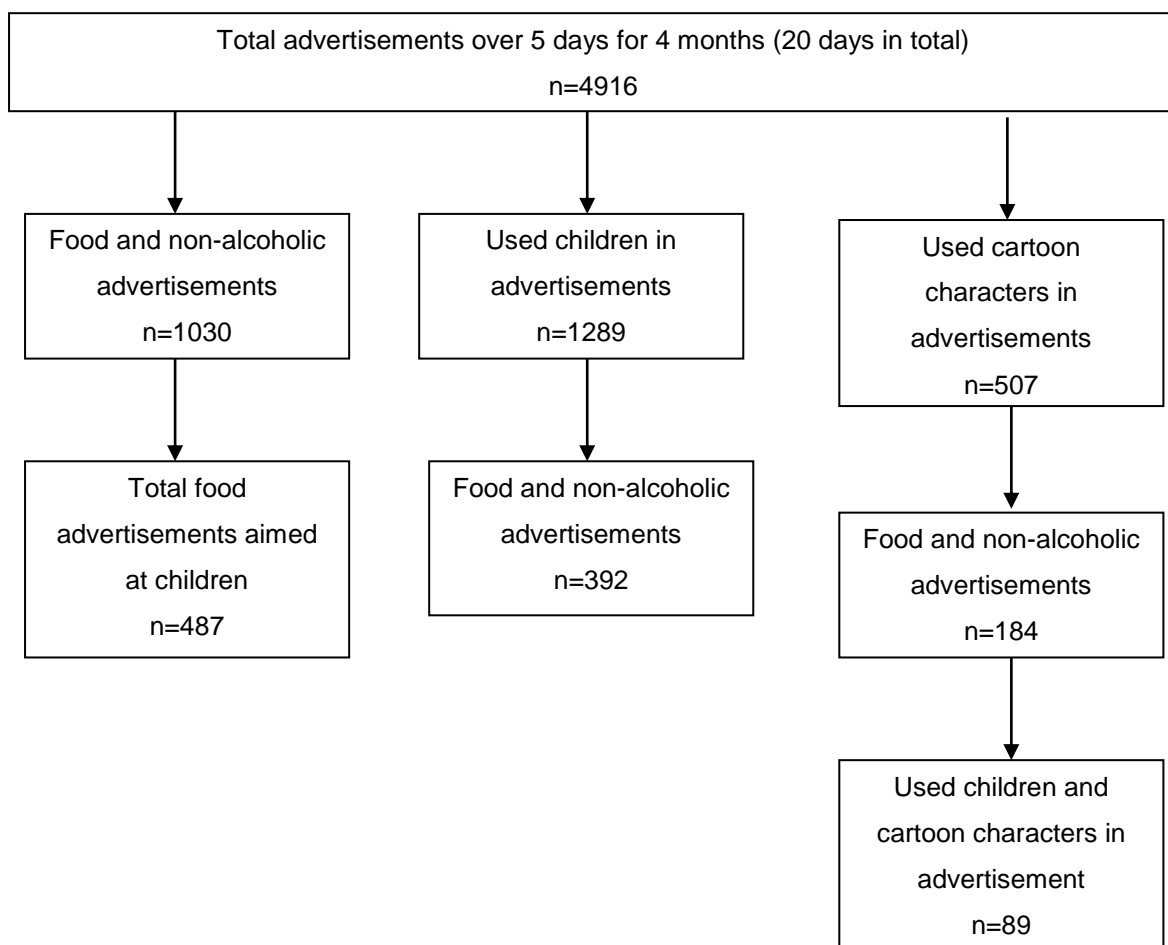


Figure 1: Number of advertisements over 5 days for 4 months showing different categories of advertisements

A detailed description of the amount of advertisements shown on different weekdays on different channels is provided in Table 1. Most advertisements were aired during weekdays on

a Wednesday (1115-22.7%) followed by Thursday (1055-21.5%), with the lowest number of advertisements aired on a Saturday (861-17.5%). e.TV showed the most advertisements (n=1350), and the least were aired by SABC 2 with a total of 1138 advertisements.

Table 1: The total amount of advertisements shown on different weekdays from 06:00 to 22:00 on free-to-air TV channels in South Africa over 4 months

Weekday	TV Channel									
	SABC 1		SABC 2		SABC 3		e.TV		Total ads per day	
	n	%	n	%	n	%	n	%	n	%
Monday	244	26.6	172	18.7	213	23.2	290	31.6	919	100.0
Tuesday	254	26.3	259	26.8	207	21.4	246	25.5	966	100.0
Wednesday	244	21.9	275	24.7	314	28.2	282	25.3	1115	100.0
Thursday	247	23.4	224	21.2	321	30.4	263	24.9	1055	100.0
Saturday	200	23.2	208	24.1	184	21.3	269	31.2	861	100.0
Total for 5 days over 4 months= 20d	1189	24.2	1138	23.1	1239	25.2	1350	27.5	4916	100.0
Total per day	59.5		56.9		62.0		67.5		245.9	

n: number, %: percentage, TV: television, SABC: South African Broadcasting Corporation, ads: advertisements, d:day

Table 2 indicates that the highest number of advertisements was broadcasted during the festive seasons in November (1409-28.7%) and Easter during the month of April (1280-26.0%).

