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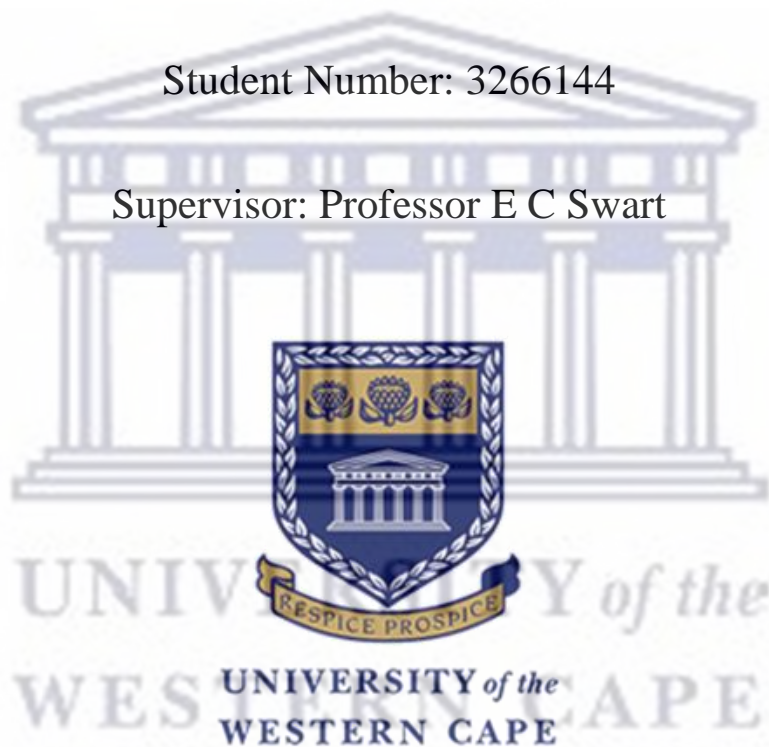
**Faculty of Community and Health Sciences**

Social Media Influencers: Do they shape the nutrition behaviours of  
adolescents?

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## **Keywords**

Adolescents

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Nutrition

Nutrition behaviours



## DECLARATION

I, Lisa Andrea Deyce, student number: 3266144, hereby declare that the dissertation titled “Social Media Influencers: Do they shape the nutrition behaviours of adolescents?” is my own independent work and that it has not been submitted for any degree or examination in any other university, and that all sources I have used or quoted have been acknowledged.



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Lisa Andrea Deyce

Date: November 2022



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## **Abstract**

**Background:** The obesity prevalence amongst South African children and adolescents is increasing rapidly every year, with a predicted prevalence of 27.14% by 2030. This increases their obesity associated health risks, such as hypertension, diabetes and heart disease. Adolescents are at a vulnerable life stage where they are easily influenced in an attempt to fit in with their peers, and social media provides a plethora of easily available trending content that adolescents can incorporate into their lives to appease their peers. With the increasing popularity of social media, social media marketing has opened up a new, more intimate way for the food and beverage industry to reach this young audience.

**Aim:** The aim of this study was to determine if the social media influencers play a role in shaping the nutrition behaviours of their adolescent followers in a low-income setting in South Africa.

**Methodology:** This study was descriptive in design and made use of multi-methods (Martha, Sousa and Mendes, 2007), consisting of an online survey and social media content analysis. The online survey was distributed amongst 18 to 19 year old first year University of the Western Cape (UWC) students. Ten social media influencers were purposefully selected for the social media content analyses. Two influencers were selected based on the online survey and an additional eight influencers were selected based on the highest number of followers to represent South African and international influencers in four categories namely, Sports, Entertainment, Food, and Health and Nutrition. All posts were collected with the use of screen grabs from the ten influencer's public Facebook and Instagram accounts. These posts were analysed using the purposefully developed South African social media codebook in Research Electronic Data Capture (REDCap). Posts were analysed for the presence of food and beverages, types of food and beverage marketing, and classifying food and beverages as

containing excessive nutrients of concern to limit (NCTL) based on the nutrient profiling model for South Africa.

**Results:** The online survey had a low response rate with 43 usable responses; it did however produce a list of 28 social media influencers. Almost two thirds of the respondents reported spending more than three hours per day on social media with WhatsApp (39.5%), Instagram (20.9%) and TikTok (18.6%) being allocated most of their time. Almost half of the respondents (44.2%) indicated they would purchase a product promoted by influencers in future; 23% have tried a diet that an influencer has promoted before, and four out of ten respondents said they would possibly follow a diet that their favourite influencer promoted online. In the social media content analysis, a total of 4209 posts were analysed, of which 1905 contained food or beverage cues. Of these, 51.1% (n=974) contained marketing. Posts containing food products and branding were only explicitly labelled as containing marketing by the social media influencers, in 3% of the posts. Amongst marketed beverages, 44.4% were alcoholic beverages. Additionally, there was a total of 58.0% of identified products that were classified as having excessive NCTL.

**Conclusion:** There is a cause for concern as food products are being marketed to followers and if these influencers have an adolescent following, they may influence adolescents' perception of these products as more acceptable, therefore increasing their consumption of it. Media literacy for adolescents as well as making the labelling of marketed posts compulsory are important steps to address these concerns. Most importantly, enforceable regulations need to be put in place to regulate the type of products that are advertised on social media.



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## Definitions

Term	Definitions
Adolescents/ adolescent groups	People between the ages of 10 and 19 (WHO, 2018).
Art & Design	Posts containing images/ information on the class of objects subject to aesthetic criteria and sketches, plans and structures of a work of art and the materials associated with art and design (Oxfordlearnersdictionaries.com, 2021)a.
Auditory stimuli	A stimulus capable of eliciting auditory sensation; in this case audio or text describing the sound of the beverage e.g. fizzing (Dictionary.apa.org, 2021)a.
Beauty & fashion	Posts containing images or information about products that enhance ones physical appearance, such as skincare, hair care, make-up, clothing, shoes, or accessories (On-Demand, 2018).
Beverages	Posts containing images of/ information about any potable liquid (Dictionary.com, 2021)a.
Cars & Motorcycles	Posts containing images/ information on vehicles (Oxfordlearnersdictionaries.com, 2021)b.
Category	The content can be grouped according to various divisions of content that is popular online, e.g. food, fashion or beauty (Dictionary.com, 2019)a.
Competition	When a brand or influencer has a contest on their social media page where their followers have to enter by either engaging with the post or following a link where they would enter their details on a secondary platform (Dictionary.com, 2019)b.
Content	The information posted online on the social media platforms (Alleydog.com, 2019).
DIY & crafts	Posts containing instructions on how to make an item yourself, by hand, that would typically be bought in a store. E.g. building a desk (Merriam-

	webster.com, 2021)c.
Education	Posts about a discipline that is concerned with methods of teaching and learning. These posts aim to educate the public on any topic and are usually supported by facts and/ or sources (Roland Lee Swink and Chambliss, 2018).
Entertainment	Posts containing humour, comedy, film content, book content or music with the goal of entertaining people (Oxfordlearnersdictionaries.com, 2021)c.
Emotional story telling	The post tells a story that combines the elements of integrated storytelling, learning science and emotional impact to deliver compelling stories online The story could be a sad one or a happy one and would evoke a sad or happy emotional response in the follower (DeLane, 2018).
Emotive language	The post uses certain word choices are made to evoke an emotional response. E.g. “I am ecstatic about this new product”, it could evoke excitement in the follower and encourage them to try the product (Twinkl.co.za, 2021).
External recognition of quality	The brand or product has won awards from external quality assurance auditors (Gray, 2019).
Followers	Social media users who choose to see all of another user's posts in their content feed (Big Commerce, 2021).
Food	Posts containing images of/ information about substances consisting essentially of protein, carbohydrate, fat, and other nutrients. This includes food items and/ or nutritional supplements and products (Britannica, 2019).
Food insecurity	The disruption of food intake or eating patterns because of lack of money or other resources (Nord et al, 2005).
Food Marketing	A series of marketing events (in this context, online) that take place between a food company and a consumer (Gourmet ads, 2020).
Gaming	Posts containing images or information on playing electronic games and

