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The marketing of sugary food products to children on television, in South Africa

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The marketing of sugary food products to children on television,

in South Africa.

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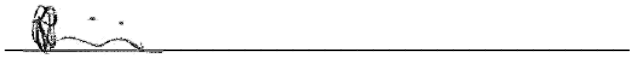
A thesis submitted to the Faculty of Health Sciences, University of the Witwatersrand, Johannesburg, in partial fulfilment of the requirements for the degree of Master of Public Health.

Johannesburg 2020

Declaration

I hereby declare that this submission is my own work, both in concept and execution, and that to the best of my knowledge and belief it contains no material written by another person nor material that has been accepted for an award of any other degree or diploma of the university or other institute of higher learning, except where due acknowledgement has been made in the text.



(Signature of candidate)

29th day of March 2021 in Lonehill, Johannesburg

Dedication

First, I would like to dedicate this research to myself. For my hard work and my resilience throughout the whole research process but particularly towards the final push of it. I would like to congratulate myself for my bravery and strength and to reassure myself that there is surely nothing I cannot achieve, regardless of the obstacles I may face.

I would like to also dedicate this to my dear husband, Kudakwashe Kuzviwanza. My constant supporter, caregiver, cheerleader, my rock and my best friend. You have shown up for me time and time again and without your support and belief in me this would not be possible. I love you and I am eternally grateful for your life and love.

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Above all I thank God, for my life, for the continuous blessings I am surrounded by. I am grateful for the opportunity to continue to excel in a field that I love, and for the clarity of purpose this journey has given me. I pray that I will continue to receive your blessings and that this be just the beginning of a journey towards helping other women and children in my quest to provide equitable health opportunities for those who are in need of them.

Abstract

Consumption of unhealthy diets by children has contributed to the high prevalence of childhood obesity in South Africa. Exposure to advertising that promotes consumption of sugary food products on TV plays a role in children's dietary choices. Following industry pledges made relating to the reduction of advertising of unhealthy foods directed at children, this study aimed to describe the frequency of advertisements for sugary food products and the advertising techniques being used to appeal to children on South African TV channels, during children's and family viewing times, over a two-week period. Results from the study revealed that 13% of all advertisements aired were for food products, with various techniques being used to appeal to children. As industry self-regulation continues to be ineffective it is important that government legislates to stop children's exposure to sugary food products with additional specific limitations on the use of persuasive techniques when advertising to children.

150 words

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List of Abbreviations

CFBAI	Children's Food and Beverage Advertising Initiative
CGCSA	Consumer Goods Council of South Africa
CRD	Chronic Respiratory Disease
CVD	Cardiovascular Disease
DSTV	Digital Satellite Television
EU	European Union
HREC	Human Research Ethics Committee
LMICs	Low-and-Middle Income Countries
NCD	Non-Communicable Diseases
PDIS	The Provincial Dietary Intake Study
PVR	Persona Video Recorder
SABC	South African Broadcasting Cooperation
SES	Socio-economic status
TV	Television
UK	United Kingdom
USA	United States of America
WHO	World Health Organization

1 INTRODUCTION

1.1 Background

Non-Communicable Diseases (NCDs) have become a leading cause of death globally over the past decade, with diabetes, cardiovascular disease (CVDs), chronic respiratory diseases (CRDs) and cancers accounting for most of the burden of NCDs (Myers, Fig, Tugendhaft, Mandle, et al., 2017). The World Health Organisation (WHO), reports that in 2012 NCDs accounted for 68% of global deaths, and of these about 28 million occurred in Low and Middle Income Countries (LMICs) (World Health Organization, 2015). In South Africa, NCDs accounted for 51% of deaths recorded in 2016 (Skolnik, 2016), with 5% of the population being reported to be diabetic and about 10% being prediabetic (Fischer, Chadyiwa, Tshuma, & Nkosi, 2019).

There are several risk factors contributing to the rise in NCD mortality, and among these are diets characterized by high intake of fat, salt, and sugars (Nasreddine, Taktouk, Dabbous, & Melki, 2019) which contribute to increasing obesity and its associated diseases (Baleta & Mitchell, 2014). In 2013, South Africa ranked third among the most obese nations in Africa (Myers, Fig, Tugendhaft, Mandle, et al., 2017), and in 2016 65,4% of the female and 40,5% of the male population in South Africa were reported to be overweight (The World Bank, n.d.).

A growing concern, with regards to obesity in South Africa, is the increase in prevalence of children who are regarded as overweight or obese, which was reported to be 18,2% in 2016 (Wicks, Wright, & Wentzel-Viljoen, 2017). Childhood obesity does not only negatively affect a child's quality of life but has also been associated with poor health outcomes as well negative economic consequences for the child and society, that may manifest well into adulthood (Wicks et al., 2017). Although the prevalence and incidence of childhood obesity has stabilized in high income countries, the rates continue to increase in countries like South Africa mainly due to the globalization of food systems resulting in a shift towards poor dietary patterns (Kelly et al., 2019a) with an increase in uptake of packaged foods, street and fast foods and sugary food products (Igumbor et al., 2012) which include sugar-sweetened beverages, fruit juices, biscuits, cakes, chocolates and sweets (Wang, Zhai, Zhang, & Popkin, 2012).

Of concern is the increase in consumption of diets high in sugar in South Africa, which are being adopted by children. The average South African is reported to consume about 23,5

teaspoons or 99g of sugar per day, which is four times higher than the WHO recommended intake (World Health Organization, 2015), resulting in South Africa being ranked as number 8 worldwide for high sugar consumption (Myers et al., 2017). For example, it is reported that carbonated drinks, which contain on average 10 teaspoons of sugar, are one of the food products that are heavily consumed by children in South Africa (Igumbor et al., 2012).

Several factors, such as the types of food children are exposed to on a daily basis, have an influence on children's dietary choices. One of particular concern is the marketing of sugary food products to children on TV (Zimmerman & Bell, 2010), as exposure to such advertisements increases the likelihood of such foods being prominent in children's diet (Nasreddine et al., 2019) making them more susceptible to obesity.

1.2 Literature Review

1.2.1 Childhood obesity and sugar consumption

The WHO's guidelines on the intake of sugar, as stated in their official Guidelines for sugar intake for adults and children (World Health Organization, 2015) particularly places emphasis on monitoring the consumption of foods that have free sugars, which include monosaccharides and disaccharides, added to them. They recommended that an individual's daily free sugars intake should not exceed 10% of their total energy intake and should ideally be 5% of the total energy intake, which is approximately equivalent to six teaspoons or 25g of sugar (Myers, Fig, Tugendhaft, Mandle, et al., 2017).

In South Africa, a 1999 National Food Consumption Survey reported high sugar consumption for children between the ages of 1-9 years, with the most predominant sources of added sugar in the diets coming from food items such as table sugar, cordials that had been sweetened, sweets, biscuits, carbonated drinks, and children's breakfast cereals (Labadarios et al., 1999). The Provincial Dietary Intake Study (PDIS), that aimed to follow up from the 1999 survey and identify nutrient intake and dietary patterns of children between the ages of 0-10 years of age conducted in the Western Cape and Gauteng provinces in South Africa, reported similar findings. The study found that approximately 50% of children in both provinces had an intake of free sugars above the WHO recommended 10% daily consumption. Similar to the 1999 Food Consumption Survey, this study found that the predominant sources of free sugar in children's

diets were from sugar sweetened beverages, granulated sugar, candies and cordials (Steyn, Nel, Malczyk, Drummond, & Senekal, 2020).

Several studies, including a review by (Malik, Schulze, & Hu, 2006), have shown the association between the consumption of sugary food products, particularly sugary beverages, and weight gain in children. Furthermore, in an analysis of the dietary patterns of a cohort of children in New Zealand, results concluded that consumption of diets high in sugars was associated with greater risk of adiposity and obesity in children (Flynn et al., 2020). Children are exposed daily to multiple factors that influence their food consumption and dietary choices. Exposure can take place in different environments such as in or around schools (Godin, Chacón, Barnoya, & Leatherdale, 2017) as well as in more social settings such as entertainment platforms in the media. Taking this into account, childhood overconsumption of unhealthy foods, particularly sugary foods, should be viewed as a complex issue, that has both social and environmental influences (Shin, 2013)requires careful investigation.

1.2.2 Media influence

Although several factors play a role in children's dietary choices, one factor that has received increasing attention is food marketing and advertising to children (Nasreddine et al., 2019). The use of media to market foods to children has been proven to contribute to children's diets and the types of foods children prefer, which may increase the risk of childhood obesity.

Several modes of persuasive marketing and advertising techniques directed to children exist. These include the use of premium offers, (Longacre et al., 2016) promotional characters (Kelly, Hattersley, King, & Flood, 2008), emotional appeals and production effects (Vilaro, Barnett, Watson, Merten, & Mathews, 2017). Examples of these include the use of familiar characters such as cartoons and animated characters (Castonguay, Kunkel, Wright, & Duff, 2013), as well as the use of music, bright colours and shapes in the marketing material (Scully et al., 2015). These techniques work to enhance brand recognition and formation of para-social relationships with animated characters(Castonguay et al., 2013) in children as young as 2 years old (McHiza, Temple, Steyn, Abrahams, & Clayford, 2013). The techniques are also visually appealing and stimulating to children as the aesthetic features associated with the food being marketed can be seen to represent play and fun (Scully et al., 2015).

The use of persuasive techniques has been documented to be higher in advertisements for unhealthy food than for those for healthy food items, with food advertisements aired during

children's viewing times having more persuasive techniques than food advertisements intended for older audiences (Vilaro et al., 2017). The use of such techniques when advertising sugary food products may increase the child's desire for products, may affect negotiation and purchasing requests to parents when children come into contact with the products (E. J. Boyland & Halford, 2013), also known as *pester power*, and may also have an effect on the child as a future consumer (MediaSmarts, 2020).