Table 2: Total amount of advertisements shown in South Africa during the months of recordings

Weekday	Month of recording							
	April		June		September		November	
	n	%	n	%	n	%	n	%
Monday	244	19.1	172	15.4	213	19.2	290	20.6
Tuesday	259	20.2	207	18.5	246	22.1	254	18.0
Wednesday	314	24.5	282	25.3	244	22.0	275	19.5
Thursday	263	20.5	247	22.1	224	20.2	321	22.8
Saturday	200	15.6	208	18.6	184	16.6	269	19.1
Total	1280	100.0	1116	100.0	1111	100.0	1409	100.0

n: number, %: percentage

Food and non-alcoholic beverage advertisements on South African TV

A total of 1030 (21% of the 4916) food and non-alcoholic beverage advertisements were aired over the four month period of which 487 (47% of the 1030; 10% of the 4916) were aimed at children. A detailed description of the type of foods that were advertised is provided in Table 3.

Table 3: Type and amount of food advertisements aired on South African free-to-air TV channels over four periods of recording (n= 1030)

Food Category	Months of recordings								Total	
	April		June		September		November			
	n	%	n	%	n	%	n	%	n	%
Infant and follow up formula	2	40.0	2	40.0	0	0.0	1	20.0	5	0.5
Breakfast cereals	24	24.7	18	18.6	34	35.1	21	21.6	97	9.4
Sweets, confectionary and snacks	29	18.8	50	32.5	26	16.9	49	31.8	154	14.9
Meat/ chicken or fish	9	23.7	3	7.8	21	55.3	5	13.2	38	3.7
Fats and spreads	11	64.7	3	17.6	0	0.0	3	17.6	17	1.7
Milk and dairy products	22	23.7	4	4.3	24	25.8	43	46.2	93	9.0
Fast foods and franchises	44	21.8	67	33.2	38	18.8	53	26.2	202	19.6
Sweetened beverages and energy drinks	16	14.0	13	11.4	43	37.7	42	36.8	114	11.1
Soups and condiments	31	73.8	0	0.0	6	14.3	5	11.9	42	4.1
Coffee, tea and other hot beverages	13	22.8	14	24.6	11	19.3	19	33.3	57	5.5
Fruit and vegetables	3	30.0	5	50.0	0	0.0	2	20.0	10	1.0
Supermarket promotions	12	8.2	52	35.4	25	17.0	58	39.4	147	14.3
Starchy foods	13	27.1	6	12.5	12	25.0	17	35.4	48	4.7
Tinned products	0	0.0	3	60.0	0	0.0	2	40.0	5	0.5
Water	0	0.0	0	0.0	1	1.0	0	0.0	1	0.1
Total	229	22.2	240	23.3	241	23.4	320	31.1	1030	100.0

TV: television; n: number, %: percentage

The largest amount of advertisements were those advertising fast foods and franchises and sweets, confectionary and snack foods that may include chocolates, other sweets, chips, cookies and other snack foods. These foods that were advertised are considered to be less healthy foods and high in fat, sugar and/or salt. Sweetened beverages and energy drinks were

also foods that were more frequently advertised with more advertisements during the seasonal change to summer. There were also an increased amount of ice cream advertisements during summer. The advertisement of cereal products aimed at children was also very popular and included mostly pre-sugared breakfast cereals.

Advertisements aimed at children on South African TV

The use of children in advertisements

A total of 1289 (26%) of the total advertisements (n= 4916) during the recordings used children in the advertisement to market a specific product. Nearly 400 (n= 392; 30.4%) of these advertisements (n= 1289) advertised foods and non-alcoholic beverages. Children were mostly used in advertisements during November when all the festive advertisements to market food products were aired. One fast food outlet used children in almost all of their advertisements to market the fast food product. This fast food outlet also gave the message: “Sithi Salute Kleva”. This means, if you are streetwise we salute you. Table 4 provides the amounts of food advertisements using children to market food products on the different TV channels on different weekdays.

Table 4: Children used to market food products in advertisements over 4 months (n=392)

Weekday	Amount of advertisements using children to market food products (%)				Total	P-value	Cramer's V-value
	SABC 1	SABC 2	SABC 3	e.TV			
Monday	22.1	22.7	31.9	26.6	25.9	0.77	0.086
Tuesday	35.0	30.1	24.6	25.2	29.0	0.040*	0.093
Wednesday	29.1	36.7	14.6	13.5	23.0	0.000*	0.234**
Thursday	25.3	24.1	27.7	23.2	25.3	0.618	0.041
Saturday	23.0	26.4	29.9	34.2	24.8	0.051	0.095

#: percentage, TV: television, SABC: South African Broadcasting Corporation.

*A p-value \leq 0.05 indicates a statistical significant association between the food advertisements using children and the different weekdays. There was thus a statistical significant association with children used in advertisements to market food products. This association were found on a Tuesday and on a Wednesday.

**The Cramer's V-value indicates the strength of associations made, where 0.1 indicates a small effect, 0.3 indicates a medium effect, and 0.5 indicates a big effect. As the Cramer's V-value was below 0.1 for most of the days, and below 0.3 for a Wednesday, there was not a strong (small) association between any of the weekdays and children used in advertisements to market food products.

The use of cartoon characters and branding in advertisements to children

Over the four month period, only 507 (10%) of the advertisements made use of cartoon characters to market products of which 184 advertisements were advertising food and non-alcoholic beverages aimed at children. Of these 184 advertisements that portrayed cartoon characters to market foods or non-alcoholic beverages, a total of 89 combined children and cartoon characters to market food products. These advertisements mostly advertised sweetened milk products such as sweetened yoghurt (29%), followed by sweetened beverages (28%), confectionary that included chocolates and ice cream (27%), and sweetened breakfast cereals (16%). Advertisements that used animation to attract the attention of children, displayed a couple of messages at the end of the advertisement. Messages by sweetened breakfast cereal products included “Good food made for great kids”. Some breakfast cereal packaging contained free stickers that can be used to dress cartoon characters to become rock stars at the back of the breakfast cereal package, and another breakfast cereal product used the Angry Birds® theme and included an exclusive game of Angry Birds® in selected packages. One family restaurant used the cartoon character, Spongebob Squarepants®, to market food products to children. Children could collect a Spongebob Squarepants® toy with their meal and could collect up to six toys. This was at the same time that the Spongebob Squarepants® movie was launched in cinemas. The Spiderman® theme was used to market a hot sugared beverage. In this specific advertisement, the message of “smarter, tougher, faster” was portrayed. This product was accompanied by a message that consumers may get a free Spiderman® lunchbox if two of these products were purchased.