	the devices used to play these games, such as consoles, computers, mobile phones or another medium (Techopedia.com, 2019).
Gardening	Posts containing images or information on the laying out and care of a plot of ground devoted partially or wholly to the growing of plants such as flowers, herbs, or vegetables and gardening supplies (Britannica.com, 2020).
Gifted	The food/ beverage item in the post was given to the influencer by the brand/ company/ third party company, as a gift (Merriam-webster.com/, 2021)b.
Gustatory stimuli	Audio or text describing the taste of the product e.g. refreshing, thirst quenching (Tafesse and Wien, 2017).
Health, fitness & nutrition	Posts containing images or information on exercise, healthy habits that improve the condition of the mind and body, health related topics that don't fall under the food and nutrition category (Optimum Health Solutions, 2015).
Humour	Posts that use amusing language, such as jokes or skits where people acting out comical scenarios to evoke amusement/ laughter in the audience (Merriam-webster.com, 2021)a.
Influencer's own brand	The influencer is promoting their brand/ product they've developed (Schwarz, 2021).
Kids & parenting	Posts containing images or information on methods and techniques for rearing children, or posts that are aimed at activities for kids (Cambridge Dictionary, 2019).
Lifestyle	Posts documenting the habits, tastes and mode of living of the influencer. These include everyday activities e.g. going shopping, going out to eat, and visiting new places (Social Media Today, 2018).
Media Type	The content posted on online in the form of images, video, texts or audio (Vocabulary.com, 2019).

Nature & outdoors	Posts containing images or information on mountains, trees, rivers and other open air areas and outdoor activities such as hiking (Merriam-webster.com, 2019).
Not sponsored	The food/ beverage item brand/ company did not pay the influencer to post about and promote their product (Blog.loomly.com, 2021).
Nutrition behaviours	The sum of all planned, spontaneous, or habitual actions of individuals or social groups to procure, prepare, and consume food as well as those actions related to storage and clearance (Max Rubner-Institut, 2010).
Nutrition information	Any knowledge shared that is related to food and nourishment, e.g. diets, super foods, weight loss information, information focusing on certain nutrients, recipes, food and beverage products (Law Insider, 2021).
Photography	Images created by capturing light with a camera. These images are professionally captured. These posts also contain information about equipment and techniques used in photography (PT Editor, 2019).
Physical actions	The brand associates themselves with certain physical activities that require bodily movements and the post makes reference to these activities. E.g. the brand is associated with sporting events and the post contains someone partaking in sport before/ after/ during consuming the product (Euro.who.int, 2021).
Post by brand/ company	The media posted was posted by the producer of the product or service and contains the brand's product/ logo in the post (Statista, 2022).
Product/ service benefits	The product or service is marketed as being beneficial for the consumer's needs, wants and desires e.g. a consumer lacks energy, if they consume beverage x it will give them energy to perform the tasks for the rest of the day with ease (Cleverism, 2017).
Promotional campaigns	A campaign to encourage the sale of a product. E.g. When a brand or influencer sells a product with a discount code; 10% off or buy 1 get 1 free (Collinsdictionary.com, 2021).

Sales	When a brand or influencer sells a product at a reduced price (Merriam-webster.com, 2020).
Social media engagement	The public shares, likes and comments for an online business'(in this context, social media influencer's) social media efforts (Big Commerce, 2020).
Social Media Influencer	Individuals who have a large following on online social media platforms and are often trusted with the information they post online (De Veirman et al, 2017).
Social Media Platform	A group of internet based websites that allow the creation and exchange of user generated content (Antheunis et al, 2013)
Sponsored posts	Sponsored posts are an easy way to get more people to see an individual's or businesses posts in their news feed. When promoting a post, it will be shown in the News Feeds of more of the people who like the influencer or business page than they would reach normally (Advertisemint, 2019).
Sugar sweetened beverages	Beverages that are sweetened with various forms of added sugars, e.g. corn syrup, fructose, etc (Centers for Disease Control and Prevention, 2018).
Technology	Posts containing images or information about the latest electronic and digital devices and equipment for day to day use or for use by niche industries (Yourdictionary.com, 2018).
Travel	Posts containing images or information on going from one place to another, either locally and internationally via various modes of transport (Dictionary.com, 2021)b.
Ultra processed foods	Foods that go through multiple processes, such as milling and extrusion and contain highly manipulated ingredients (Heart and Stroke Foundation of Canada, 2018).
Visual stimuli	An image of the product that triggers a receptor response in the retina e.g. a carbonated beverage (Dictionary.apa.org, 2021)b.

## Acronyms and abbreviations

NCTL	Nutrients of concern to limit
REDCap	Research Electronic Data Capture
UWC	University of the Western Cape
HSRC	Human Sciences Research Council
IBM	International Business Machines
SPSS	Statistical Package for Social Sciences



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## **CHAPTER 1: INTRODUCTION**

This chapter first describes the use of social media and social media influencers by the food and beverage industry to market their products. Secondly, this chapter describes adolescent social media use and how they are targeted through social media marketing, as well as the lack of regulations when it comes to the marketing of food to adolescents. Thirdly, the health issues adolescents' face is also addressed in this chapter, as well as how this study aimed to fill the gap in the research of social media food marketing by influencers to adolescents in South Africa.

### **1.1 Background**

Social media platforms have increased in popularity in all sectors in recent years (Assaf et al., 2016). Adolescent social media use has become increasingly common, with 78% of 10 to 13 year olds having a social media account, despite most of these platforms having a minimum age requirement of at least 13 years to create a profile (Coughlan, 2016). These platforms have popular content creators, referred to as social media influencers. Influencers often set trends online, and due to the nature of adolescent behaviour, they often follow socially accepted trends (Bauer et al., 2004). From previous research we know that social media influencers content relating to food and beverage product promotion has an influence on eating patterns and food intake of children aged 8-12 years old (Coates, et al., 2019a). Social media influencers often have brand deals or partnerships with companies to promote their products (Freberg, et al., 2010). This is known as a form of social media marketing (Saravanakumar and Suganthalakshmi, 2012).

There is research to show that food and beverage companies already use social media to promote their products, and collect information on social media users to target advertisements of their products to a specific audience (Freeman, et al., 2014). In South Africa, the marketing

of food and non-alcoholic beverages are self-regulated by the food and beverage industry in accordance with the pledge to market healthy dietary choices and lifestyles to minors up until the age of twelve years old (Consumer Goods Council of South Africa, 2009). There are currently no regulations with regard to marketing to adolescents. The World Health Organisation (WHO), (2016) argues that there are insufficient regulations to protect minors from social media marketing strategies. According to Raneri and Wertheim-Heck (2019) nutrition information is very easily available online from a variety of sources and if adolescents trust social media influencers they may trust the nutrition information they post and promote.

Adolescents are targeted through social media marketing by the food and beverage industry using social media influencers; some of which are part of the food and beverage industry themselves. Studies conducted by Kent, et al. (2018) and Fleming-Milici and Harris (2020) found that over 70% of adolescents in the United States are exposed to food marketing on social media. Food marketing posts targeted to the adolescent age group is typically more interactive, where followers are encouraged to post pictures of themselves with the products and tag the brand in the posts (Fredman, et al., 2014). There is a gap in the research to determine if adolescents actively look to social media influencers for nutritional information and if the information they provide (if any) is accurate, and has any influence on adolescent nutrition behaviours, which this study aimed to discover. These findings can inform nutrition and health promotion interventions aimed at adolescents as well as inform policy and/or regulations to improve the food and nutrition situation of adolescents in South Africa.

## **1.2 Problem statement**

Adolescents, particularly in poorer areas, are facing food insecurity challenges which range from under-nutrition and hunger to micronutrient malnutrition and overnutrition, leading to obesity (Christian and Smith, 2018). Adolescent obesity is of particular concern, given the

health risks associated with it and increasing prevalence. According to the South African Demographic and Health Survey 2003 (Department of Health, Medical Research Council, OrcMacro, 2007), in the age group of 15 to 19 years old, 8% of females and 1% of males were classified as obese. These numbers have increased, according to the South African Demographic and Health Survey 2016 (National Department of Health et al., 2019), to 15.8% of females and 6.1% of males; which can be interpreted as very high and moderate obesity prevalence respectively (Lobstein & Jewell, 2021). Obesity rates amongst all children are increasing at an alarming rate. By 2030, South Africa is predicted to have an obesity prevalence of 27.14% among 10-19 year olds (Lobstein & Brinsden, 2019).