Cognitive development studies have shown that younger children, particularly those under the age of 12, have lower cognitive defences, therefore are more susceptible to television marketing in general (Scully et al., 2015). In a report on the impact of media on children in South Africa, researchers at the Youth Research Unit at UNISA emphasize the importance of understanding how marketing and advertising campaigns attempt to expose children to certain media in relation to their level of cognitive development (UNISA, 2015), as children at this age often lack the ability to effectively recognize the intentionally persuasive intent and influential effects of advertisements (Landwehr & Hartmann, 2020). As their knowledge about products and brands that are being advertised develops, children begin to develop strategies for purchase requests and negotiations to caregivers (Scully et al., 2015), making it increasingly important to monitor and regulate the types of food advertisements they are exposed to, particularly on TV.

1.2.3 Television

Although many channels of media currently exist, the majority of marketing of foods to children occurs on television (TV), as research has shown that television is the form of media that children aged 3-11 consume most frequently (Landwehr & Hartmann, 2020).

Evidence has suggested that there is an association between the amount of time spent watching TV and the consumption of an energy dense diet comprised of sugary food products, due to exposure to food advertisements and marketing (Zimmerman & Bell, 2010). Watching an one hour or more of television a day has been shown to increase a child's likelihood of consuming unhealthy food (Landwehr & Hartmann, 2020) as several studies have documented that the majority of advertisements shown on TV during children's viewing times are for food advertisements (Ok, Ercan, & Kaya, 2016).

In a study that aimed to investigate the association between TV food advertising and the prevalence of childhood obesity in thirteen research groups across 8 countries in Europe and

the Americas, researchers reported that up to 29% of advertisements shown during viewing time allocated to children's programs were food advertisements, and that of these up to 87% were of unhealthy foods (Goris, Petersen, Stamatakis, & Lennert Veerman, 2009). In another study in Ireland, over 90 % of food advertisements that were aired during children's viewing times included advertisements for sweet and sugary snacks (Scully et al., 2015). In a content analysis of TV advertising in South Africa, researchers report the common use of popular cartoon characters to endorse sugary foods such as sweets, sugar-added cereals as well as sweet carbonated beverages to children (McHiza et al., 2013)

1.2.4 Food Advertising Policy and Legislation

Several guidelines and policies exist globally with regards to the marketing of food to children. The World Health Organization (WHO) endorsed Resolution WHA 63.14 in 2010, which aimed to guide member states in their efforts in the development of policy that regulated marketing activities of unhealthy food products to children, such as those high in fat, salt and free sugars, with the hope of reducing consumption of those food products (World Health Organization, 2010).

Furthermore, the WHO's published Commission On Ending Childhood Obesity (World Health Organization, 2017), as well as its Global Action Plan For Prevention And Control of NCDs 2013-2020 (World Health Organization, 2015), identifies guidelines for daily sugar consumption and makes an emphasis on the need for legislation aimed at reducing the impact of exposure to unhealthy foods as a result of food industry advertising targeted at children, as indicators to raise awareness around childhood obesity and reduce premature mortality from NCDs.

Governments and industry regulations in countries such as the United States of America (USA) and the United Kingdom (UK), have made an effort to limit the amount of food advertising on TV during children's programs (E. Boyland & Harris, 2017). Countries like Chile for example, have strict laws that restrict all food advertising targeting children below the age of 14 via all media channels (Coates, Hardman, Halford, Christiansen, & Boyland, 2019).

In South Africa, the Department of Health Directorate on Food Control has published several regulations, with regards to advertising of different food products. An example of such a regulation is the *Draft Regulation Relating to The Labelling and Advertising of Food (R429) of May 2014* (Department of Health, 2014), which has a section that addresses

marketing/advertising of food to children. The draft states that "No food or non-alcoholic beverage shall be marketed to children unless it complies with all the criteria in Guideline 14." (Department of Health, 2014). Guideline 14 essentially states that no unhealthy food may be advertised on radio or TV between the hours of 06:00 – 21:00, irrespective of whether that advertising is published outside of children's programmes (Department of Health, 2014). However, as it is still a draft to this day, it is not officially a regulation under South African law, and therefore not binding.

Recently, the South African government, through the Department of Communications published a White Paper on Audio and Audiovisual Content Services Policy Framework. In section 5.4.2 the document touches on advertising standards and includes a sub-section that speaks to the protection of children in relation to the content of advertisements. The draft proposes that the regulator must make regulations "in respect of scheduling" on "the advertising of alcoholic beverages and harmful foods that are high in salt, sugars, fat, saturated fats or trans-fatty acids or that otherwise do not fit national or international nutritional guidelines" (Government Gazette, 2020). Although the extent and mechanism of regulation on the broadcaster is not explicitly specified, it is encouraging that the effects of advertising on children are being acknowledged in the proposed legislation.

Besides current efforts underway by the government and department of health to control the advertising of food products to children, organizations in the food industry have also embarked on self-regulation efforts with regards to this issue. The Consumer Goods Council of South Africa (CGCSA), an organization comprising of several companies in the food industry such as the Coca-Cola Company and Nestle for example, made a pledge in 2008, to not market unhealthy food to children below the age of 12 years old on TV (CGCSA, 2009). However, there is concern of the effectiveness of such strategies as several evaluations across the world have demonstrated limited reductions in the amount and frequency of sugary food advertisements targeting children following implementation of food industry self-regulation (E. Boyland & Harris, 2017), as it is not actual legislation, therefore not binding.

In a review of industry self-regulatory initiatives with regards to the restriction of child-targeting food and beverage advertising, (Landwehr & Hartmann, 2020) report on a number of studies that highlight how industry self-regulation has had low impact in reducing advertisements of unhealthy food targeted at children. The same trend is seen in South Africa, as there is reported evidence of continued advertising of unhealthy foods to children on national

TV channels regardless of the pledges made by companies in the food industry (McHiza, Temple, Steyn, Abrahams, & Clayford, 2013).

It is evident that there is a growing concern of the effects of the kind of food products that children are exposed to on TV, and the impact it has on unhealthy dietary choices and essentially childhood obesity. Though efforts by industry to self-regulate are a step in the right direction, they are not fully effective strategies in controlling children's exposure to sugary foods advertising. Following the making of such pledges by companies in the food industry in South Africa, as well as formation of drafts such as the R429 (Department of Health, 2014), and the White Paper on Audio and Audiovisual Content Services Policy Framework, it is important to understand the current marketing/advertising trends and techniques being used to advertise such products to children with the aim being to limit any form of persuasive marketing techniques directed at children.

1.3 Rationale

With the increase in prevalence of NCDs in South Africa, it is important to address the several risk factors associated with these diseases (Myers, Fig, Tugendhaft, & Mandle, 2017). Dietary choices in particular, play a large role in the increase of obesity and its related consequences. The sugar consumption rates of an average South African, of 99g per day, are of concern, and are believed to have an association with weight gain and increased risk of NCD mortality (Malik et al., 2006). With the rise in the prevalence of obesity, particularly childhood obesity, it is important to monitor any influencers to children's dietary choices food preferences, purchasing behaviour and in particular how certain unhealthy food products are marketed to children on television.

Following pledges such as those made by the South African Consumer Goods Council and the Coca-Cola company relating to marketing of sugary foods and beverages to children (CGCSA, 2009), very few studies have investigated the current marketing techniques being used to advertise such foods to children. Evidence exists suggesting that industry self-regulation is not as effective in bringing about reduction in advertising (E. Boyland & Harris, 2017). It is therefore important to get a view of the marketing and advertising techniques currently being used. This study aims to explore the frequency of and mechanism being used to market sugary foods to children on South African television channels.

1.4 Research question, Aim and Objectives

1.4.1 Research question

How are sugary food products marketed to children on TV in South Africa?

1.4.2 Study Aim

The study aims to investigate the advertising landscape of sugary food products during children's television viewing times in South Africa.

1.4.3 Objectives

1. To describe the frequency of advertisements for sugary foods shown on television in South Africa during the time allocated to children's programs in the month of October 2019
2. To describe the frequency of advertisements for sugary foods shown on television in South Africa during the time allocated to family programs in the month of October 2019
3. To describe the advertising mechanisms, techniques and characteristics being used to advertise sugary foods to children on TV in South Africa

2. METHODS

2.1 Study design

The study design was a cross-sectional mixed methods design. Both quantitative and qualitative methods were used to address the different objectives of this study. Quantitative methods were used to address the first two objectives which dealt with the number of sugary foods advertisements shown on South African TV channels during child and family viewing times. Qualitative methods were used to address the third objective with regards to the characteristics and mechanisms being used to advertise sugary food products to children on South African TV channels.

2.1.2 Study setting

The study setting was two SABC free to air television channels in South Africa.

2.1.3 Study population

The study population was all the advertisements that were shown on the selected free to air South African TV channels during children's (15:00-17:00) and family (17:00-19:00) viewing times in the month of October 2019.

2.1.4 Sample

Purposive sampling was used to select the channels that were included in this study, which are local (SABC) free to air channels, SABC 1 and 2. In South Africa it is reported that 82% of households own a television set (STATS SA, 2017), and watch TV regularly. The South African Broadcasting Cooperation (SABC), has three broadcasting stations, namely SABC 1, 2 and 3 which are broadcasted freely on air, that is, no subscription or fee is required in order to access these stations (Shobiye, Mulliah, & Rugbeer, 2018). SABC 1 and 2 which are said to represent the youth as well as family and culture respectively, (SABC, 2018) mainly broadcast their programmes in a range of languages including as isiZulu, isiXhosa, TshiVhenda, TshiTswana, Afrikaans and English, while SABC3 transmits it's programmes mostly in English (Shobiye et al., 2018). As of the 2017/2018 financial year, SABC reported attracting over 28 million South African viewers a month, with SABC 1 and 2's broadcast reported to be covering 91,2% and 92,5% of the population, while SABC 3 covers 82,1% (SABC, 2018). On these channels, the time between 15h00 – 17h00 is primarily dedicated to children's programmes such as cartoons and educational shows, while the time between 17h00-19h00 is primarily dedicated to programmes such as talk shows and family friendly dramas (McHiza et al., 2013). Children are reported to view TV during both times allocated primarily for children's programs as well as during programming dedicated to family programmes. It is therefore important to consider both these viewing times when investigating the marketing of sugary foods to children on TV, and so these two timeslots were selected.