Advertisements on healthy foods

The minority of advertisements (14 advertisements; 1.4%) aimed at children recorded over the four week period were for healthy foods. No healthy food advertisements were shown during the time slot airing children’s programmes. Only 10 (1%) of the advertisements advertised fruit and vegetables of which five used children to market fruit and vegetables. A total of three of the advertisements advertised full cream milk, but they did not include children or animation as marketing strategy. Lastly, only one advertisement advertised water and included children to market the product. This shows that advertisements of healthy foods and beverages are used the least in the advertisement of food items.

Times of food advertisements

A total of 452 advertisements were shown during children’s programming times of which 99 advertised food products. These advertisements mostly advertised HFSS foods. Of these 99 advertisements aimed at children, the most advertisements included sweets, confectionary and

snacks (36%), sweetened breakfast cereals (23%), sugared soft drinks (16%), and sweetened milk and dairy products (12%). The rest of the 99 advertisements shown in during children’s programming times included starchy foods (8%) and fast foods and franchises (5%).

Most of the food-related advertisements (n+99) were aired in family viewing time between 12:00 and 14:00 and 17:00 and 22:00. It was also observed that only 5 fast food advertisements were shown during children’s viewing times, but these advertisements were shown more regularly during lunchtime (13:00-14:00) and supper time and accounted for 202 (19.9%) of all food advertisements. These times of advertising are considered as family viewing times, in which it is expected that most families spend time watching TV together. Thus, during these times it is expected that children are exposed to a higher amount of advertising.

Although alcohol was not part of the research strategy, it was shocking to see that a total of 332 of the 4916 advertisements advertised alcoholic beverages. These advertisements were not aired during children’s programming times nor used any children in the advertisements, but were shown during times families would be expected to watch television together. This included lunch times between 12:00 and 14:00 and in the time slot between 17:00 and 22:00.

Breakfast cereal Packaging

Overall results on breakfast cereal packaging

On the day of the visit, a total of 486 breakfast cereal products were found on the shelves in the supermarkets. A total of 131 (27%) of the cereal products were marketed to children and 355 (73%) products to adults only. Table 5 provides the total amount of breakfast cereal products marketed at the different supermarkets.

Table 5: The total number of breakfast cereal products marketed in different supermarkets on the research day

Supermarket	Number of breakfast cereals n (%)	Amount of breakfast cereals marketed to children n (%)	Amount of breakfast cereals marketed to adults n (%)
Supermarket 1	188 (38.68)	42 (32.06)	146 (41.13)
Supermarket 2	120 (24.69)	45 (34.35)	75 (21.13)
Supermarket 3	178 (36.63)	44 (33.59)	134 (37.75)
Total	486 (100)	131 (100)	355 (100)

n: number, %: Percentage

Figure 2 illustrates the comparison between the amount of cereal products marketed to adults and the amount of cereal products marketed to children. As seen in figure 1 and in table5, there is an even distribution of cereal products marketed to children in the three different supermarkets.

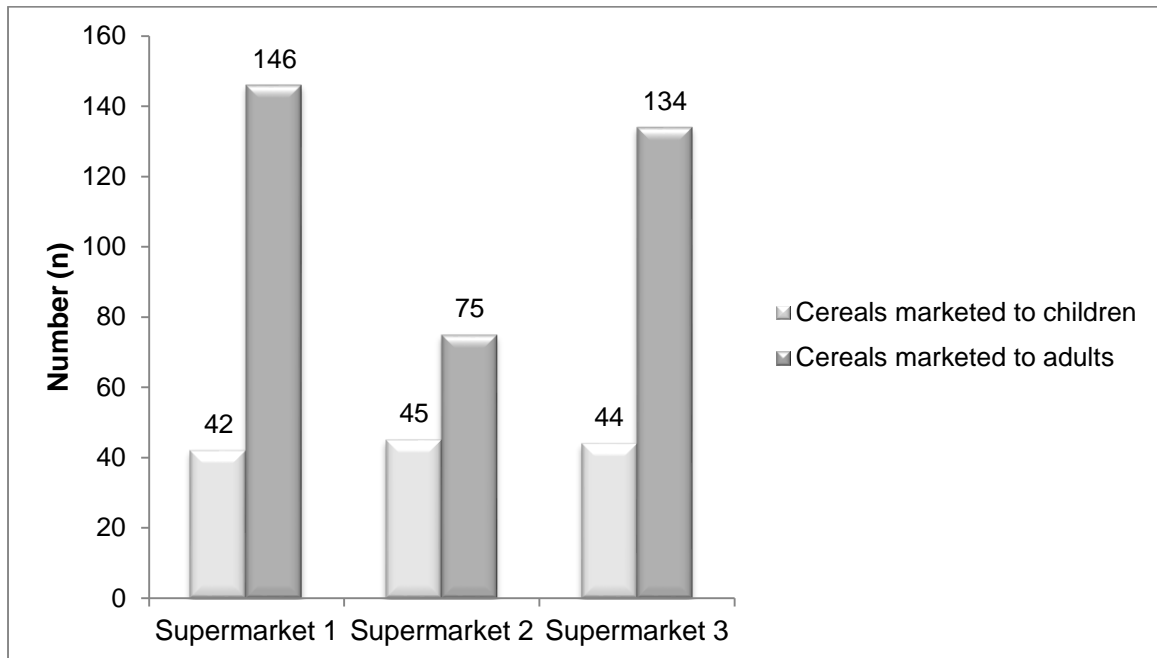


Figure 2: The comparison of the amount of breakfast cereal products targeting adults and children in the different supermarkets