Adolescents dietary habits are influenced by their food environment, which has become more obesogenic with the increased availability of ultra-processed foods and marketing of these unhealthy foods (WHO, 2016). Adolescents are at a vulnerable stage of their lives where their behaviours, including dietary habits, are easily influenced in order for them to fit in with their peers (Stead et al., 2011). The marketing of ultra-processed foods on social media contributes to the obesity problem adolescents face.

Adolescents often view content posted by social media influencers online, some of which is food marketing that is known to be a contributing factor to unhealthy eating habits (Boyland et al., 2016; Van Dam & Van Reijmersdal, 2019). Van Reijmersdal et al. (2017) found that adolescents were not always aware of marketing in the content they consumed, although when instructed to pay close attention to brand marketing in the content, they displayed an understanding of the persuasiveness of it.

### **1.3 Aim and objectives**

#### **1.3.1 Aim of the study**

The aim of this study was to determine if social media influencers play a role in shaping the nutrition behaviours of their adolescent followers in a low-income setting in South Africa.

#### **1.3.2 Research objectives**

The objectives of this study were:

- To assess the nutrition related social media engagement patterns of adolescents.
- To determine if there is a difference in engagement by adolescents with promoted posts and non-promoted posts.
- To assess the nutrition related messaging by social media influencers.

### **1.4 Conclusion**

This chapter details background information on social media, social media influencers and social media marketing in the context of adolescent health. This chapter contains the study aim and objectives.



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## **CHAPTER 2: REVIEW OF RELATED LITERATURE AND RESEARCH**

### **2.1 Introduction**

This chapter describes the literature related to the development that takes place during adolescence, the health challenges adolescents face and the role of the adolescents have with family and peers and how it affects their lifestyle behaviours. This chapter includes literature that explains the multitude of factors that influence adolescent dietary behaviours, as well as adolescent social media use. Lastly, this chapter describes the literature on nutrition information on social media and previous studies that have similar themes to this study.

### **2.2 Adolescent health**

Adolescence, derived from the Latin word ‘adolescere’ (Kapur, S., 2015), can be defined as the period of life from ages 10 to 19 years, and falls between the childhood phase and the adult phase of the life cycle (WHO, 2018). Rapid growth takes place during the adolescent phase, both physically and cognitively. During their cognitive growth, they develop more complex thinking patterns and are able to question and analyse authority and society more extensively (University of Rochester Medical Center, 2019). Behavioural patterns are also established during this phase. Physical activity, substance use and dietary behaviours affects their growth during the adolescent stage, as well as forming the foundation of their health and behaviour for the adulthood stage of life (Astone et al., 2014; WHO, 2018; HHS, 2019), thus poor lifestyle habits during the adolescent stage could result in adolescent and adult obesity as well as non-communicable diseases (NCDs) (Van der Bend et al., 2022).

According to WHO (2017), approximately three thousand adolescents die every day from causes related to NCDs, accidental injuries and intentional injuries. Cardiovascular disease, cancers, diabetes and chronic respiratory diseases all contribute to early death in adulthood.

The risk factors for the development of NCDs are attributed to unhealthy eating habits, tobacco use, excessive alcohol use and low physical activity, all of which can be addressed during adolescents (WHO, 2013). Unhealthy eating habits as well as alcohol use has been linked to decreased cognitive function in adolescents (Lees et al., 2020). The global economy is faced with a significant burden from the effects NDCs have on overall health and productivity, with an estimated loss of USD \$7 trillion between 2011 and 2025 from low and middle income countries (Bloom et al., 2012). The World Economic Forum (2015) placed emphasis on the importance of NCD prevention and health promotion throughout various life stages, including adolescence, stating that it would result in economic returns.

Adolescents also face micronutrient deficiencies, the most common one being iron deficiency (García López et al., 2011). The consequences of iron deficiency in adolescence include a decreased immune function, impaired cognitive function and overall undermining of optimal growth (Corley et al., 2015). Iron deficiency is more prevalent in lower social development index countries and has a higher prevalence in female adolescents than male adolescents. Iodine deficiency is also more prevalent in these populations. Vitamins A, B, C D, calcium and zinc deficiencies have a low prevalence in adolescents, globally (Christian and Smith, 2018). Overall micronutrient deficiency, whether moderate or severe, severely affects various bodily functions (Ahmed, Hossain and Sanin, 2012).

Ensuring adolescents develop healthy eating habits is essential to their current and future health status (Black et al., 2013). The WHO (2018) states that reducing the marketing of foods high in saturated fats, sugar and salt is especially important in achieving this goal, along with increasing access to healthy foods. According to a study conducted by Al Hourani et al., (2021) the coronavirus disease 2019 (COVID-19) pandemic lockdown regulations that



were enforced by health officials, affected adolescent's lifestyles due to an increase in the amount of food consumed and a decrease in physical activity during these periods. According to a framework proposed by Christian and Smith (2018), another factor that needs to be assessed when addressing adolescent under nutrition, is cultural and gender norms where girls are expected to eat last or eat smaller portions than boys. This, together with pregnancy during adolescence, results in girls being affected by under nutrition disproportionately to boys.

According to the South Africa Demographic and Health Survey (2016), in the age group of 15 to 24 years old, 5.8% of females and 15.8% of males were classified as underweight and 39.9% of females and 11.2% of males were classified as overweight or obese according to their BMI. In the National Youth Risk Behaviour Survey (2011), the perception of bodyweight was surveyed amongst school going adolescents, where it was found that 26% of learners described themselves as underweight, 12.6% as overweight, where more females (16.7%) perceived themselves to be overweight than males (8.2%) (Ellahebokus et al., 2011). The perception of having an undesirable bodyweight can lead to unhealthy dieting behaviours in females, regardless of their weight status (Markey and Markey, 2005). Obesity rates amongst all children are increasing at an alarming rate. By 2030, South Africa is predicted to have an obesity prevalence of 27.14% among 10-19 year olds (Lobstein & Brinsden, 2019). An individual's nutritional status can affect the onset and duration of puberty, the effects of which may be passed down from parent to child. An example of this is when a mother is obese before conception; it could result in the early onset of puberty in the child (Brix et al., 2019).

### **2.3 Adolescent relationships and lifestyle behaviours**

During this stage of life, adolescents are typically less dependent on their parents and explore their independence more. Adolescents are establishing their identities and are learning to make decisions on their own (University of Rochester Medical Center, 2019). They may distance themselves from their parents and gravitate more towards their peers for guidance (Bauer et al., 2014). Parent-child relationships during early and middle adolescence can become strained as adolescent's report that their parents are less supportive during this period leading to an increase in conflict (Branje, 2018).

The relationships adolescents have with their peers are of extreme importance, socially and emotionally, as the way they are perceived by others is of importance to them to gain acceptance. Additionally, adolescents report that their peers understand them, help them explore their identities and share the same values and interests (University of Rochester Medical Center, 2019). Their attachment to their peers can affect their decision making skills and can influence their food choices and other lifestyle habits (Stead et al., 2011). Peer relationships could have positive effects where they are encouraged to perform well academically or participate in healthy habits or negatively where they may be encouraged to partake in substance use (Steinberg and Morris, 2001). Adolescents want to fit in, and this leads them to follow the behavioural patterns that are deemed normal by their peers. These behaviours can be positive or negative ones. Dapretto et al., (2016) found that images with a high number of likes by adolescent peers, incited adolescents to like the same images, rather than the content of the images, regardless of the type of behaviour they exhibited. Similarly, Buckley & Chapman (2015), reported that adolescents who engage in positive behaviours, have a positive influence on their peer groups and demonstrate a supportive role in the lives of their peers, steering them away from negative behaviours.