2.2 Data collection

Data was collected by recording viewing on the two channels SABC1 and SABC2 during the times 15:00- 19:00. Recording was done by recording programming on one channel per week. In the first week of October I recorded programming between 15:00-19:00 on SABC 1, and in the second week recorded programming between 15:00-19:00 on SABC 2. Therefore, the recordings were for four hours a day, during weekdays (Monday to Friday) for a period of two weeks. It was estimated that on average, there are at least six commercial breaks during one

hour of viewing (McHiza et al., 2013). This would have given at least 120 advertisements per channel per week, and approximately 240 advertisements at a minimum during the two-week period for analysis.

2.2.1 Measurement

For each advertisement shown during the selected timeslots, the following information was recorded:

- Date – The date of the advertisement
- Channel – whether SABC 1 or 2
- Timeslot- either between 15:00-17:00 or 17:00- 19:00 time slot
- Food or non/food product
- Category – such as beverage, dessert, water, cereal, fast food etc
- Brand – if food product is affiliated to a particular food brand/company
- Message source – who the individual/s in the advertisement are eg. Children, teachers, doctors etc
- Animated character/celebrity – whether the advertisement includes an animated character or celebrity
- Claims – were any health claims made? Such as 'food is nutritious, assists with strength' etc
- Inclusion of health disclaimers (warning about excess consumption)
- Any additional notes

2.2.2 Data Management

Video data collected during the two-week period was taped and stored on a Digital Satellite Television (DSTV) Multichoice explorer personal video recorder (PVR). This is a recording device provided by the Multichoice group for customers subscribed to this satellite television service. Entry/logging data was stored and managed using Microsoft Excel. The data was cleaned and any errors in capturing of the data were corrected.

2.3 Analysis

Content analysis has been stated as a "research method for making replicable and valid inferences from data to their context, with the purpose of providing knowledge, new insights, a representation of facts and a practical guide to action" (Macnamara, 2005). Content analysis may be used in both a qualitative or quantitative way (Elo & Kyngäs, 2008). The use of both quantitative and qualitative content analysis was meant to ensure that the study did not just focus on quantitative data such as the frequency of advertisements, but also investigated the techniques, mechanisms and styles of advertising being used.

2.3.1 Quantitative Content Analysis

For the first two objectives which aimed to describe the frequency of advertisements for sugary foods shown on television in South Africa during the time allocated to both children's and family viewing times, quantitative content analysis was done using Microsoft Excel. Descriptive analysis with all relevant descriptive tables as well as cross-tabulations were done on all the listed variables such as food type, category and message source.

2.3.2 Qualitative Content Analysis

For the third objective, which aimed to describe the advertising mechanisms, techniques and characteristics being used to advertise sugary foods to children on TV in South Africa qualitative content analysis was carried out. After all recording was completed, all the advertisements shown depicting sugary foods were purposively selected for a detailed qualitative content analysis. This yielded seven advertisements that were recorded from the stored videos on the DSTV PVR decoder onto a cellular phone. These videos were then transferred onto a computer file and converted to MP4 format. They were then imported into MAXQDA software for analysis. The individual advertisement videos were inductively coded and captured the audio, visual as well as contextual concepts in the advertisements. MAXQDA software was further used to assist in establishing relationships between codes by the use of Code Matrix Browser, Code Relations Browser and the Code Map. This gave a clearer indication of the types of persuasive techniques being used in the advertisements in order to appeal to children and elicit brand recognition and loyalty.

Coding as well as development of a code book was carried out with the assistance of a fellow coder (a post-graduate student in the Master of Public Health programme). Issues relating to trustworthiness and intercoder reliability were dealt with by use of the MAXQDA Intercoder agreement function which examines code occurrence, code frequency as well as code intersection (MAXQDA, n.d.). Following this thematic analysis was done in MAXQDA and findings are presented in the Results section.

2.4 Ethical Considerations

The protocol for this study was submitted to the University of Witwatersrand Postgraduate Assessor Group and the Human Research Ethics Committee (HREC) of the University of Witwatersrand for ethical approval, which was granted.

Since no individuals were interviewed or observed, there was no need for consent forms. Data collection was through the viewing of TV adverts on free to air South African channels. Collected data was stored on a Google Drive folder that could only be accessed by me and my supervisor.

3 RESULTS

3.1 Quantitative content analysis

During the two-week period 681 advertisements were recorded on channels SABC1 and SABC2 during the time periods of 15:00-19:00 from Monday to Friday.

Table 1 below depicts the number of food and non-food advertisements shown on the channels SABC1 and SABC2 during the two-week period. Food advertisements made up 13% of all the advertisements shown during this two-week period. Although there were more advertisements overall during the 17:00-19:00 timeslot, there was a slightly higher percentage of food advertisements within the 15:00-17:00 timeslot.

Table 1: Total number of adverts shown on SABC 1 & SABC 2 during the 2-week period by Food and Non-food category

Advert category	**Timeslot**					
	15:00-17:00		**17:00-19:00**		**15:00-19:00 (Grand Total)**	
	n	**%**	**n**	**%**	**n**	%
Food	40	14.8	49	12,0	89	13,1
Non-food	231	85.2	361	88,0	592	86,9
Grand Total	**271**	**100%**	**410**	**100%**	**681**	**100%**

Table 2 below depicts the number of non-food advertisements shown on SABC1 and SABC2 during the two-week period. Most of the advertisements on SABC1 were for TV show adverts such as soap operas, while most of the advertisements on SABC2 were store advertisements. Of concern is the appearance of an advertisement for alcoholic beverages on SABC1 that aired during the family viewing time of 17:00-19:00 under the ‘other’ category.

Table 2: Total number of Non-food adverts by channel and timeslot

Category	Channel													
	SABC1 by timeslot				SABC1 Total		SABC2 by timeslot				SABC2 Total		Total	
	15:00-17:00		17:00-19:00				15:00-17:00		17:00-19:00					
	n	%	n	%	n	%	n	%	n	%	n	%	n	%
TV Show advert	50	8,4	40	6,8	90	15,2	77	13,0	100	16,9	177	29,9	267	45,10
Toiletries	8	1,4	47	7,9	55	9,3	8	1,4	7	1,2	15	2,5	70	11,82
Store advert	8	1,4	34	5,7	42	7,1	1	0,2	18	3,0	19	3,2	61	10,30
Insurance	19	3,2	24	4,1	43	7,3	1	0,2	12	2,0	13	2,2	56	9,46
Detergent	10	1,7	19	3,2	29	4,9	4	0,7	9	1,5	13	2,2	42	7,09
Medication	7	1,2	6	1,0	13	2,2	8	1,4	13	2,2	21	3,5	34	5,74
Sports team advert	6	1,0	7	1,2	13	2,2	3	0,5	1	0,2	4	0,7	17	2,87
Awareness/health Advert	8	1,4	1	0,2	9	1,5	1	0,2	3	0,5	4	0,7	13	2,20
Festival advert	5	0,8	6	1,0	11	1,9	1	0,2		0,0	1	0,2	12	2,03
Other	6	1,0	10	1,6	16	2,7		0,0	4	0,7	4	0,7	20	3,4
Grand Total	**127**	**21,5 %**	**194**	**32,8 %**	**321**	**54,2 %**	**104**	**17,6 %**	**167**	**28,2 %**	**271**	**45,8 %**	**592**	**100,00 %**

Table 3 below depicts the number of food advertisements of different categories shown during the two different timeslots on channels SABC1 and SABC2 during the two-week period. The majority of advertisements observed during both time periods were for unhealthy foods with fast foods making up 28,6% of all the advertisements observed on SABC 1 and confectionary making up 58% of all the advertisements observed on SABC 2, during the 15:00-17:00 timeslot which dedicated to children's viewing. Although not classified as sugary foods in this study, fast foods do contain a significant amount of sugar, therefore the presence of advertisements displaying this type of food during children's viewing time is important to take note of. Advertisements for foods that can be classified as healthy foods such as vegetables and meat, for example, only made up 2% of all the advertisements observed during the two-week period.