Branding and cartoon character usage on cereal packaging aimed at children

At the time of data collection, more than 50% of the breakfast cereal products aimed at children portrayed cartoon characters. Cartoon characters used included company characters connected to the product such as “Tony the tiger”, “Sammy the seal”, “Snap, Crackle and Pop” and the “Nesquik bunny”. Other cartoon characters that were used were cartoon characters used in children’s programmes such as Spongebob Squarepants® and the Smurfs®. A total of 44% of breakfast cereal products marketed to children portrayed a picture of children on the packaging of the cereal product. A total of 15% of the breakfast cereal products aimed at children included a game that children can play together on the back of the cereal packaging; for instance dressing cartoon characters with “rock-star gear stickers” and other board games. The front of these products’ packaging also displayed either children or cartoon characters in combination with the game at the back of the packaging. Including a collectable item inside the packaging or as part of the packaging is another technique used to market cereal products to children (9%). These products’ packaging also portrayed pictures of children. The use of competitions on the packaging of cereal products is another method used to increase the selling

of the product. More than 5% (6%) of breakfast cereal products made use of competitions with cartoon characters to increase the selling of the product. All products marketed to children contained bright colours on the packaging to attract the attention of the consumer.

Placement of cereal products

All the cereal products marketed to children were placed on the lower shelves. This makes it easier for children to make eye contact with the cartoon characters, and view the pictures, colours, etc. on the packaging of the breakfast cereal products and placed within the reach of the child. The higher shelves were reserved for cereal products aimed at adults only. It was also observed that the cartoon characters on the packaging looked downward to make eye contact with the children as they pass by.

Discussion

If a child watches one TV channel each day of the year, that child will be exposed to at least 2222 (6 per day) TV advertisements advertising food and non-alcoholic beverages specifically targeting him/her. In addition, if that child visits one supermarket every day of the year, he/she would be exposed to 14600 (40 each day) sugar-sweetened breakfast cereals specifically targeting him/her.

Television advertisements

Television is still a major source of food and beverage advertisements targeting children in South Africa. Nearly 50% of all the food and beverage advertisements aired on the four non-pay TV channels over four months targeted children. This confirms that TV is still a leading promotional and communication channel (Cairns *et al.*, 2013; Cassim & Bexiga, 2007; Hastings *et al.*, 2003; Mchiza *et al.*, 2013; WHO, 2013).

TV frequently advertises HFSS meals and beverages and this may contribute to the consumption of these energy-dense meals and non-alcoholic beverages by children (Mchiza *et al.*, 2013; WHO, 2013). It has been found that there is a strong correlation between the time children may spend watching TV and the prevalence of obesity (Caroli *et al.*, 2004; Hastings *et al.*, 2003). However, research has suggested that the viewing of TV does not cause obesity just because it is a sedentary activity (Andreyeva *et al.*, 2011; Cairns *et al.*, 2013; Folta *et al.*, 2006; Zimmerman & Bell, 2010). Obesity is rather caused by a positive correlation between the advertisements of HFSS foods (Andreyeva *et al.*, 2011; Cairns *et al.*, 2013; Chapman *et al.*, 2006; Folta *et al.*, 2006) and the overall intake of HFSS foods by children that are exposed to a high amount of HFSS food advertisements (Andreyeva *et al.*, 2011; Cairns *et al.*, 2013; Folta *et al.*, 2006).

Although we did not investigate the effect of HFSS foods advertisements aired on TV on the food behaviour of children, research indicated that HFSS food advertisements on TV may influence children's food preferences and requests for certain food products that were advertised (Hastings *et al.*, 2003).

The SABC TV channels allow 10 minutes to a maximum of 12 minutes of advertising per hour (SABC, 2004). During the recordings, it was observed that advertisements frequently exceeded the maximum of 12 minutes per hour. These longer airings of advertisements that the children were exposed to, were influenced by advertisements shown by political parties, the Soccer World Cup and influences of festivities such as Easter and Christmas.

Type of advertisements on TV aimed at children

Children's programmes were mostly aired between 06:00 and 11:00 and again from 14:00 to 17:00. In the present study, the minority of advertisements were shown during children's programming time, with most advertisements shown during lunch (12:00 to 14:00) and dinner times that continued till late at night (17:00 to 22:00). Similar results were obtained in another South African study indicating that the majority of advertisements were aired during family viewing times between 17:00 and 19:00 (Mchiza *et al.*, 2013). It is expected that children will also watch TV during family viewing times, thus children are exposed to a larger amount of advertisements that can influence their purchasing and dietary behaviour. A study performed by Boyland & Halford, (2013) also found that children are increasingly watching TV during primetime, in which many adults watch family programmes, thus exposing children to more advertisements.