Dietary trends have changed in the last decades due to easier access to fast food, ultra processed foods and sugar sweetened beverages (Moreno et al., 2010). Research has shown that adolescent dietary habits have not been ideal, as it had been reported that adolescents often skip breakfast and their snacking habits and soft drink beverage consumption have increased (Moreno et al., 2010) and these unhealthy dietary habits have not improved in recent years (van der Bend et al., 2022).

#### **2.4 Theoretical frameworks**

Theoretical frameworks can be used to better understand all aspects involved in an adolescent's dietary behaviour (Story et al., 2002). Story et al., (2002) uses Bronfenbrenner's ecological model for perspective in their proposed four interlinked level theoretical framework. Bronfenbrenner's model focuses on the environmental influences that affect behaviour. There are four levels; microsystems, mesosystems, exosystems and macrosystems. The microsystems involve groups that are closest to the individual, such as peers and family. The mesosystems are the relationships of the microsystems that are interrelated. Exosystems include the media and community influences and the macrosystems include economic, political and cultural systems (Bronfenbrenner, 1979).

The four levels of the theoretical framework proposed by Story et al. (2002) are intrapersonal factors, interpersonal factors, community settings and societal influences. Intrapersonal factors include; psychological factors which consist of food preferences and beliefs, biological factors which consist of meal patterns and weight control behaviours, and lifestyle factors which include the cost and convenience of the food choice. Interpersonal factors are determined by the adolescent's social environments. This is where their perceived norms

surrounding food will be influenced by peers and family. The community setting determines their accessibility to food. The types of food available at their schools, shopping malls, convenience stores and fast food outlets determine their food choices. The societal influences include food policies and regulations, mass media and advertising. These four levels are interlinked and each level contributes to the food choices adolescents make (Story et al., 2002). By using this framework, we may have a better understanding of how food marketing by social media influencers could shape adolescent nutrition behaviours.

A social ecological model describing how adolescent dietary behaviour is affected by food marketing on social media was created to summarise the findings from a study by van der Bend et al., (2022). In the individual level, when an adolescent is exposed to social media marketing of food and beverages, there may be an implicit response where adolescents engage with this type of content but are not consciously aware that the product is being marketed to them through influencer posts or entertainment content (see Figure 1). There is also the explicit response where adolescents seek out food and beverage companies on social media to follow their accounts and interact with their content. The social environment is the level where an adolescent's dietary habits may be influenced by their peers, family or celebrities and influencers they follow on social media, in their attempt to fit in and be socially accepted. The physical environment level is where various factors influencing their access to food, as well as their knowledge on healthy eating will play a role in their dietary habits. The country level affects their dietary habits based on food policies and any food marketing regulations the country they live in may have implemented. Lastly, the social media environment includes factors such as the engagement on food and beverage posts, if their peers and favourite influencers are posting food and beverage content and if the posts

containing food and beverage marketing is targeted to the adolescent age group (Van der Bend et al., 2022).

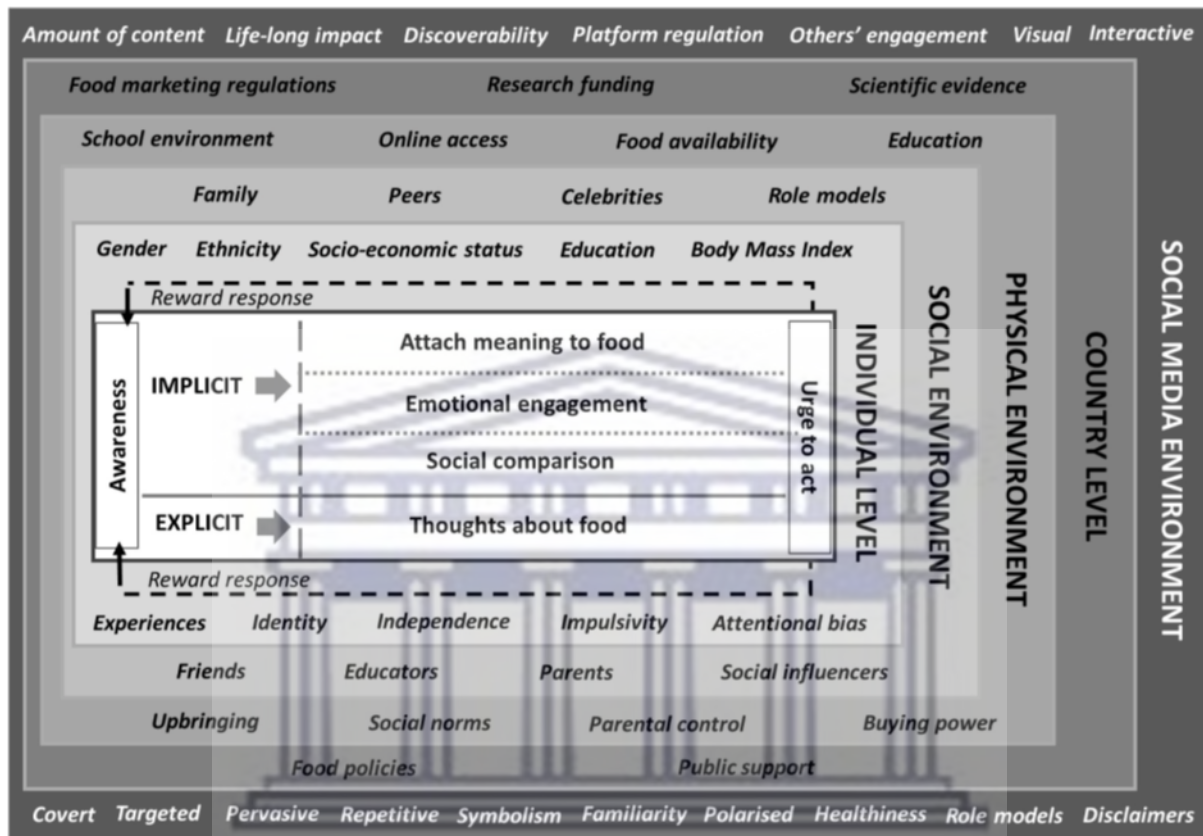


Figure 1: Social Ecological model describing how social media food marketing (SMFM) may impact adolescents' dietary behaviours on different levels (i.e. on individual, social, physical environment, country and social media environment levels) (van der Bend et al., 2022, p6 ).

The older research, as described above by Story et al., (2002) and newer research as described by Van der Bend et al., (2022), demonstrate that the foundational factors influencing adolescent dietary habits have not changed throughout years of research. However, it is clear that the marketing of unhealthy food and beverage products whether it is through traditional or digital marketing, needs to be regulated to ensure that adolescents are

not targeting and persuaded to consume unhealthy foods and beverages (Van der Bend et al., 2022).

## **2.5 Social media and adolescents**

Social media, according to Antheunis et al. (2013), is a group of internet based websites that allow the creation and exchange of user generated content, which has increased in popularity over the last few years. Internet and social media usage amongst adolescents and young adults have become a normal part of life, with 90% of 13-17 year olds having social media accounts (American Academy of Child and Adolescent Psychiatry, 2018) and 78% of 10 to 13 year olds having a social media account, despite these platforms having a minimum age requirement of at least 13 years to create a profile (Coughlan, 2016). On average, adolescents from the age of 16 spend over 3 hours per day on social media (Kemp, 2021). Some of the most popular social media platforms, worldwide, include Facebook, YouTube, WhatsApp, Twitter, Instagram, WeChat and TikTok (Dixon, 2022).

Social media consists of platforms where people share information ranging from what they have done for the day, to doing day-to-day tasks, such as online shopping. Social media has many useful purposes, and is able to spread information, globally, within a matter of minutes (Siddiqui and Singh, 2016). Social media can help adolescents, and other age groups, stay in contact with their friends and family that they may not see often, as well as finding communities of people who share their interests. However, there are downsides to adolescent social media use, such as being exposed to dangerous and inappropriate content or too much time spent on social media interfering with everyday activities (American Academy of Child and Adolescent Psychiatry, 2018). In a study conducted by Whiting & Williams (2013), it was reported that one of the uses of social media is “information seeking”; where individuals search for information on products, businesses, peers and for self-education purposes. To an

inexperienced individual, it can be difficult to differentiate between what information is correct and what is not (Tobey and Manore, 2014).