Table 3 Total number of Food adverts by channel and timeslot

Food category	Channel													
	SABC1 by timeslot				SABC1 Total		SABC2 by timeslot				SABC2 Total		Total	
	15:00-17:00		17:00-19:00				15:00-17:00		17:00-19:00					
	n	%	n	%	n	%	n	%	n	%	n	%	n	%
Fast food	4	28,6	17	48,6	21	42,9	2	7,7	7	50	9	22,5	30	33,7
Confectionery	3	21,4	4	11,4	7	14,3	14	53,8	1	7,1	15	37,5	22	24,7
Cereal	1	7	3	8,6	4	8,2	5	19,2	3	21	8	20	12	13,5
Chips (Potato crisps)	2	14,3	3	8,6	5	10,2		0,0		0,0		0,0	5	5,6
Dairy	2	14,3	2	5,7	4	8,8		0,0		0,0		0,0	4	4,5
Bread		0,0	3	8,6	3	6,1		0,0		0,0		0,0	3	3,4
Spices		0,0		0,0		0,0	2	7,7		0,0	2	5	2	2,2
Sauce		0,0	1	2,9	1	2,0		0,0	1	7,1	1	2,5	2	2,2
Fresh Vegetable	1	7		0,0	1	2,0	1	3,8		0,0	1	2,5	2	2,2
Noodles		0,0		0,0		0,0		0,0	2	14,3	2	5	2	2,2
Meat		0,0	2	5,7	2	4,1		0,0		0,0		0,0	2	2,2
Stock cubes		0,0		0,0		0,0	1	3,8		0,0	1	2,5	1	1,1
Dessert	1	7		0,0	1	2,0		0,0		0,0		0,0	1	1,1
Sugar sweetened beverage		0,0		0,0		0,0	1	3,8		0,0	1		1	1,1
Grand Total	**14**	**100**	**35**	**100**	**49**	**100**	**26**	**100**	**14**	**100**	**40**	**44,9%**	**89**	**100**

Table 4 below depicts the number of sugary and non-sugary food advertisements shown during the two different timeslots on channels SABC1 and SABC2 during the two-week period. There were 36 advertisements repeatedly aired displaying sugary food products during the two-week period, making up 40% of all the food advertisements shown during the time-period. The channel SABC2 had a higher percentage of sugary food products aired in comparison to non-sugary food products. The majority of the sugary food advertisements were aired during the 15:00-17:00 timeslot that is allocated to children's programmes, with 76% of all the food advertisements aired during the 15:00-17:00 timeslot on SABC 2 being for sugary food products.

Table 4: Number of sugary vs non-sugary food advertisements by channel and timeslot

Food advert category	Channel													
	SABC1 by timeslot				SABC1 Total		SABC2 by timeslot				SABC2 Total		Grand Total	
	15:00-17:00		17:00-19:00				15:00-17:00		17:00-19:00					
	n	%	n	%	n	%	n	%	n	%	n	%	n	%
Sugary	5	35,7	7	20	12	24,5	20	76,9	4	28,6	24	60	36	40,4
Non-sugary	9	64,3	28	80	37	75,5	6	23,1	10	71,4	16	40	53	59,6
Grand Total	**14**	**100**	**35**	**100**	**49**	**100**	**26**	**100**	**14**	**100**	**40**	**100**	**89**	**100**

Table 5 below depicts the type of sugary food product advertisements shown during the two different timeslots on channels SABC1 and SABC2 during the two-week period. The sugary food advertisements observed consisted of seven unique advertisements which were repeatedly aired during the research period. These were put into different categories such as confectioneries, cereals, desserts, and sugar-sweetened beverages. Advertisements for confectioneries, such as chocolates, made up 61% of the total sugary food advertisements shown, with the highest percentage being recorded on SABC2 during the timeslot 15:00-17:00, which is allocated for children's programmes.

Table 5: Sugary food product advertisements by channel and timeslot

Sugary food category	Channel													
	SABC1 by timeslot				SABC1 Total		SABC2 by timeslot				SABC2 Total		Grand Total	
	15:00-17:00		17:00-19:00				15:00-17:00		17:00-19:00					
	n	%	n	%	n	%	n	%	n	%	n	%	n	%
Cereal	1	20	3	43	4	33,3	5	25	3	75	8	33,3	12	33
Confectionery	3	60	4	57	7	58,3	14	70	1	25	15	62,5	22	61
Dessert	1	20		0,0	1	8,3		0,0		0,0		0,0	1	3
Sugar sweetened beverage		0,0		0,0		0,0	1	5		0,0	1	4,2	1	3
Grand Total	**5**	**100**	**7**	**100**	**12**	**100**	**20**	**100**	**4**	**100**	**24**	**100**	**36**	**100**

Table 6 below depicts the various message sources that were dominant in the sugary food products advertisements recorded in the two-week period. As can be seen from the table children and young adults were the main characters in the advertisements for sugary food products, referred to here as message sources. They were portrayed in different forms; just as children in a family or casual setting, in a school setting where they are referred to as students, or as older adolescent children in a casual setting in which they are referred to as young adults.

Table 6: Message source in sugary food products

Message source	**n**	**Percentage of total**
Students	16	44,4%
Children	13	36,1%
Students and teacher	2	5,6%
Man as grown up child	1	2,8%
Friends	1	2,8%
Young adults	1	2,8%
Mother and child	1	2,8%
Mother	1	2,8%
Grand Total	**36**	**100,0%**

3.2 Qualitative content analysis

The sugary food advertisements recorded during this period were separated into different categories as displayed above (see Table 5).

The seven unique sugary food advertisements that were repeatedly aired during the two-week time-period were purposively selected and analysed to understand the advertising mechanisms being used. The content of these advertisements appears to have been designed with the aim of being persuasively interesting and attractive to individuals in its target audience, referred to here as appeals, in order to elicit strong brand recognition and loyalty. The different appeals were achieved by using several techniques such as the use of light, colour, and sound. Figure 1 below summarises *What* these appeals were, and *How* they were achieved.

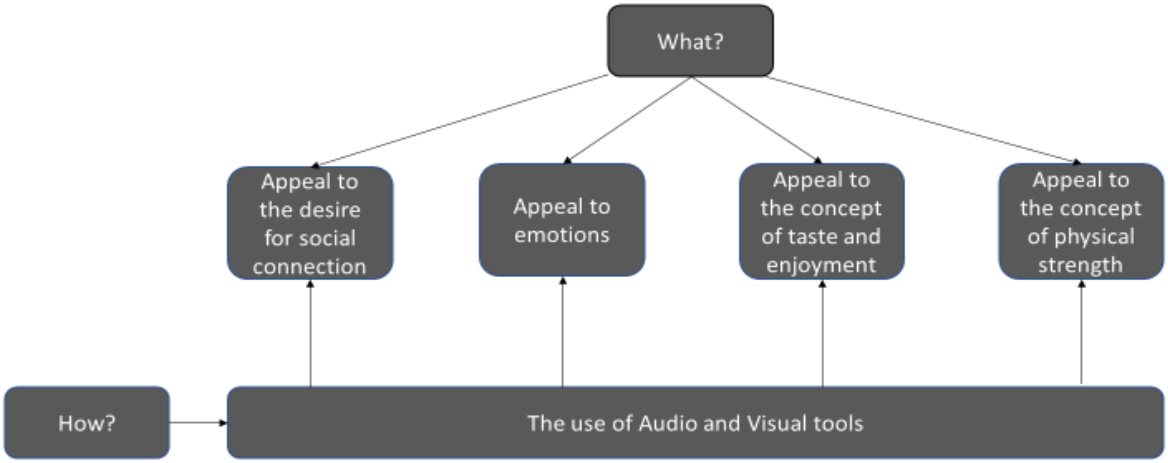

Figure 1: Summary of techniques used in advertisements to appeal to children

Below is a description of the various types of appeals used in the sugary food advertisements analysed during the two-week period, as well as the accompanying techniques within each appeal. It is important to note that most of the advertisements used more than one appeal per advertisements in order to attract children to the sugary products under display.

3.2.1 Social appeal/social connection

Social appeal describes the appeal to the individuals desire for social connection. Some of the types of social connections displayed in the advertisements included displays of affection such as sharing, as well as the concept of relationships and friendships, with strangers as well as known individuals.

An example of such a connection is in an advertisement of a sugar-sweetened beverage where a group of friends are seen together purchasing the product in a makeshift cart they have created together. As soon as they have purchased the product, they are displayed drinking it in satisfaction of their achievement of working together and making use of the cart that allowed them access to the beverage. In this example the desire for social connection is tapped into by the display of working together in an innovative manner with friends. This appeal is further

solidified by the use of visual and audio tools such as colour, light, laughter and music as the successful group of friends, dressed in colourful clothing, on a bright sunny day leave with their colourful beverages laughing and happy with the product jingle playing in the background.

The further use of visual tools to elicit brand recognition and further social connection in this advertisement is seen by the constant display of the product and the product brand logo throughout the advertisement. The product is displayed several times during the advert, and at the end the brand logo, along with a product slogan and the display of a social media application where further information and activities surrounding the product can be accessed, is presented. This strengthens the appeal/desire for social connection as social media is prominently used by children and adolescents and has increasingly been used in marketing that is targeted at children.

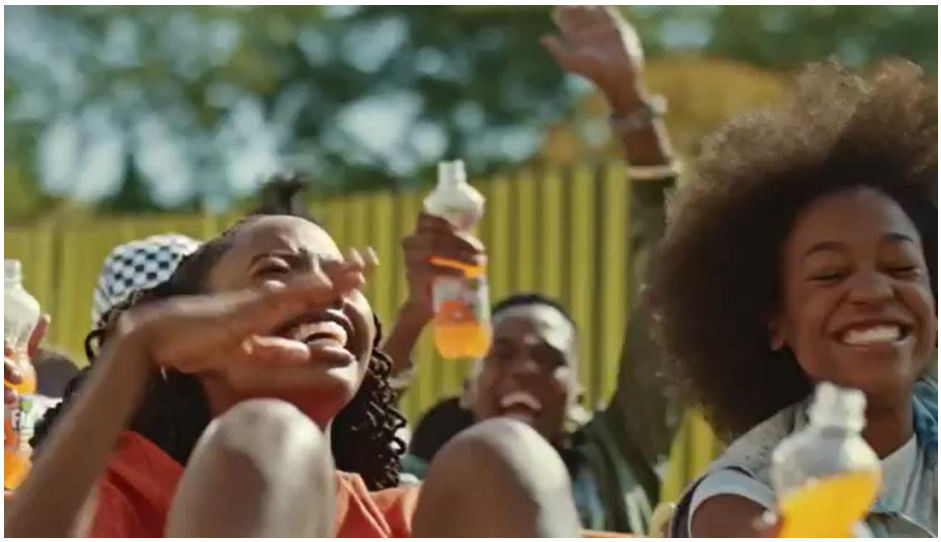

Image 1: Image from the advertisement depicting a group of happy and satisfied peers after purchasing sugar-sweetened beverages

3.2.2 Emotional appeal

Emotional appeal refers to the appeal to an individual's feelings and emotions. These kinds of appeals were displayed in the advertisements in the form of facial expressions, hand gestures and affectionate physical contact such as hugging.