Research has shown that food marketing is increasing the identification, demand and consumption of the food product (WHO, 2004; WHO, 2010). Although the minority of food advertisements were shown during the time of children's programmes, advertising during child programming time still accounted for almost 10% of all food advertisements. The advertisements were mostly advertising foods either high in fat, with added sugar or high in salt, that are classified as less healthy foods. Only 5% of advertisements during the time slot for children's programmes advertised fast foods and franchises. This is a big concern, as these products make it unlikely that children will rather choose healthy meals when exposed to these advertisements (Mchiza *et al.*, 2013). The increased amount of advertisements of HFSS foods and beverages aimed at children may negatively influence what children may understand as good nutrition, the fondness children may have for specific foods or beverages and may affect them when they are choosing a product to eat (Boyland & Halford, 2013; Cairns *et al.*, 2013; Cassim & Bexiga, 2007; Consumers International, 2005; Folta *et al.*, 2006; Hastings *et al.*, 2003;

WHO, 2003; WHO, 2010; WHO, 2013). Although the researchers in this study did not investigate the effect of the advertisement of HFSS foods on eating behaviour, other researchers indicated that children (five to seven years and nine to 11 years of age) had significantly higher food intakes after exposure to food advertisements (Halford *et al.*, 2004; Halford *et al.*, 2007). TV advertisements do have an influence on the dietary behaviour of children and may influence children to have increased energy intakes that can be associated with an increased risk for NCDs (Halford *et al.*, 2004; Halford *et al.*, 2007). By increasing a less healthy food intake during childhood, the risk for NCDs during childhood is increased when these products are consumed (Cairns *et al.*, 2013; Moodie *et al.*, 2013; WHO, 2003).

According to the **Draft** Guidelines Relating to the Food Labelling and Advertising of Foods (R429 of 29 May 2014), unhealthy foods may not be marketed to children of school-going age and advertisements of unhealthy foods may not be shown on TV between 06:00 in the morning and 21:00 in the evening. These guidelines also state that child actors younger than 18 years, celebrities, sport stars, cartoon characters, animation, competitions, gifts or collectable items may not be used to market unhealthy foods to children (DOH, 2014). The results of this study indicated that South Africa is far from fulfilling the demands in the statements of the **draft** guidelines.

Advertisements of healthy foods

The researchers in this study found that the minority of advertisements advertised healthy foods that included fruits, vegetables, water and milk. No healthy food advertisements were aired during child programming time. Similar results were found in a South African study by Mchiza *et al.* (2013) in which only seven (2%) of their advertisements were advertisements of fruit and vegetables. Dixon *et al.* (2007) also found that healthy foods are not advertised sufficiently during the times airing children's programmes on TV. Findings by another South African study indicated that SABC 1 and 2 were mainly promoting less healthy foods to children and less than 50% of advertisements on healthier food choices (Temple *et al.*, 2008).

Creative strategies used by food marketers

In the current study it was found that food marketers used similar strategies than those indicated in other studies (Mchiza *et al.*, 2013). The use of children, animation, well-known cartoon characters from children's programmes or movies, or celebrities such as sportsmen were strategies used to market food products to children. Most of the advertisements aimed at children were shown during family viewing times as was also found in a study done by Mchiza *et al.* (2013).

The current study found that a fairly large amount of advertisements made use of children to market a specific food product or non-alcoholic beverage. This study also found that most advertisements were aired before and during the festive seasons to market food products in order to increase the selling power of the products advertised. It was also found that one particular fast-food outlet made use of children in almost all of their advertisements. Furthermore, this investigation indicated that the use of children in an advertisement is popular in the food industry to market their products. A previous South African study by Da Fonseca (2010) found that parents in South Africa thought that TV viewing had influences on their children's food choices as children preferred less healthy foods after TV exposure.

It has been found that most food advertisements aimed at children include cartoon characters to create a fun and imaginary world that may be appealing to children (Elliot, 2008; Hastings *et al.*, 2003). Cartoon characters were used to market products such as sweetened milk products, like sweetened yoghurt, followed by sweetened beverages, confectionary that included chocolates, lollipops and ice cream, and sweetened breakfast cereals. These products are either high in fat, sugar and/ or salt. This was confirmed by research done by Elliot (2008) and Hastings *et al.*, (2003) that found that most advertisements aimed at children advertised predominantly HFSS foods. In the current study, advertisements of food products using cartoon characters portrayed feelings of pleasure, action, adventure, fantasy and fun. Research suggests that advertisements that focus on the idea of good taste, humour, action, adventure, fantasy and fun are often used to increase the desire for the product in children (Cairns *et al.*, 2013; Elliot, 2008; Hastings *et al.*, 2003). The feelings of fun, adventure, action and fantasy further increase the product choice and purchasing behaviour of children (Boyland & Halford, 2013). The cartoon characters found to be used in the current study included Spongebob Squarepants®. Children could collect up to six Spongebob Squarepants® toys with their meal at a specific food restaurant. During this promotion the Spongebob Squarepants® movie was launched in cinemas. This could increase the selling of the specific meals amongst children as children associated the meal with the movie (Hastings *et al.*, 2003). The marketing strategy of collecting a toy could also increase the selling of the product as children might want to collect all toys. Another product used Spiderman® in their advertisements and provided a free Spiderman® lunchbox when two of these products were purchased. This could also increase the selling of the specific product as children might want the lunchbox, forcing parents to buy two of the products.

The use of cartoon characters in advertisements increases the recognition of brands shown in the advertisements (Connor, 2006). The intension of branding is to develop strong emotional relationships with the advertised products' name or logo (Connor, 2006). It has also been shown that children would rather choose products of which they could recognise the cartoon

characters or logos associated with the food product (Batada & Borzekowski, 2008). These foods are usually found to be high in either fat, sugar or salt (Hastings *et al.*, 2009). The same results were found in a study done by Mchiza *et al.* (2013) in which well-known cartoon characters from children's programmes or movies were also used to market less healthy food products and non-alcoholic beverages.