Social media influencers are individuals who have a large following online and are often trusted with the information they post online (De Veirman et al., 2017). Influencers are recognised as having persuasive power with their followers; therefore technology has been developed for brands to identify influencers who would be most suitable to partner with to market their products (Freberg et al., 2011). Adolescents often view content posted by social media influencers on various social media platforms. Common content categories include fashion, lifestyle, travel and food. Food and beverage marketing on food influencer's posts are to be expected; however, food and beverage posts are also common in other content categories and may also be marketed posts, which is known to be a contributing factor in unhealthy eating habits (Boyland et al., 2016; Van Dam & Van Reijmersdal, 2019). Van Reijmersdal et al. (2017) found that adolescents were not always aware of the marketing in the content they consumed, although when they did pay close attention to brand marketing in the content, they displayed an understanding of the persuasiveness of it.

Social media use among adolescents has become an integral part of their lives as the current generation of adolescents have grown up surrounded by and reliant on technology during a time when technological advancements are being made at a rapid pace (Griffiths and Kuss, 2017). Considering that there is an increasing amount of research indicating that excessive use of social media could lead to symptoms which are synonymous with substance addiction, the amount of time adolescents spend on social media is concerning (Andreassen, 2015). According to Griffiths and Kuss (2017), some individuals could use social media to alter their moods and use it as a coping mechanism in their lives, resulting in an increased amount of

time spent on social media when their tolerance levels to certain social media activities decreases. As seen in substance addictions, the cessation of social media use in addicted individuals will result in withdrawal symptoms (Griffiths and Kuss, 2017).

Ensuring adolescent social media use is not excessive could be challenging as one of the reasons they tend to spend a significant amount of time on social media is because of fear of missing out (FOMO) (Scott and Woods, 2018). FOMO can be defined as feeling concerned that others may be enjoying themselves without you (Merriam-webster.com, 2013). Research has shown that FOMO in adolescence can cause them to obsessively check their cell phones and social media accounts to the extent that it can develop into a social media or cell phone addiction (Griffiths and Kuss, 2017), as well as shorter sleep durations due to spending long periods of time on social media at night (Scott and Woods, 2018).

## **2.6 Nutrition behaviour and social media**

According to Carotte et al. (2015) it was found that adolescent girls were the largest group of consumers of health and fitness content online, which included detox and diet pages. The social media pages observed in the study by Carotte et al. (2015) included those aimed at young men, indicating a potential for adolescent boys to consume this type of content as well. It was further indicated that adolescents with eating disorders and/ or mood disorders were more likely to consume this type of content, which could worsen their conditions. Seventy per cent of participants in this study who misused diet or detox products, also reported consuming 'health and fitness' content on social media in the same time frame (Carotte et al., 2015).

Nutrition trends have become popular on social media in recent years in the form of food challenges. These challenges consist of individuals filming themselves consuming a food or



beverage product and posting it online in order to go viral. Many of these challenges can be harmful, such as the dry scooping challenge where people were encouraged to consume a scoop of dry protein powder, without diluting it. This resulted in health officials issuing a warning to not participate in this challenge as side effects could lead to heart palpitations, lung infections and heart attacks even in young individuals (Garritano, 2022).

## **2.7 Social media marketing**

Food and beverage companies use social media and influencers to market their, often unhealthy product. Research has shown that large corporations make greater profits through digital marketing than traditional marketing (Microsoft Advertising Global Insights, 2013). The marketing of unhealthy foods to children is known to lead to an increase in the consumption of these products. A study conducted by Kent et al., (2018) found that 72% of 7-16 year olds were exposed to food marketing on social media, with 44% of these food products being unhealthy. A study conducted by Tatlow-Golden and Garde, (2020) found that food marketing practices have become a child's rights concern as child directed marketing infringes on a child's right to privacy, as well as their right to freedom of exploitation as these marketing practices often make use of personal data to target children and manipulative tactics to entice them to consume their products.

The food and beverage industry use various marketing techniques to entice their consumers. Together with social media influencers, the food and beverage industry has made use of social media posts where the product is not the main focus of the post, but rather as part of everyday life or celebratory moments (Qutteina et al., 2019). These products are typically unhealthy (Kidd, et al., 2020) and often include alcohol, which could increase consumption in adolescents (Finan et al., 2020). Influencers in the United States are required to label their social media posts that contain marketing as such (Federal Trade Commission, 2019),

however, this is not a requirement in South Africa. Coates et al. (2019)b and Qutteina et al. (2019) found that the majority of influencer posts containing food branding did not contain a marketing disclosure by the influencer. Yang (2022) suggests that the reason for this is because followers of these influencers have been shown to be apprehensive of brands in sponsored posts. Coates et al., (2019)b found that 29.3% of influencer posts contain branding, but only 0.6% of posts are labelled as sponsored. Other techniques used to promote unhealthy food and beverage products include using terms and packaging colours that make the product appear to be healthier than they are, such as using the colour green or the term ‘super food’ (MacGregor et al., 2021). This technique is known as health washing and is deceptive towards the consumer who may view unhealthy products in a good light (Mialon, Crosbie and Sacks, 2020 and Global Health Advocacy Incubator, 2021).

Social media can be used to encourage both unhealthy and healthy lifestyle and dietary habits in adolescents. Social media influencers could be used to promote healthy lifestyles, although this area of research has yet to be explored (Folkford et al., 2020). It is suggested that adolescents should be educated on identifying marketing strategies online in order to be “media-literate” consumers (Dunlop, et al., 2016 and Naderer, 2021). In conclusion, those with special interests in adolescent health, such as health care workers, should become media-literate as well, to ensure they are able to guide adolescents appropriately when making health decisions. Most importantly, regulations need to be formulated to ensure that children, including adolescents are protected from being exploited by the food and beverage industry and these regulations need to be enforceable by law (Kent et al., 2019).

## **2.8 Conclusion**

The theoretical frameworks that explain factors influencing adolescent dietary habits identify several interrelated factors on individual, social environment, physical environment and the global level. Social media can impact on all of these levels. Adolescents’ dietary habits are

particularly susceptible to external influences given their particular developmental pathways. Social media has emerged as impactful among adolescents although there is a paucity of research from South Africa on the influence of social media influencers on adolescent nutrition behaviours, which this study will aim to discover.



## **CHAPTER 3: METHODOLOGY**

### **3.1 Introduction**

This chapter describes the research methodology used to achieve the study's aim and objectives, which were to assess if adolescents engage with nutrition related social media content and if it shape their nutrition behaviours. This chapter describes the study design and the sampling of the study, as well as detailing the development of the online survey, the codebook, data collection and data analysis, as well as the study's ethical considerations and data management plan used.

### **3.2 Study Design**

The study design is a descriptive survey design, as these types of studies are used for research that is not yet clearly understood. This will provide insight and gather information to familiarise with the basic details surrounding the influence social media influencer's have on adolescent nutrition behaviours (Sacred Heart University Library, 2019). There were two parts to this multimethod study. Firstly, a quantitative method consisting of an online survey among adolescents. This assisted in determining part of the sample to be used in the second part of the study. The second part consisted of social media content analysis of ten social media influencers. Two of the influencers were selected based on the responses received from the online survey. This allowed the researcher to understand the food related milieu adolescents will engage with should they follow these social media influencers and the nutritional quality of products they may be exposed to through social media influencers.

### **3.3 Sampling**

The population for the survey were 18-19 year old male and female first year students at the University of the Western Cape. This study population was chosen purposefully to avoid the risk of children <18 years participating without parental consent. Using the target of 4500

new entry first year students for 2021 with an anticipated 10% response rate, the sample size for this study had been calculated to be 450 participants. Permission was received from the Registrar to distribute the survey among the total population of first year students. The exclusion criteria for the survey were any students who are under the age of 18 and above the age of 19. Under 18 year old would require parental consent to complete the survey. Students above the age of 19 years old no longer fall into the adolescent age category and could therefore not be included in the survey sample.