In some of the advertisements, this appeal was presented in a light manner, in the form of laughter, happiness and humour. In other advertisements, the appeal was presented in the form of sacrifice, compassion, and empathy. An example of this is in an advertisement for confectionary, a young child who has been fetched from school by an exhausted mother, attempts to purchase a chocolate for her as a birthday gift. As she does not have enough money, she attempts to trade what appears to be two beloved toys for the chocolate, which a compassionate shop owner refuses to accept and instead gives her the chocolate regardless of her not having provided him with sufficient funds for it. The overjoyed and surprised mother hugs her daughter affectionately, as the chocolate is presented to her.

In this advert the emotional appeal is played out by the display of an intimate and affectionate relationship between a mother and daughter, as well as the display of empathy and compassion from the store owner. The visual tools such as the depiction of colourful clothing worn by both the mother and child, the use of colourful toys, and continuous display of the chocolate in several frames of the advert are a clear technique to further solidify brand recognition in this advert



Image 2: Image from advertisement of a child attempting to purchase a a chocolate by using her colourful toy as payment.

3.2.3 Taste and enjoyment

Taste and enjoyment refer to an individual's positive experience of flavour through eating food that is perceived as desirable.

This appeal was used by the inclusion of strong visual and audio techniques within all the observed advertisements. Enjoyment of food was visually depicted using individuals smiling and closing their eyes in satisfaction when ingesting the sugary food product being advertised. There was also prominent use of colourful animated shapes such as colourful stars when the sugary food product was ingested in an advert for sweets. Another visual tool was the use of imagination as seen in for example, in an advertisement for a custard pudding, where the adult eating the custard imagined themselves as a child eating and enjoying the custard.

Product display, with presentation of multiple product flavours, was dominantly associated with taste and enjoyment and was often coupled with audio techniques such as a product jingle and slogan. This was usually descriptive of the sugary food products good flavour, taste and nutrition and coupled with statements such as ‘nourish your great’ in one of the advertisements. Other audio techniques that were used included the use of sound such as a bubbling effect or popping music when a chocolate or sweets were ingested. All techniques described above can be described as being purposively visually and audially appealing to children in order to reinforce the idea of how tasty and flavourful the sugary food products on display were.



Image 3: An image showing bubbling animated shapes appearing after a teacher tastes flavourful sweets given to him by his students.

3.2.4 Physical appeal

Physical appeal refers to the appeal to an individual’s physical attributes such as strength, endurance, and athletic performance.

This appeal was dominant in an advertisement for a range of cereals in which children are seen performing physical tasks such as playing soccer and riding on skateboards. The advert displays the children continuously attempting to perfect their athletic skills, and persevering, even when they fall. Eventually the children perform well with one child scoring a goal during match and the other managing to complete a skating round without falling. In this advert the themes of stamina, perseverance, athletic ability as well as physical strength are displayed.

Visual and audio use of colour, continuous product display and the brand jingle are further used in most of the clips depicting the children in the advertisement achieving physical success, to make the advertisement both catchy and memorable for its target audience.



Image 4: Image of a child getting up after falling off skateboard and looking determined to attempt the sequence again

3.2.5 Association with other food

Association with other food is an important aspect observed in several of the sugary food advertisements that is worth noting. Association with other food refers to the implication of a link or connection between one type of food, in this case a sugary food product, and another type of food.

It is important to note that the food types usually associated with sugary food products in these advertisements were usually unhealthy food products such as fried potato chips, or other sugary foods such as ice cream and jelly. In majority of the frames where sugary food products appeared they would be placed alongside an associated food. This visual technique used unhealthy foods that are already appealing to children then associated them with sugary food

products ensuring that when children saw the unhealthy foods, they might immediately associate them with the sugary food products.



Image 5: Image displaying a custard product being poured onto a bowl of ice cream and jelly, with the packaged custard product in display in the background

4 DISCUSSION

The increase in the prevalence of childhood obesity, particularly in South Africa is of concern as obesity in childhood is associated with increased risk factors for associated NCDs in adulthood such as diabetes and cardiovascular disease (Vilaro et al., 2017). Several influencers to children's dietary choices and consumption behaviours exist, such as the marketing and advertising of unhealthy food directed at children (Kelly et al., 2019a). There is a documented causal link between an increase in exposure to unhealthy food, which includes sugary food products, through advertising, and obesity in children (Kontsevaya et al., 2020).

Amid draft regulations aiming to regulate children's exposure to food advertising on television in South Africa and the signing of a pledge not to directly market to children by companies in the CGCSA, this study aimed to investigate the frequency of sugary food advertisements shown on South African television channels, SABC1 and SABC2, during both viewing times allocated for children's programming and family programming. Further, the study aimed to describe the advertising mechanisms, techniques and characteristics being used to advertise sugary food products to children on TV in South Africa.

4.1 Advertising frequency

A total of 681 advertisements were recorded, which gave an average of approximately eight advertisements per hour. This is in line with previous studies that have reported an average of six to ten advertisements per hour on South African channels (McHiza et al., 2013). The advertisements for food products made up 13% of all the advertisements shown. Of these, sugary food advertisements made up about 40% of the food advertisements. The channel SABC 2, which is said to represent family values and cultural diversity (SABC, 2018) had a higher number of advertisements of sugary foods in comparison to SABC 1. It may also be that since SABC 2 has a higher number of Afrikaans speaking viewers, this may represent individuals of a higher SES and therefore industry may invest more in advertising to this particular audience.

Results from this study are slightly better than those reported from other countries over the years in terms of the amount of food advertising that children are exposed to. In a recent study investigating the extent and nature of food advertising to children in Russia for example, investigators reported that after analysing recordings from two child-oriented and three adolescent-oriented channels over a three month period, 19% of the advertisements children we exposed to were for food. However, of these, 64% of the advertisements were for unhealthy foods compared to 40% in our analysis (Kontsevaya et al., 2020).

Several other studies that conducted a content analysis of food advertisements on children's television channels in different countries over different periods of time reported finding even higher percentages of food advertisements during children's viewing times with food advertisements making up 20% of all the recorded advertisements in Guatemala (Cosenza-Quintana, Morales-Juárez, Ramirez-Zea, Vandevijvere, & Kroker-Lobos, 2020), 27% of all advertisements recorded in the USA (Powell, Szczypka, & Chaloupka, 2007), 31% of all advertisements recorded in Australia (Chapman, Nicholas, & Supramaniam, 2006) and 32% of all advertisements recorded in Turkey (Ok et al., 2016) It is encouraging to note that compared to other high and middle-income countries, the frequency of food advertising that children are exposed to is lower in South Africa. This however does not take away from the fact that advertising of such nature, 13% as observed in this study, still exists and has not decreased over the years. In comparison with different studies previously carried out in South Africa, particularly one by (McHiza et al., 2013) that analysed food advertisements on South African TV for both adults and children on four free-to-air channels, over a four week period, looking at three different timeslots (15:00-17:00hrs; 17:00-19:00hrs and 19:00-21:00hrs), the frequency of sugary food product advertisements aired on South African free-to-air channels

has not decreased over the past seven years, but has remained relatively the same. This implies that children in South Africa are still being exposed daily to sugary food product advertisements on free-to-air channels at the same frequency as they were seven years ago, despite the existence of the CGCSA pledge.

4.2 Children's and family viewing times on TV

The study recorded advertisements during two different timeslots, which are dedicated for both children's and family programmes. In a study that investigated children's exposure to foods and beverages that are classified as unhealthy food through marketing and advertising in 22 countries, (Kelly et al., 2019b) found that advertising of such foods generally occurs during broadcast times known to have the greatest number of child viewers. Their results demonstrated that the rate of unhealthy food and beverage advertisements was 50% or more higher during peak viewing times for children's programmes in seven of the countries. (Kelly et al., 2019b). Observations of the same nature were found in a study in Malaysia, which reported that 28% of all advertisements aired during programming known to be viewed by children were for unhealthy food (Hastings & Cairns, 2010).

Similarly, on the channel SABC 1, both the timeslot for children's programmes and the time for family programmes had a similar number of advertisements for sugary food products aired. On SABC2, however, close to 80% of the food advertisements aired during the timeslot dedicated to children's viewing were for sugary food products. This is a concerning observation, as airing the majority of sugary food products during time allocated for children's programmes implies that the advertisements were directly targeting children, despite the growing burden of childhood obesity, and calls by the public health and academic communities to lessen children's exposure to unhealthy food products.

4.3 Advertising mechanisms and techniques

Food corporations spend millions of dollars yearly to fund research on the cognitive and behavioural effects of their various advertising mechanisms and techniques on children and adolescents (Connor, 2006). Therefore, the content of the advertisements that are aired during children's programming has been carefully crafted with the intention of appealing to its target audience and encouraging brand loyalty and product purchase.

Several studies have reported that persuasive marketing techniques are more frequently used in unhealthy food advertisements aimed at children, in comparison to those for adults, with advertisements aimed at children averaging about five techniques per advertisement (Vilaro et al., 2017). Advertisements displaying such techniques have also been observed to air mostly during peak times for children's programmes (Kelly et al., 2019a).