In the current study, the use of celebrities was another creative technique used to market a food product to children. A study done by Ülger (2009) showed that celebrities shown on TV advertisements are trusted and respected by children and adults. It has also been suggested that celebrities seen in advertisements may increase the selling power of the product advertised as celebrities extend their fame to the product advertised and attract the attention of consumers (Erdogen, 1999). Thus, the use of celebrities in advertisements is influencing children to desire these food products that in the end increase the selling of these products.

According to the SABC and e.TV, 10minutes to a maximum of 12 minutes per hour are allowed for advertising (SABC, 2004). During the recordings it was observed that they do not always comply with the minutes of advertising per one hour. This exposes children to even longer hours of advertising.

Breakfast cereal packaging

Techniques of marketing on breakfast cereal packaging

Research has shown that limited information is available on the packaging of foods in supermarkets aimed at children (Elliot, 2008). Food packaging is usually attracting children's attention when different marketing techniques are used that are appealing to children and can increase brand and product recognition. Creative and visual techniques may include the use of: bold graphics; animation; images of animals, toys, balloons, cars, boats etc.; bright colours; language intended for children; children on the packaging; use of celebrities; cartoon characters and brand-owned and licensed characters; inclusion of free gifts or toys; inclusion of competitions and games inside or on the packaging (Consumers International, 2012, Elliot, 2008). In the current study it was clear that breakfast cereal packaging used either one or a combination of these creative techniques to market breakfast cereals to children.

The use of cartoon characters and branding on breakfast cereal packaging

The use of cartoon characters on packaging has a big influence on the creation of a sense of loyalty towards the product, creating brand awareness and increased selling of the product (Batada & Borzekowski, 2008; Connor, 2006). In the study conducted by the authors, cartoon characters that are well-known in children's programmes or movies were also used. Research

has shown that cartoon characters well-known to children are frequently also accompanied by product tie-ins that increase the selling of the specific meal (Boyland & Halford, 2013); findings that were confirmed in the current study. Research has also shown that cartoon characters and branding logos that appear on food packaging influence children's perspective of the choice, taste and intake of food products (Lapierre *et al.*, 2011; Roberto *et al.*, 2010; WHO, 2013). Loyalty to different brands is further encouraged through competitions, promotions and children's clubs (Hastings *et al.*, 2003). In the current study, competitions were also included on the breakfast cereal packaging to increase the loyalty towards the brand of the breakfast cereal.

Placement of breakfast cereal products

With regard to the placement of breakfast cereal products, research has shown that breakfast cereal products that are marketed to children are placed on lower shelves in supermarkets than cereal products marketed to adults (Musicus *et al.*, 2014). Musicus and colleagues (2014) also found that cartoon characters on the breakfast cereal packaging were looking downwards, while characters on adult breakfast cereal products looked forward. This was also found in the study conducted by the authors. Furthermore, it was suggested that the cartoon characters on children's breakfast cereal packaging are making "eye contact" with children to make a connection and create positive feelings towards the brand and product, thus increasing brand loyalty (Musicus *et al.*, 2014). This increases the demand for the product, therefore marketers reached their goals by selling their food products (Cairns *et al.*, 2013).

Although advertisements of alcoholic beverages were not included in the current study, it was observed that a lot of advertisements advertised alcohol. These advertisements were not aimed at children in any way, but children were exposed to such a high amount of these advertisements that it may pose a risk for what children may understand as the norm that might influence them to use alcohol from an earlier stage. Therefore, it could be helpful to do further research on the advertising of alcoholic beverages to improve the managing of the advertising of alcohol.

We did not assess the nutritional value of any of the products using a nutrient profiling model developed to regulate advertising to children. A study assessing 58 ready-to-eat breakfast cereal advertised in Germany to children, only 2% of the products 'pass' the UK Ofcom model developed to regulated advertising to children. In the same study, the authors reported that four of the 12 similar type of cereal available from Norway 'pass' the UK Ofcom model (Maschkowski *et al.*, 2014) showing the reformulation of products to be more healthier is possible.

In the current study, only two mediums of advertising were included, namely TV and breakfast cereal packaging. Newer forms of advertising using newer media are new to advertising and have not been investigated in the current study or other studies (Boyland& Halford, 2013).

Conclusions

In conclusion, the study conducted by the authors provided evidence that South African children are exposed to large volumes of advertisements about HFSS foods that use different techniques to ensure brand loyalty. Children are influenced by these advertisements and they have a negative influence on eating behaviour and food knowledge (Robinson *et al.*, 2007; WHO, 2013). As marketing has an enormous influence on increasing the desire and consumption of products advertised (Consumers International, 2012; WHO, 2010), it may affect the dietary choices made by children (Cairns *et al.*, 2013; Consumers International, 2012; Hastings *et al.*, 2003; WHO, 2013). Research has shown that TV advertising does have an influence on the healthy food choices a child would make. It was also found that parents influences on children's choices of healthy food products decreased dramatically when children are exposed to unhealthy food advertisements. Therefore, the influence of TV viewing and exposure to less healthy food advertisements and the influence thereof on obesity, must not be overlooked (Ferguson *et al.*, 2012). Children play an important role as consumer, and to increase the amount and frequency of healthier food advertisements aimed at children, exposure to and knowledge of healthier foods may be needed for children to have better control over the consumption of less healthy foods (Dixon *et al.*, 2007; Strachan & Pavier-Latour, 2006; WHO, 2004).

Internet access is increasing and thus marketing on the internet has grown. Most companies also possess company websites that can be visited and are specifically designed for children. Children can be interactive and spend long times on these websites, thus they have prolonged exposure to the specific food products of different companies (Consumers International, 2012). When considering newer media in advertising food products to children, the effect it can have on the exposure to, and consumption and purchasing behaviour of food products may be very important. As children are spending more time online and are considered to be passionate users of newer media, the marketing on newer media will also contribute to dietary preferences, brand recognition and loyalty towards the brand and specific foods from companies (Boyland& Halford, 2013).