The social media platforms chosen for the second part of this study were Facebook and Instagram, as these were the most used social media platforms in South Africa at the time of the study (Kemp, 2021). This excluded messaging and streaming platforms. According to Kemp (2021), 95.4% of South African internet users over the age of 15 actively engaged with social networks in January 2021 and spent an average of 3 hours and 32 minutes on social media per day. Of these users, 86.7% made use of Facebook and 70.2% made use of Instagram. There is currently no data available on the social media usage of younger adolescents. Children under the age of 13 years old are legally not permitted to have social media profiles per the terms of use for both Facebook and Instagram. According to the South African constitution, a child is anyone below the age of 18 years old, and according to the World Health Organisation, an adolescent is between the ages of 10 to 19 years old, therefore the adolescent age group of 13 to 19 years old was chosen as the reference age group for this study.

Ten social media influencers were included in the social media content analysis part of the study. Two of the influencers were selected from the social media influencers identified by the survey participants. The remaining eight influencers were purposefully chosen to represent international and South African social media influencers within different categories. The selected influencers can be divided into two groups; celebrities who are famous in the

entertainment or sport industry, and social media influencers who are well known for the content that they post on their social media platforms. Six of the ten selected influencers are South African and four are international influencers. Eight influencers were chosen for having the highest number of followers on the two chosen social media platforms within four specific content categories. These categories are; Sports, Entertainment, Food, and Health and Nutrition. The most followed international influencer, and most followed South African influencer were selected for each category. The two influencers chosen from the survey fell into the South African entertainment industry, and the South African beauty and fashion scene. The popularity of the selected influencers ranged from 19 300 – 5 500 000 followers for local influencers and between 812 000 – 417 000 000 followers for international influencers.

### **3.4 Study methods**

The online survey (see Appendix 1) was developed to gather information about adolescent social media use as well as to select the sample for the social media content analysis. The socio-economic section of the survey was adapted from the MacArthur Scale of Subjective Social Status (University, Stanford and California 94305, n.d.). The survey consisted of 8 sections:

1. Informed consent: The information sheet was provided and an option for the participant to agree or disagree to participate in the survey was given.
2. Demographics: This section consisted of age and gender questions.
3. Adolescent social media use: Participants stated whether or not they use social media.
4. Devices and platforms used for social media: This section consisted of questions pertaining to which social media platforms participants used, which devices they accessed these platforms from, how much time they spent on social media and whether they follow social media influencers or not.

5. Social media influencers: Participants provided names of influencers they follow as well as reasons why they follow them.
6. Types of social media content consumed: Participants listed the content categories they enjoy on social media, nutrition information they have come across on social media, whether or not they would follow nutrition advice given by influencers and any marketing they may have come across on social media.
7. Socio-economic status of adolescents: Participants were asked to rank themselves from 1 to 6, where they thought they fell in terms of socio-economic status.
8. Lucky draw: Participants could enter their email address if they wanted to enter the lucky draw.

The online student survey was distributed by the Institutional Communication Services (ICS) of the University of the Western Cape to students via their student e-mail accounts, twice. The survey could be accessed via a Google forms link where the information sheet was presented to respondents and consent had to be given before respondents could fill in the survey.

The social media activities of the ten influencers were tracked retrospectively over the period of one year; from 1 October 2020 to 30 September 2021. This time frame was adapted from similar studies (Bragg, et al., 2020 and Coates, et al., 2019).

All posts, including images, videos, text and audio (no audio posts were found in the collected data) that were posted on the ten influencers' public Facebook and Instagram platforms were collected by following the instructions provided on the Facebook's help centre page on how to take and save screengrabs from their platforms. Screengrabs were also taken for the social media interactions on each post. Interactions refer to the likes, reactions,

comments, shares and views on a social media post. These screenshots were named according to a standardised numbering system and saved to SharePoint.

Three data captureurs with a nutrition-related tertiary degree entered the data. In order to improve inter-coder reliability all posts for the first month from each influencer (October 2020) were entered by at least two data captureurs. Any discrepancies in data entry were discussed, and when disagreements arose, these were discussed with a third researcher. The remaining 11 months of data were then divided between the three data captureurs and were captured using a questionnaire developed from the codebook in Research Electronic Data Capture (REDCap), version 11.1.17.

### **3.5 Codebook Development**

A South African social media codebook (see Appendix 2) was created in REDCap, following a number of steps:

- 1) A literature review was conducted to identify existing questionnaires that had been developed for similar purposes; and suitable questions to include in the codebook for this study were identified from them (Coates et al. 2019 and Tafesse and Wien 2017).
- 2) The codebook was then adjusted based on an on-package child-directed marketing codebook developed for South Africa (Khan, 2021).
- 3) The codebook was shared with a team of South African researchers at SAMRC/Wits Centre for Health Economics and Decision Science. Based on their feedback, a number of questions were added, and additional edits made.
- 4) The codebook was shared with an international expert on child directed media; as well as a team of researchers in Columbia who were in the process of developing a



codebook for similar purposes. Changes were made to the South African Social Media Codebook based on their feedback.

- 5) The codebook was tested with a pilot study conducted by 3 independent data capturers and consisting of 190 posts before final adjustments were made to improve the codebook's usability.

The codebook consisted of seven sections (see Table 1) which allowed posts to be captured based on demographic information of the influencer, content information, engagement of followers with the posts, food and beverage cues, nutrition information contained in the posts, presence of guests, food brand marketing and any other marketing appeals.



**Table 1: Information captured for each section**

<b>Section</b>	<b>Information Captured</b>
Demographic information	Influencer name and social media platform used.
Content information	Type of media (image, video or text) and the category of the post (food, sport, etc.).
Social media engagement	The interactions on the post (likes, comments, shares, views).
Food and beverage cues and classifications	The food and beverage classification, how it was described and the type of food and beverage that was present in the post.
Containing nutrients of concern to limit (containing NCTL)	Products were classified as containing NCTL based on the nutrient composition of each product and if they exceeded the thresholds proposed for the nutrient profiling model for South Africa by Frank et al. (2021). They were also classified as containing NCTL if the product contained alcohol.
Not containing nutrients of concern to limit (non- NCTL)	Products were classified as non-NCTL if the nutrient composition was below the thresholds proposed for the nutrient profiling model for South Africa.
Described positively	If the post made mention of the product smelling/tasting good, if the influencer mentioned consuming the product regularly or if positive adjectives were used to describe the product.
Nutrition information	Health claims, and information relating to diets or recipes in the post.
Guests	The appearance of anyone else, other than the influencer, in the post. This was further categorised into celebrity and non-celebrity guests and children under 12 years of age, children 12 to 18 years of age and adults.
Food brand marketing	Brand and product names contained in the post, diet designations, sponsored posts and other marketing strategies.
-Sponsored posts	Posts that contain marketing and are clearly labelled as sponsored.
-Background marketing	Posts that contain product and brands in the background of the posts with no labelling of the post as sponsored.
Additional marketing appeals	Marketing strategies that appeal to children; referencing school, fantasy, cartoons and special effects.

### **3.6 Pilot Study**

A pilot study was conducted to test the data collection process from the various social media platforms, as well as the data entry process to ensure the codebook was suitable for a variety of posts to be analysed. Through this process, it was decided that the two most used social media platforms, Facebook and Instagram, were best suited for the study. A total of 190 posts were then collected and evaluated using the developed codebook. This allowed for further standardization of the codebook, ensuring the main study would have minimal issues.

### **3.7 Data Collection and Entry**

The online survey was distributed to students from October 2021 to December 2021. The survey was self-administered by the participants and responses were collected and stored in the Google drive linked to the Google form. Responses from the survey were analysed to determine if participants followed social media influencers and an initial list of influencers was compiled to be used in the content analysis. Responses were also analysed to determine if participants who follow social media influencers have bought products or would be willing to buy products marketed to them by influencers, or if they would follow nutrition advice provided by influencers.