The most frequently documented appeals include product novelty, enjoyment, fun, the use promotional characters as well as the use of children or child-like characters as the main character or message source of the advertisement (Kontsevaya et al., 2020). One study that looked at unhealthy food advertising aimed at toddlers and pre-school children found that 82% of the advertisements, particularly those for sweetened cereals, fruit snacks, candies and frozen desserts, used the appeal of fun and happiness as an advertising mechanism. The study also reported branding as dominant aspect of the advertisement, with social and emotional appeals being used as a way to form a connection with products or brands (Connor, 2006).

Results from the content analysis of this study highlighted how similar persuasive techniques as those documented above were used in order to appeal to children in different ways. This was achieved by the use of audio-visual techniques. The audio techniques included the use of sound such as laughter, the use of music such as popping and bubbling sound effects as well as a product slogan or jingle that played at key moments and towards the end of the advertisement. The visual techniques included continuous product display, brand logo display and the use of colourful shapes and clothing. These techniques were used to appeal to the children through emotional, social and physical aspects that were displayed by using relatable characters such as young children as the message source, in attractive and familial settings.

Another technique observed in this study which was of interest is the use of phrases that may be categorized as health claims. This was prominent in advertisements that mainly appealed to strength, stamina and physical abilities. Phrases such as *'Nourish your great'* and *'Helps you stay active and alert'* are examples of phrases that were used together with a visual display of a child performing exceptionally well at a physical task such as sport after ingesting the advertised sugary product. The use of such claims has been documented to potentially cause positivity bias, causing consumers to perceive an unhealthy food as healthier than it really is. A number of studies (Cosenza-Quintana et al., 2020) state that parents and caregivers are more likely to agree to purchase foods if they perceive them to be healthy based on the presence of health claims regarding their nutritional quality. In the advertisement observed in this study,

the product package which listed all the nutrients available in the product was continuously displayed on screen, however the high sugar content of the product was not. This is a deliberate and misleading tactic which has the potential to contribute to continuous consumption of this product by children, which is in fact high in sugar.

Findings from this study are very similar to those reported in previous studies from other countries, and continue to shed light on the persuasive techniques being used to deliberately market unhealthy foods, and in this case sugary food products, to children. The companies using these techniques are aware of the fact that children have limited cognitive abilities, and as they are still developing are unable to discriminate between the persuasive intent of an advertisement of this nature (Vilaro et al., 2017), making them highly susceptible to the effects of continued exposure to such content.

4.4 The use of social media

This study focused on advertising on South African television, as television has been the primary medium by which food companies advertise to children and has the greatest reach among South African children. There is however, increasing evidence of a shift in company advertising expenditure from television to digital marketing on various social media platforms, with the rise in digital media consumption (Baldwin, Freeman, & Kelly, 2014), where an array of techniques are being used to promote products and engage with younger audiences (Potvin Kent, Pauzé, Roy, de Billy, & Czoli, 2019).

Several social media platforms such as Facebook, Twitter, Instagram, Youtube and Tik tok have become increasingly popular around the world and in South Africa (Kubheka, Carter, & Mwaura, 2020). The use of social media for advertising is an emerging market, and is particularly beneficial when marketing to children and adolescents as the use of social media among children and adolescents is becoming increasingly widespread (Robinson et al., 2017) It is reported that 80% of children and adolescents in USA use Youtube and Instagram, while adolescents in Canada spend approximately 120 minutes a day surfing the internet (Potvin Kent et al., 2019). Although use in a middle-income-country like South Africa may be relatively lower because of limited access to data and WIFI connections, overall engagement on these platforms by children and adolescents is likely to be increasing.

In this study, although the focus was television advertisements, during one of the advertisements there was the use of a social media tag where at the end of the advertisement

an invitation to further engage with the sugary food product on a YouTube channel, in this case a sugar-sweetened beverage, was displayed. The use of such a tag is a way of further engaging with children on a platform that is familiar with them. Social media platforms have the ability to further elicit brand loyalty as they are heavily engaging (Robinson et al., 2017) making it difficult for children to differentiate between entertainment and promotional content (Baldwin et al., 2014). In a review of the sugar-sweetened beverage industry's marketing directed at children, (Welsh, Lundeen, Stein, & Stein, 2013) state how beverage companies have begun to use social media platforms such as videos, contests and downloads on their sites. They also specifically mention the use of social media links, similar to the one observed in this study, by companies as one of the many direct techniques being used by beverage companies with the intention to appeal to children

The use of such a social media tag in this advertisement can be seen as an intentional attempt to further appeal to children and ensure brand loyalty and continued consumption of the sugary food product. This presents as an even greater problem, as content on various social media platforms is highly unregulated (Baldwin et al., 2014) making it difficult to control what children can potentially be exposed to.

4.5 Industry self-regulation

Despite the identification of policies to reduce the impact of the marketing of unhealthy foods and beverages on children in order to reduce childhood obesity and premature mortality from NCDs by 25% by 2025 by the WHO (World Health Organization, 2017), global progress on restricting children's exposure to unhealthy foods from marketing has been limited and primarily addressed by industry self-regulation (Kelly et al., 2019a).

Several studies have documented how industry self-regulation has been ineffective in limiting children's exposure to unhealthy food marketing, and can be seen rather as a form of public relations ploy (Kelly et al., 2019b). In two separate studies that looked into industry self-regulation in the USA, including assessing the Children's Food and Beverage Advertising Initiative (CFBAI), both (Kunkel, Castonguay, & Filer, 2015) and (Vilaro et al., 2017) reported that despite implementation of industry self-regulation, unhealthy food advertising directed at children continues. Another study was carried out to examine the effectiveness of the EU Pledge, which was a self-regulation initiative by leading food companies that aimed to restrict advertising of food products high in fat, salt and sugar to children in Europe. Results from the

study revealed that although the overall number of child targeted food advertisements aired during children's programming times did reduce, the nutrient profile model agreed on by signatory companies on what was deemed healthy and unhealthy foods was very lenient. This resulted in children still being exposed to unhealthy food products, even during children's programming, regardless of the appearance of compliance to the pledge by signatory companies (Landwehr & Hartmann, 2020).

In South Africa (Hastings & Cairns, 2010) stated in their study that despite claims of reduced child-targeted advertising by industry, sugary food product advertisements were still being aired on South African free-to-air channels. A further study by (McHiza et al., 2013) carried out in 2013 held the same sentiment, and now observations from this study still report similar findings where a number of companies that were part of the CGCSA pledge on not marketing unhealthy food to children below the age of 12 years old on TV (CGCSA, 2009) as well as the Coca-cola company had advertisements for sugary food products that were aired during children's viewing times.

Evidence from this study shows how there is need for governmental action in the implementation of strict standardized regulations in relation to child-targeted marketing of unhealthy food in South Africa.

4.6 South African legislation

Attempts to regulate the type of content that children are exposed to in advertising in South Africa is a step in the right direction. Both the *Draft Regulation Relating to The Labelling and Advertising of Food (R429) of May 2014,* as well as the *White paper on Audio and Audiovisual Content Services Policy Framework of 2020* which attempt to regulate both the company advertising their product as well as the broadcaster respectively, highlight how it is of paramount importance to protect children's health by regulating what they are exposed to. Implementation of both regulations could work together with other interventions to limit the amount of sugary food products consumed by children and lower the prevalence of childhood obesity in South Africa.

However, since the *Draft R429* has been in the draft phase for six years now, it is unlikely it will be implemented into a regulation. It is likely that an amended version of the draft will have to be composed and republished, further extending the time before an actual regulation from the government can be put in place. To this regard, this means that until such a regulation is

implemented, there is no law restricting the marketing of harmful food products to children, thus there are no penalties if such marketing is undertaken. Furthermore, with regards to the section 5.4.2 in the *White paper on Audio and Audiovisual Content Services Policy Framework*, although it proposes regulations to protect children from the content of advertisements that is deemed harmful, it also does not specify what this regulation entails, nor does it specify the mechanism or extent of regulation.

Several countries, such as Chile, Mexico, Ireland and Norway, have implemented regulations that restrict the marketing of unhealthy food products to children (World Cancer Research Fund International, 2018). In South Korea for example, the regulation does not only limit the content that is advertised during children's viewing on TV, but also puts a restriction on all advertising on radio and internet platforms that includes a "gratuitous" incentive to purchase (Lee et al., 2017). Although the effect of implementation of regulations that restrict child-targeted advertising has not been consistent across all countries, reviews of some countries show promise in the long term and encourage continued monitoring and updating of regulations in line with the development of new advertising techniques by industry in reaction to these regulations (Lee et al., 2017).

4.7 Limitations

The current study, though important, was not without limitations. The study was carried out on two free-to-air channels. This represents a particular demographic within South Africa and limits exposure to individuals who view other television channels that are free-to-air, as well as individuals who use television platforms such as DSTv. More broadly this also limits access to those individuals who rely on internet platforms such as Netflix, Showmax as well as Youtube and Youtube kids and social media advertising that occurs on such platforms. The study was also carried out during the month of October, for only two weeks, which may have limited access to other sugary food advertisements, as there may be increased food advertising during holiday periods such as Easter or Christmas.

4.8 Conclusion

Several studies have demonstrated an association between consumption of foods high in sugar and obesity in children. Exposure to these types of foods through marketing and advertising on TV has played a great role in children's dietary choices, with several types of marketing

techniques being employed. Although industry has volunteered to reduce television advertising directed at children, industry self-regulation continues to be ineffective as evidenced by the continued presence of advertising of sugary food products directed at children on TV found in this study. It is of paramount importance that government legislates to stop children's exposure to unhealthy food products, particularly those high in sugar, on TV, radio and the many emerging social media platforms, with additional specific limitations on the use of persuasive techniques when advertising to children. Current draft regulations are a step in the right direction but need to be expedited in order to strengthen the likelihood of reducing the prevalence of childhood obesity and the potential related risk of morbidity and mortality from associated NCDs in the future.