Although advertising is only one of many contributing factors to childhood obesity, responsible advertising to children, the promotion of healthier food choices and education to children and parents, may be the first step in creating a healthier South African environment in which children

can counter overweight and obesity. The results of the current study thus support the decision of the National Department of Health (DOH, 2014) that advertising to children should be regulated as suggested by the World Health Organisation (WHO, 2010) as one of the first steps to prevent and manage childhood overweight and obesity.

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CHAPTER 4
GENERAL DISCUSSION, CONCLUSIONS AND
RECOMMENDATIONS

CHAPTER 4 GENERAL DISCUSSION, CONCLUSIONS AND RECOMMENDATIONS

4.1 Introduction

This final chapter provides the main findings, conclusions and recommendations of the research project. The aim and objectives of the study are described with regard to the main findings of the research project. Conclusions and recommendations were made from the findings and from literature. Lastly, limitations were identified and recommendations for future research were made.

Research aim

The purpose of this research project was to describe the usage of branding and cartoon characters in the marketing of food and non-alcoholic beverages to children aged 3 to 18 years in South Africa.

Research objectives

The objectives for the research project were:

- To determine the frequency and type of food products advertised to children on the South African free-to-air television (TV) channels;
- To describe the use of branding and cartoon characters in advertisements aimed at children on South African free-to-air TV channels.
- To determine the number of breakfast cereal products marketed to children in the three main supermarkets in Potchefstroom, North West, South Africa;
- To describe the branding and type of cartoon characters used on breakfast cereal packaging in the three main supermarkets in Potchefstroom, North West, South Africa;

4.2 Frequency and type of advertisements aimed at children

A total amount of 1030 food and non-alcoholic beverage advertisements were shown during the four months of recordings of which 487 advertisements were aimed at children. When looking at the type of advertisements, it could be seen that the food industry in South Africa pays a lot of attention to the marketing of less healthy foods to children that include sweets, chocolates, snacks and chips, sweetened breakfast cereals, sugared beverages, and sweetened milk and dairy products. Research has shown that TV is frequently advertising less healthy foods high in fat, sugar, and/ or salt (HFSS) that can increase the intake of these unhealthy food and beverages by children (Mchiza *et al.*, 2013; WHO, 2013). It was also found that the minority of

advertisements advertised healthy foods that included only fruit and vegetables, unsweetened milk products, and water. The findings were similar to the findings from previous South African studies (Temple *et al.*, 2008; Mchiza *et al.*, 2013). Further, research also indicates that there is a positive correlation between the advertisements of HFSS foods (Andreyeva *et al.*, 2011; Cairns *et al.*, 2013; Chapman *et al.*, 2006; Folta *et al.*, 2006) and the consumption of HFSS foods when children are exposed to HFSS food advertisements (Andreyeva *et al.*, 2011; Cairns *et al.*, 2013; Folta *et al.*, 2006). The current study also found that most food advertisements were shown during family viewing times (12:00 to 14:00 and 17:00 to 22:00) in which children are expected to watch TV, thus exposing children to even more advertisements (Boyland & Halford, 2013; Mchiza *et al.*, 2013).

4.3 The use of cartoon characters and branding in advertisements aimed at children

In the current study it was found that food marketers used marketing strategies similar to those described in previous studies that included the use of children, well-known cartoon characters from children's programmes or brand-owned, and celebrities such as sportsmen (Mchiza *et al.*, 2013). It was also found that advertisements using cartoon characters created a fun and imaginary world, filled with fun, action, fantasy and adventure, findings that were supported by the findings of Elliot (2008) and Hastings *et al.* (2003). In advertisements using cartoon characters to market food products, foods such as sweetened milk and dairy products, sweetened beverages, confectionary, and sweetened breakfast cereals were advertised. These products are either high in fat, sugar and/ or salt. These observations were supported by the research done by Elliot (2008) and Hastings *et al.* (2003). Research suggests that the use of animation in advertisements, increase brand recognition and loyalty (Connor, 2006) and that children would rather choose food brands in which they recognise cartoon characters and logos that can be associated with the food product (Batada & Borzekowski, 2008).

4.4 Number of breakfast cereal products aimed at children

The authors of this study found that only a few breakfast cereal products were aimed at children when compared to the amount of adult breakfast cereal products. As there is no available information on the marketing of breakfast cereals aimed at children in South Africa, it was not possible to compare the results with previous studies. It was interesting to find that breakfast cereal products marketed to children were placed on the lower shelves in supermarkets this finding was also supported by previous research that found that breakfast cereals marketed to children were placed on lower levels of the shelves in supermarkets to be in close reach of children (Musicus *et al.*, 2014).

4.5 The use of cartoon characters and branding on breakfast cereal packaging aimed at children

It was found that breakfast cereal packaging aimed at children used different marketing techniques that included cartoon characters, bold graphics, children featuring on the packaging, use of celebrities, inclusion of free gifts, competitions and games that are appealing to children, that were also supported by previous research (Consumers International, 2012, Elliot, 2008). Using cartoon characters on the packaging of food products have been shown to influence the loyalty towards a product, creating brand awareness, and increasing selling of the product (Batada & Borzekowski, 2008; Connor, 2006) and it also influences children's perspective of choice, taste and intake of food products (Lapierre *et al.*, 2011; Roberto *et al.*, 2010; WHO, 2013). In the current study it was found that well-known cartoon characters from children's programmes were used. Research has shown that well-known cartoon characters from children's programmes have been found to increase the selling of products (Boyland & Halford, 2013). Interestingly, it was also found that cartoon characters on children's breakfast cereal packaging looked downwards as to make "eye contact" with children; this finding was also supported by previous research indicating that cartoon characters on breakfast cereal products that make eye contact, are intended to make a connection and create positive feelings and increase brand loyalty (Musicus *et al.*, 2014).