Posts in the social media content analyses were classified as containing marketing if product or brand names were clearly visible in the post and carried a #ad/ #sponsored label in the caption, or the post was tagged as a sponsorship/ paid partnership at the top of the post. Posts were also classified as containing marketing if the product featured was the influencer's brand. Posts that contained product or brand names in the background of the post, but did not include the above mentioned tags were classified as having marketing, but not labelled as sponsored. In the United States, the Federal Trade Commission (2019) requires social media influencers to disclose product marketing in their posts in order to comply with laws against

deceptive advertisements. In South Africa, the Advertising Regulatory Board (2022) advises influencers to disclose whether a post is sponsored or if they were gifted the item or paid for the post. This is, however, not enforceable by law.

Posts were analysed and classified according to all the food and beverage items that were present in the post, therefore, posts containing multiple food and beverages were classified as containing NCTL if all the products exceeded the criteria, a combination, or at least one food and beverage item in the post exceeded the nutrient profiling model criteria.

The classification of products as containing NCTL was based on the nutrient composition of each product and the thresholds proposed for the nutrient profiling model for South Africa by Frank et al. (2021) (Table 2). As per the nutrient profiling model criteria, products containing any added saturated fat, added sodium, free sugar, or non-sugar sweetener were assessed and were classified as containing NCTL if they exceeded the amount.

**Table 2: Nutrient profiling model criteria**

	Sugar g/100g	Sodium mg/100g	Saturated Fat g/100g	Non-sugar Sweetener
Food Products	>10g	>400mg	>4g	Containing
Beverage Products	>5g	>100mg	>3g	Containing

For local products the UWC 2020 database on the nutrition information panel (NIP) at the back of packaged foods or the South African Medical Research Council food composition tables (SAMRC 2018) were used to identify nutrients of concern and for international products the nutrient composition was searched online. If no nutrient composition was available online, an equivalent South African product was chosen from the UWC 2020 NIP database. Posts that contained restaurant brands were classified as containing NCTL if they contained a fast food restaurant name or product. Fast food restaurants were identified as

such by the list of fast food outlets identified in South Africa compiled by Otterbach et al. (2021). Posts that contained supermarket names, with products that did not meet the nutrient profiling model criteria, were not classified as containing NCTL as supermarkets sell a variety of products. If no nutritional information was available for a product, it was classified as unknown. Given the health risks associated with alcohol consumption, particularly amongst adolescents, all alcoholic beverages were classified as containing NCTL, regardless of nutritional composition.

The influencer encouraging their followers to purchase or consume a product was noted during data analysis. If an influencer mentioned that the product should be tried, bought or gifted to someone you know, it was considered a direct encouragement. An indirect encouragement would be if the influencer mentioned that the product was tasty or if the influencer mentioned that they enjoy it or always consume or purchase it.

### **3.8 Data Analysis**

Data from the survey was extracted from Google Sheets in Excel and imported into International Business Machines (IBM) Statistical Package for Social Sciences (SPSS) statistics 27 for analysis. Once all the posts were captured in REDCap the data was exported to SPSS for analysis as well. Data cleaning was conducted and missing or invalid data was excluded. Corrections were only made after the original post was reviewed. Descriptive analyses of the data were undertaken to examine the social media use, social media influencer content consumption of and socio-economic status of survey participants. Further descriptive analyses were used to examine the interactions, food and beverage marketing cues, types of food being marketed, and the types of marketing used in social media posts by influencers.

### **3.9 Ethical considerations**

The online survey provided participants with an information sheet (see Appendix 3) explaining what the study was about and that participation was voluntary and participants could stop participating at any time. The information sheet also included that the participant would not be required to share their identities or details, unless they wished to be entered into the lucky draw and their details would not be linked to their survey responses as the lucky draw was in a separate Google form. There was also an option in the first section of the survey to decline participation.

The social media posts were collected from influencers' public platforms consisting of posts which they shared publically and therefore did not involve human subjects or required consent. However, the researcher did inform the social media influencers of the study as a courtesy. The influencers were contacted via their direct messages on Instagram, or via the email address provided in the social media profiles. The Humanities and Social Science Research Ethics Committee of the University of the Western Cape (UWC) approved the methodology and ethics of this research project (HS20/9/26) (see Appendix 4).

### **3.10 Data Management**

The data collected from the online survey is stored on a two-factor authentication password protected Google drive. The data collected from the influencer profiles is stored on a password protected SharePoint site. This site can only be accessed by researchers who have been granted access by an administrator. The data collected in the codebook is stored on the REDCap site, which is also password protected. This data will be stored on these sites for a minimum period of 5 years and both sites are housed and managed by UWC.

### **3.11 Conclusion**

This chapter extensively details the research methodology used to meet the study aim and objectives, including the development of the online survey used in part one of the study, as well as the codebook used in part two of the study.



## **CHAPTER 4: RESULTS**

### **4.1 Introduction**

This chapter describes the results from the online survey, as well as the analysis of the collected social media content. The information provided by the survey included a list of social media influencers, the type of social media content viewed on social media, and a socio-economic self-evaluation. The social media content analysis consisted of analysing posts for food and beverage cues, social media marketing, post interactions and classifying posts as containing NCTL.

### **4.2 Part 1: Survey Results**

#### **4.2.1 Demographic Information**

The survey yielded 69 responses, 37.7% of which were excluded from the survey results as they reported being older than 19 years old. Information from the remaining 43 respondents is presented below however; interpretation of this information should be done with caution. The low response rate does not allow for generalisation of the findings to first year students aged 18-19 years of age. The gender distribution for respondents was 60.9% female, 37.7% male and 1.4% non-binary whilst 19 participants (44.2%) were 18 years old and 24 participants (55.8%) were 19 years old.

#### **4.2.2 Social Media Use**

All 43 respondents made use of social media, with 100% making use of WhatsApp, 88.4% making use of YouTube and 79.1% making use of Instagram (Figure 2). The most common device used for social media access was cell phones (93%), followed by laptops (4.7%) and tablets (2.3%). The social media platforms respondents spent most of their time on were WhatsApp (39.5%), Instagram (20.9%) and TikTok (18.6%). There was a total of 60.5% of respondents who reported spending more than three hours on social media per day, with



48.8% most likely using social media throughout the day and 39.5% most likely using social media in the evening.

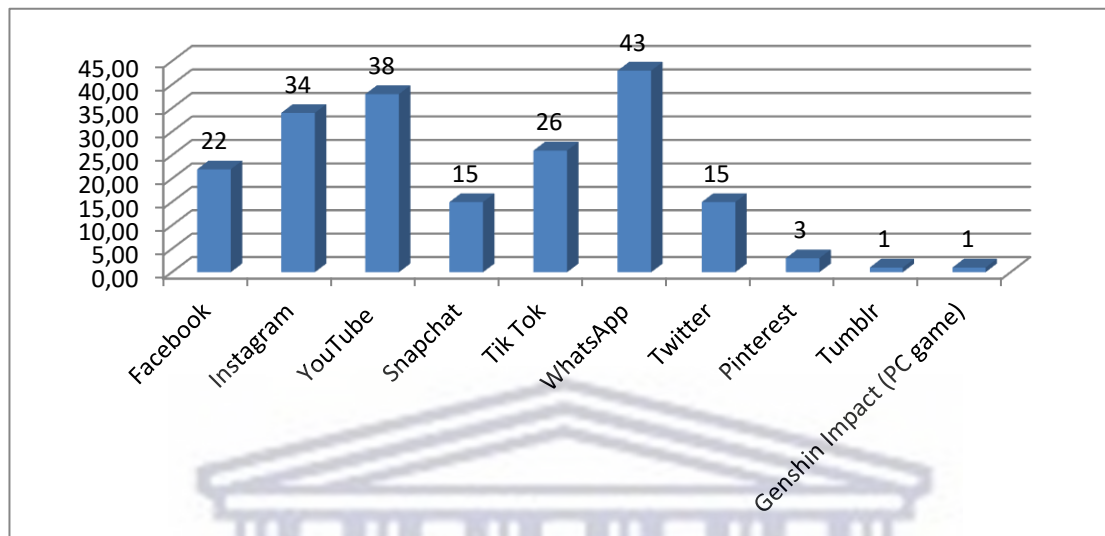


Figure 2: Social media platforms used by first year students

#### 4.2.3 Social Media Influencers and Content

Only 69.8% of respondents indicated that they follow media influencers. There was no statistical difference between the proportion of respondents who followed media influencers or not by age (Table 3). There was, however, a statistically significant difference by gender with more females following influencers