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Appendices
Appendix 1 Approved Research Protocol

The marketing of sugary food products to children on television,

in South Africa.

Student Name: Patience Mushamiri

Student Number: 779247

Supervisor: Professor Sue Goldstein

Abbreviations

CGCSA	Consumer Goods Council of South Africa
CRD	Chronic Respiratory Disease
CVD	Cardiovascular Disease
LMICs	Low-and-Middle Income Countries
NCD	Non-Communicable Diseases
SABC	South African Broadcasting Cooperation
TV	Television
UK	United Kingdom
USA	United States of America
WHO	World Health Organization

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Introduction

Background

Non-Communicable Diseases (NCDs) have become a leading cause of death globally over the past decade, with diabetes, Cardiovascular Disease (CVDs), Chronic Respiratory Diseases (CRDs) and cancer accounting for most of the burden of NCDs (Myers, Fig, Tugendhaft, Mandle, et al., 2017). The World Health Organisation (WHO), reports that in 2012 NCDs accounted for 68% of global deaths, and of these about 28 million deaths occurred in Low and Middle Income Countries (LMICs) (World Health Organization, 2015). In South Africa, NCDs accounted for 51% of deaths recorded in 2016 (Skolnik, 2016).

There are several risk factors contributing to the rise in NCD mortality, and among these is the consumption of diets characterized by high intake of fat, salt, and sugars (Nasreddine et al., 2019) which contributes to increasing obesity and its associated diseases (Baleta & Mitchell, 2014). In 2013, South Africa ranked third among the most obese nations in Africa (Myers, Fig, Tugendhaft, Mandle, et al., 2017), and in 2016 65,4% of the female and 40,5% of the male population in South Africa were reported to be overweight (The World Bank, n.d.).

A growing concern, with regards to obesity in South Africa, is the increase in prevalence of children who are regarded as overweight or obese, which was reported to be 18,2% in 2016 (Wicks et al., 2017). Childhood obesity does not only negatively affect a child's quality of life but has also been associated with bad health outcomes as well negative economic consequences for the child and society, that may manifest well into adulthood (Wicks et al., 2017). Although the prevalence and incidence of childhood obesity has stabilized in high income countries, the rates seem to continue to increase in low-and-middle-income countries like South Africa, mainly due to the globalization of food systems resulting in a shift towards poor dietary patterns (Kelly et al., 2019a) with an increase in uptake of packaged foods, street and fast foods and sugary food products (Igumbor et al., 2012) which include sugar-sweetened beverages, fruit juices, biscuits, cakes, cookies, chocolates and sweets (Wang et al., 2012).

Of concern is the increase in consumption of diets high in sugar in South Africa, which are continuously being adopted by children. The World Health Organization's (WHO)

recommended sugar intake is 5% of an individual's daily calories (World Health Organization, 2015),which is approximately equivalent to six teaspoons or 25g (Myers, Fig, Tugendhaft, Mandle, et al., 2017). However, the average South African is reported to consume about 23,5 teaspoons or 99g of sugar per day, which is four times higher than the recommended intake, resulting in South Africa being ranked as number 8 worldwide for large amounts of sugar consumption (Myers et al., 2017). For example, it is reported that carbonated drinks, which contain on average 10 teaspoons of sugar, are one of the food products that are heavily consumed by children in South Africa (Igumbor et al., 2012).

Several factors, such as the types of food children are exposed to on a daily basis, have an influence on children's dietary choices. Of particular concern is the marketing of sugary food products to children on TV (Zimmerman & Bell, 2010), as exposure to such advertisements may increase the likelihood of such foods being prominent in children's diet (Nasreddine et al., 2019) making them more susceptible to obesity.

Literature Review

Childhood obesity and sugar consumption

The WHO's guidelines on the intake of sugar, particularly places emphasis on monitoring the consumption of foods that have free sugars, which include monosaccharides and disaccharides, added to them. Consumption of foods and beverages with free sugars can lead to overall weight gain as a result of an unhealthy diet (World Health Organization, 2015).

In South Africa, 1999 National Food Consumption Survey reports high sugar consumption for children between the ages of 1-9 years, with the most predominant sources of added sugar in their diets coming from food items such as table sugar, squash that had been sweetened, sweets, biscuits, carbonated drinks, and children's breakfast cereals (Steyn & Temple, 2012).

Several studies, including a review by (Malik et al., 2006), have shown an association between the consumption of sugary food products, particularly sugary beverages, and weight gain in children. In their guideline for recommendations of daily sugar intake, the WHO concluded that children who consumed large amounts of sugary-sweetened beverages were more likely to be overweight and obese compared to children who consumed smaller amounts (World Health Organization, 2015).

Media influence

Although several factors may play a role in children's dietary choices, one factor that has received increasing attention is food marketing and advertising to children (Nasreddine et al., 2019). The use of media to market foods to children has been proven to contribute to children's diets, the types of foods children prefer and purchasing requests to parents (Nasreddine et al., 2019), which may increase the risk of childhood obesity.

Although many channels of media currently exist, the majority of marketing of foods to children occurs on television (TV), with strong evidence linking exposure to marketing of sugary foods on TV with the consumption of an energy-dense diet (Nasreddine et al., 2019).

Evidence has suggested that there is an association between the amount of time spent watching TV and the consumption of sugary food products, due to exposure to food advertisements (Zimmerman & Bell, 2010). In a study that aimed to investigate the association between TV food advertising and the prevalence of childhood obesity in thirteen research groups across 8 countries in Europe and the Americas, researchers reported that up to 29% of advertisements shown during viewing time allocated to children's programs were food advertisements, and that of these up to 87% were of unhealthy foods (Goris et al., 2009). In another study published in Ireland, over 90 % of food advertisements that were aired during children's viewing times included advertisements for sweet and sugary snacks (Scully et al., 2015).

Several modes of advertising directed to children exist, including the use of imagery that appeals to children such as cartoon characters and celebrities. These techniques work to enhance brand recognition in young children (McHiza, Temple, Steyn, Abrahams, & Clayford, 2013), which may increase desire for such products and affects negotiation and purchasing requests to parents when they come into contact with the products. In a content analysis of TV advertising in South Africa, researchers report the common use of popular cartoon characters to endorse sugary foods such as sweets, sugar-added cereals as well as sweet carbonated beverages to children (McHiza et al., 2013). Children, particularly younger children, have lower cognitive defences, therefore are more susceptible to television marketing in general (Scully et al., 2015), making it increasingly important to monitor and regulate the types of foods they are exposed to on TV.

In South Africa, the South African Broadcasting Cooperation (SABC), has three broadcasting stations, namely SABC 1, 2 and 3 which are broadcasted freely on air, that is, no subscription or fee is required in order to access these stations (Shobiye et al., 2018). SABC 1 and 2 which

are said to represent the youth as well as family and culture respectively, (SABC, 2018) mainly broadcast their programmes in a range of languages including as isiZulu, isiXhosa, TshiVhenda, TshiTswana, Afrikaans and English, while SABC3 transmits it's programmes mostly in English (Shobiye et al., 2018). As of the 2017/2018 financial year, SABC reported attracting over 28 million South African viewers a month, with SABC 1 and 2's broadcast reported to be covering 91,2% and 92,5% of the population, while SABC 3 covers 82,1% (SABC, 2018). On these channels, the time between 15:00 – 17:00 is primarily dedicated to children's programmes such as cartoons and educational shows, while the time between 17:00-19:00 is primarily dedicated to programmes such as talk shows and family friendly dramas (McHiza et al., 2013). Children are reported to view TV during both times allocated primarily for children's programs as well as during programming dedicated to family programmes. It is therefore important to consider both these viewing times when investigating the marketing of sugary foods to children on TV.

Food Advertising Policy and Legislation

Several guidelines and policies exist globally with regards to the marketing of food to children. The WHO's published Commission On Ending Childhood Obesity (World Health Organization, 2017), as well as its Global Action Plan For Prevention And Control of NCDs 2013-2020 (World Health Organization, 2015), identifies guidelines for daily sugar consumption and makes an emphasis on the need for legislation aimed at reducing the impact of exposure to unhealthy foods as a result of food industry advertising targeted at children, as indicators to raise awareness around childhood obesity and reduce premature mortality from NCDs.

Governments and industry regulations in countries such as the United States of America (USA) and the United Kingdom (UK), have made an effort to limit the amount of food advertising on TV during children's programs (E. Boyland & Harris, 2017). Countries like Chile for example, have strict laws that restrict all food advertising targeting children below the age of 14 via all media channels (Coates et al., 2019).

In South Africa, the Department of Health Directorate on Food Control has published several regulations, with regards to advertising of different food products. An example of such a regulation is the *Draft Regulation Relating to The Labelling and Advertising of Food (R429) of May 2014* (Department of Health, 2014), which has a section that addresses

marketing/advertising of food to children. The draft states that "No food or non-alcoholic beverage shall be marketed to children unless it complies with all the criteria in Guideline 14." (Department of Health, 2014). Guideline 14 essentially states that no unhealthy food may be advertised on radio or TV between the hours of 06:00 – 21:00, irrespective of whether that advertising is published outside of children's programmes (Department of Health, 2014).

Besides current efforts underway by the government and department of health to control the advertising of food products to children, organizations in the food industry have also embarked on self-regulation efforts with regards to this issue. The Consumer Goods Council of South Africa (CGCSA), an organization comprising of several companies in the food industry such as the Coca-Cola Company and Nestle for example, made a pledge in 2008, to not market unhealthy food to children below the age of 12 years old on TV (CGCSA, 2009). However, there is concern of the effectiveness of such strategies as several evaluations across the world have demonstrated limited reductions in the amount and frequency of sugary food advertisements targeting children following implementation of food industry self-regulation (E. Boyland & Harris, 2017), as it is not actual legislation, therefore not binding. The same trend is seen in South Africa, as there is reported evidence of continued advertising of unhealthy foods to children on national TV channels regardless of the pledges made (McHiza, Temple, Steyn, Abrahams, & Clayford, 2013).