4.6 General conclusions and recommendations originating from the study

- i. The use of branding and cartoons either in TV advertisements or on breakfast cereal packaging aimed at children are popular methods used by marketers to advertise food products to children. In the current study it was found that marketers mainly marketed less healthy foods to children. As cartoons increase brand loyalty and increase the requests for the specific product, the marketing of less healthy foods should be regulated in the marketing aimed at children. Currently there is no legislation in South Africa that formally binds companies to follow regulations in the marketing of food products to children. Therefore, the time has come to develop policies for the marketing of foods and beverages to children to protect children against the harmful effects of advertising.
- ii. The minority of food advertisements advertised healthy foods and beverages. If the food industry increases advertisements of healthy foods, these advertisements can exert a possible positive influence on children's dietary behaviour.
- iii. The researchers of this study found that a high amount of advertising of foods is aimed at children. Even though only TV advertisements and breakfast cereal packaging were

investigated and newer media excluded from the methodology, it was evident that children are the main focus of the advertising of foods. The exclusion of newer media does however not take the importance of the current study away, as there are limited similar studies available in South Africa. Even when considering that only two mediums of advertising to children were included, the results indicated that a large amount of the food marketing aimed at children marketed less healthy foods. It must also be remembered that the inclusion of a larger amount of different media of advertising to children could possibly have given an even bigger picture of child directed marketing by the food industry.

- iv. Although advertising cannot be seen as the only contributing factor to overweight and obesity in children, it is one of many contributing factors leading to overweight in children. Therefore, responsible advertising is an important concept in advertising aimed at children. Companies should focus on healthier food advertisements and responsible advertising should focus on the prevention of advertisements for less healthy foods aimed at children in order to promote childhood health.

4.7 Limitations of the research project

- i. The first major limitation of the current observational study is that the findings are only representative of the information at the specific time of data collection and can thus change over time. The amount of breakfast cereal products on the shelves was only representative of the products available at the specific time of data collection. Furthermore, the advertisements on TV were representative of current marketing statistics at the time of recordings.
- ii. In the current study, supermarkets were only visited once to accumulate information from breakfast cereal packaging. It may have been that the designs could have changed and new products could have been developed. The reason why supermarkets were only visited once was to accumulate information on the packaging at the specific time to provide baseline information. Changes in the design of food packaging were not part of the methodology.
- iii. A variety of methods exist for the marketing directed at children. In the current study only marketing via TV and breakfast cereal packaging was included in the methodology. As newer media become more popular amongst children, it could be important to also include other methods in future studies. This limitation however, does not invalidate the

importance of the current study, as results would have even been more comprehensive with the inclusion of other marketing techniques directed at children.

- iv. Only the four free-to-air TV channels were included for data extraction. These channels were included as they are the TV channels mostly watched by South Africans and because most people in South Africa have access to these channels (Mchiza *et al.*, 2013; SABC, 2011). It is recommended to also include other TV channels in future research as families may watch TV channels not included in the current study.
- v. Older children may also be interested in other products such as slimming products, which were not included in the current study.

4.8 Recommendations for future research

- i. Newer forms of advertising using newer media have not been investigated extensively. As children are spending more time online and are important users of newer media, it should be considered to also have a possible influence on dietary preferences, brand recognition and loyalty towards specific foods from companies. Newer media should therefore be included in future research to identify the influence thereof on advertising and the effect thereof on children's dietary behaviours.
- ii. As only the free-to-air TV channels were included for data extraction, it is also important to consider other TV channels that families could also be expected to watch.
- iii. Although alcoholic beverages were not part of the methodology, a lot of the advertising recorded advertised alcohol. Although these advertisements are shown during family viewing times, children are exposed to these advertisements when watching TV with their families. Therefore, further research on the advertising of alcoholic beverages needs to be done to understand the extent and effect of advertisements for alcoholic beverages on children.

4.9 Closing statement

In conclusion, the researcher can declare that the aim and objectives were met and baseline information was obtained for policy development in the marketing of food and non-alcoholic beverages to children.

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ANNEXURES

ANNEXURE A

TABLE FOR THE ACCUMULATION OF INFORMATION ON FOOD ADVERTISEMENTS AIMED AT CHILDREN ON FREE-TO-AIR TV CHANNELS IN SOUTH AFRICA

Month of recording		Weekday								
TV channel:		SABC 1		SABC 2		SABC 3		e.TV		
Time		Ads description	Company	Children used in ads	Ads shown in children programming time	Food product advertised	Food category (coding)	Use of animation or cartoon characters in ads	Time of ads	Total time of ads/ hour
From	To			Y/N	Y/N					

Ads/ ads/ad: Advertisements; SABC: South African Broadcasting Corporation; Y: yes; N: No; TV: television

ANNEXURE B

TABLE FOR THE ACCUMULATION OF INFORMATION ON BREAKFAST CEREAL PACKAGING AIMED AT CHILDREN IN THE THREE BIGGEST SUPERMARKETS IN POTHEFSTROOF, NORTH WEST, SOUTH AFRICA

		Supermarket							
		Shoprite			Checkers			Pick'nPay	
Total amount of cereals on shelves									
Total cereals marketed to children									
Total adult cereals									
Cereals aimed at children in different supermarkets				Marketing Techniques					
Type of cereal	Shoprite	Checkers	Pick'nPay	Use of children	Use of animation/ cartoon characters	Games	Collectable Items	Competitions	Bright colours