It is evident that there is a growing concern of the effects of the kind of food products that children are exposed to on TV, and the impact it has on unhealthy dietary choices and essentially childhood obesity. Though efforts by industry to self-regulate are a step in the right direction, they are not fully effective strategies in controlling children's exposure to sugary foods. Following the making of such pledges by industry in South Africa, as well as formation of drafts such as the R429 (Department of Health, 2014), it is important to understand the current marketing/advertising trends and techniques being used to advertise such products to children.

Problem Statement

With the increase in prevalence of NCDs in South Africa, it is important to address the several risk factors associated with these diseases (Myers, Fig, Tugendhaft, & Mandle, 2017). Dietary choices in particular, play a large role in the increase of obesity and its related consequences. The sugar consumption rates of an average South African, of 99g per day, are of concern, and

are believed to have an association with weight gain and increased risk of NCD mortality (Malik et al., 2006). With the rise in the prevalence of obesity, particularly childhood obesity, it is important to monitor any influencers to children's dietary choices and food preferences and in particular how certain unhealthy food products are marketed to children on television.

Justification

Following pledges such as those made by the South African Consumer Goods Council and the Coca-Cola company relating to marketing of sugary foods and beverages to children (CGCSA, 2009), very few studies have investigated the current marketing techniques being used to advertise such foods to children. Evidence exists suggesting that industry self-regulation is not as effective in bringing about reduction in advertising (E. Boyland & Harris, 2017). It is therefore important to get a view of the marketing and advertising techniques currently being used. This study aims to explore the frequency of and mechanism being used to market sugary foods to children on South African television channels.

Research question, Aim and Objectives

Research question

How are sugary food products marketed to children on TV in South Africa?

Study Aim

The study aims to investigate the advertising landscape of sugary food products during children's television viewing times in South Africa.

Objectives

4. To describe the frequency of advertisements for sugary foods shown on television in South Africa during the time allocated to children's programs in the month of October 2019
5. To describe the frequency of advertisements for sugary foods shown on television in South Africa during the time allocated to family programs in the month of October 2019
6. To describe the advertising mechanisms, techniques and characteristics being used to advertise sugary foods to children on TV in South Africa

Methods

Study design

The study design is cross-sectional mixed methods design. I will use both quantitative and qualitative methods to address the different objectives of this study. I will use quantitative methods to address the first two objectives which deal with the amount of sugary foods advertisements shown on South African TV channels during different viewing times. I will use quantitative methods to address the third objective with regards to the characteristics and mechanisms being used to advertise sugary food products to children on South African TV channels.

Study setting

The study setting will be the selected SABC free to air television channels.

Study population

The study population will be the advertisements for sugary food products shown on the selected free to air South African TV channels during children's and family viewing times in the month of October 2019.

Sample

I will use purposive sampling to select the channels that will be used in this study, which are local (SABC) free to air channels, SABC 1 and 2. These channels have been selected because of their high viewership rates among a diverse range of races and cultures across South Africa (Shobiye et al., 2018), with reported weekly audiences of 25,8million and 24,9 million viewers respectively (SABC, 2018). Two different time slots will be included, namely the time slots between 15:00-17:00 (children's programs) and between 17:00-19:00 (family programs). This is mainly because children watch TV both during programming that is primarily dedicated to children as well as with their families during the time slots allocated for family viewing. (McHiza et al., 2013). From the recorded sugary advertisements, I will purposively sample a selected amount of the advertisements for qualitative analysis.

Data collection

The study's focus is sugary foods advertisements shown during both children programs and programming dedicated to shows that are deemed appropriate for the whole family. Data will be collected by recording viewing on the two channels SABC1 and SABC2 during the times 15:00- 19:00. Recording will be done by recording programming on one channel per week. Therefore, the recordings will be for four hours a day, during weekdays (Monday to Friday)

for a period of two weeks. It is estimated that on average, there are at least six commercial breaks during one hour of viewing (McHiza et al., 2013). This gives 120 advertisements per channel per week, and approximately 240 advertisements in total during the two-week period for analysis.

Measurement

For each advertisement shown during the selected timeslots, I will record information on the following variables:

- Date – The date of the advertisement
- Channel – whether SABC 1 or 2
- Timeslot- either between 15:00-17:00 or 17:00- 19:00 time slot
- Food or non/food product
- Category – such as beverage, dessert, water, cereal, fast food etc
- Brand – if food product is affiliated to a particular food brand/company
- Message source – who the individual/s in the advertisement are eg. Children, teachers, doctors etc
- Animated character/celebrity – whether the advertisement includes an animated character or celebrity
- Claims – were any health claims made? Such as 'food is nutritious, assists with strength' etc
- Inclusion of health disclaimers (warning about excess consumption)
- Any additional notes

Data Analysis

Data Management

Data collected will be stored and managed using Microsoft Word Excel. The data will be cleaned and any errors in capturing of the data will be corrected. I will develop coding schemes in order to manage and analyse the data, with categorization matrix and data coded according to categories (Macnamara, 2005). I will approach a fellow postgraduate student to assist as a second coder, in order to establish inter-coder reliability and validity (Macnamara, 2005).

Statistical Analysis

Analysis Plan

As stated previously, both quantitative and qualitative content analysis will be used in this study. Content analysis has been stated as a "research method for making replicable and valid inferences from data to their context, with the purpose of providing knowledge, new insights, a representation of facts and a practical guide to action" (Krippendorff 1980) (Macnamara, 2005). Content analysis may be used in both a qualitative or quantitative way, and may be used in an inductive or deductive manner (Elo & Kyngäs, 2008). The use of both quantitative and qualitative content analysis will ensure that the study does not just focus on quantitative data such as the frequency of advertisements, but also zooms in on the techniques, mechanisms and styles of advertising being used.

Quantitative Content Analysis

For the first two objectives Quantitative Content Analysis will be done using Microsoft Excel and STATA software. Descriptive analysis with all relevant descriptive tables as well as cross-tabulations will be done on all the listed variables such as food type, category, message source etc.

Qualitative Content Analysis

For the third objective I will carry out Qualitative Content Analysis. After all recording has been completed, a select number of sugary food advertisements will be selected and transcribed. Coding of the transcribes as well as development of a code book will be carried out with the assistance of a fellow coder (a post-graduate student in the Master of Public Health programme) using the MAXQDA software. This software will further be used for analysis of the coded content. Issues relating to trustworthiness and intercoder reliability will be dealt with by use of the MAXQDA Intercoder agreement function which examines code occurrence, code frequency as well as code intersection (MAXQDA, n.d.).

Limitations

The cross-sectional study design that I shall use in this study presents as a limitation as it limits the ability to comment on trends of advertising sugary foods directed at children, over time in South Africa. The study will also only focus on free to air channels SABC 1 and 2, which excludes other channels shown on platforms such as DStv. This may limit my access to other viewers of varying Socio-economic status (SES).

Ethical Considerations

The protocol will be submitted to the University of Witwatersrand Postgraduate Assessor Group and the Human Research Ethics Committee (HREC) of the University of Witwatersrand for ethical approval.

Since no individuals will be interviewed or observed, there shall be no need for consent forms. Data collection will be through the viewing of TV adverts on free to air South African channels. Collected data will be stored on a Google Drive folder that can only be accessed by me, my fellow coder and my supervisor.

Project Management

Project Plan

The following is an estimation of the timeline for this study.

Action	**Schedule**										
	2019								**2020**		
	May	**June**	**July**	**Aug**	**Sept**	**Oct**	**Nov**	**Dec**	**Jan**	**Feb**	**Mar**
Protocol to be submitted to Wits MPH for grading											
Protocol to be submitted to Wits SPH Assessor Group											
Begin data collection on SABC channels											
Data management and development of coding sheets											
Data analysis											
Reporting of preliminary results and begin report write-up											
Report write-up											

Submission of final report											

Budget

The following is an estimation of the costs that will be incurred during the course of the study. All figures are in South African Rands.

Item	**Cost (ZAR)**
Stationery (printing of coding materials)	300
Telephone costs (airtime for phone calls and data use between coders and supervisor)	100
Travel costs to meet with supervisor (a minimum of 4 times in the year)	1600
Total	**2000**

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Appendix 2 Ethics Clearance form

UNIVERSITY OF THE WITWATERSRAND, JOHANNESBURG

HUMAN RESEARCH ETHICS COMMITTEE (MEDICAL)

Human Research Ethics Committee (Medical)

Research Office Secretariat:
Faculty of Health Sciences, Phillip Tobias Health Sciences Building, 3rd Floor, Office 3D1/2/4, 29 Princess of Wales Terrace, Parktown, 2193
Private Bag 3, Wits 2050
Office email: HREC-Medical.ResearchOffice@wits.ac.za
Website: www.wits.ac.za/research/about-our-research/ethics-and-research-integrity/

Ref: W-CBP-190919-02 19/09/2019

TO WHOM IT MAY CONCERN:

Waiver:	This certifies that the following research does not require clearance from the Human Research Ethics Committee (Medical)
Investigator:	Miss Patience Mushamiri (Student no. 779247)
Supervisor:	Prof Sue Goldstein
School:	Public Health
Project title:	The marketing of sugary food products to children on television in South Africa
Reason:	Review of information in the public domain. No human participants will be involved in the study.

Dr CB Penny

Chairperson: Human Research Ethics Committee (Medical)

Copy – HREC (Medical) Secretariat: Zanele Ndlovu, Mapula Ramaila, Josh Ndlangamandla and Rhulani Mkansi

Appendix 3 Plagiarism form