**Table 3: Proportion of respondents who follow social media influencers by age and gender**

Variable	Categories	Follow influencers			Chi-square p-value
		No n (%)	Yes n (%)	Total n (%)	
Age	18 years	5 (26.3%)	14 (73.7%)	19 (44.2%)	0.619
	19 years	8 (33.3%)	16 (66.7%)	24 (55.8%)	
	Total	13 (30.2%)	30 (69.8%)		
Gender	Male	7 (58.3%)	5 (41.7%)	12 (27.9%)	0.040
	Female	6 (20.0%)	24 (80.0%)	30 (69.8%)	
	Non-binary	0	1 (3.3%)	1 (2.3%)	
	Total	13 (30.2%)	30 (69.8%)		

The respondents listed the favourite social media influencer they follow (see Table 4) and these included national and international influencers with little overlap between influencers. When reporting on why they follow their favourite influencer, the most common reasons listed were that the influencer was a similar age range, they were perceived as motivational, honest, authentic and entertaining. The most popular content categories among the respondents were comedy (69.8%), food (67.4%) and fashion (55.8%).

**Table 4: Social media influencers followed by online survey participants**

Mischka Najar	Kay Yarms
Thickleeyonce	Paballo
Kurtis Conner	Charli D'amelio
Tamaryn Green	Kier Gaines
Halle Burns	Thabsie
Emma Chamberlain	Zodwa Wabantu
Linda Sun	Azzy Hadebe
Charlotte Dobre	Khanyisa
Andiswa Selepe	Chloe Ting
Cristiano Ronaldo	Worldofxtra
Nadia Jaftha	Mihlali Ndamase
Dj Maphorisa	Scott Garder
Mskelebogile	Simphiwe Nhlangulela
BTS	

A total of 80% of all respondents (Table 5) reported that they have previously followed nutrition, food or health advice that they had viewed on social media. There was no statistical significance in the difference between the 18 year olds and 19 year olds or by gender. Of the respondents who indicated that they follow social media influencers, slightly higher proportions have previously followed nutrition/health/dietary advice from social media, but there was also no statistically significant difference by age or gender (Table 6).

**Table 5: Proportion of respondents who previously followed nutrition/health/dietary advice from social media by age and gender**

Variable	Categories	Previously followed nutrition advice			Chi-square
		No n (%)	Yes n (%)	Total n (%)	p-value
Age	18 years	4 (21.1%)	15 (78.9%)	19 (44.2%)	0.454
	19 years	8 (33.3%)	16 (66.7%)	24 (55.8%)	
	Total	6 (20.0%)	24 (80%)		
Gender	Male	2 (16.7%)	10 (83.3%)	12 (27.9%)	0.373
	Female	10 (33.3%)	20 (66.7%)	30 (69.8%)	
	Non-binary	0	1 (3.3%)	1 (2.3%)	
	Total	12 (28.9%)	31 (72.1%)		

**Table 6: Proportion of social media influencer following respondents who previously followed nutrition/health/dietary advice from social media by age and gender**

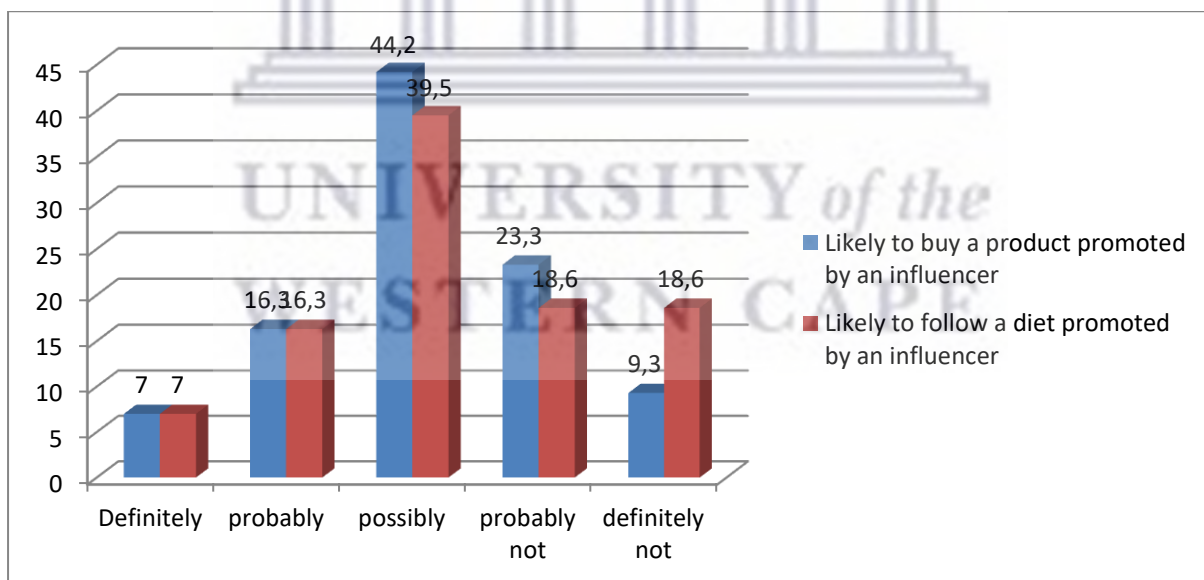
Variable	Categories	Previously followed nutrition advice			Chi-square
		No n (%)	Yes n (%)	Total n (%)	p-value
Age	18 years	4 (21.1%)	15 (78.9%)	19 (44.2%)	0.464
	19 years	8 (33.3%)	16 (66.7%)	24 (55.8%)	
	Total	6 (20.0%)	24 (80%)		
Gender	Male	0	5 (100.0%)	5 (16.7%)	0.392
	Female	6 (25.0%)	18 (75.07%)	24 (80.0%)	
	Non-binary	0	1 (4.2%)	1 (3.3%)	
	Total	6 (20.09%)	24 (80.0%)		

Four out of ten respondents (41.9%) somewhat agree to trusting the advice social media influencers give their followers whilst 34.9% were undecided (neither agree nor disagree). Only a third of respondents (37.2%) have purchased products that were promoted by an influencer (Table 7), of which 9.3% don't follow influencers. Although the 18 year olds reported to have purchased more products promoted by social media influencers, the difference was not significant; neither was the difference by gender statistically significant (Table 7).

**Table 7: Proportion of respondents who purchased a product promoted by social media influencers by age and gender.**

Variable	Categories	Purchased products promoted by influencers			Chi-square
		No n (%)	Yes n (%)	Total n (%)	p-value
Age	18 years	9 (47.4%)	10 (52.6%)	19 (44.2%)	0.454
	19 years	18 (75.0)	6 (25.0%)	24 (55.8%)	
	Total	27 (62.8%)	37.2%)		
Gender	Male	6 (50.0%)	6 (50.0%)	12 (27.9%)	0.373
	Female	20 (66.7%)	10 (33.3%)	30 (69.8%)	
	Non-binary	1 (3.3%)	0	1 (2.3%)	
	Total	27 (62.8%)	16 (37.2%)		

A total of 44.2% of respondents stated that they would possibly purchase a product promoted by influencers in future. Forty per cent (39.5%) said they would possibly follow a diet that their favourite influencer promotes. There was no statistically significant difference by age or gender of respondents.



*Figure 3: Likelihood of respondents purchasing products or following diets promoted by social media influencers*

#### 4.2.4 Nutrition Information on Social Media

The most common food products respondents come across on social media are “health” foods (super foods and supplements) (73.8%), fast food (69.0%), and smoothies (66.7%) (Figure 4), with these products appearing 1 to 3 times per online browsing session for 59.5% of respondents and more than 3 times for 38.1% of respondents. Pop-up advertisements containing nutrition related information was 1 to 3 times for 42.9% of respondents and more than 3 times for 19% of respondents, however, 45.2% of respondents say that they would probably not follow these links. There was no statistical significant difference between the age of participants and their likelihood to buy a product that they have seen on social media (p-value 0.630).

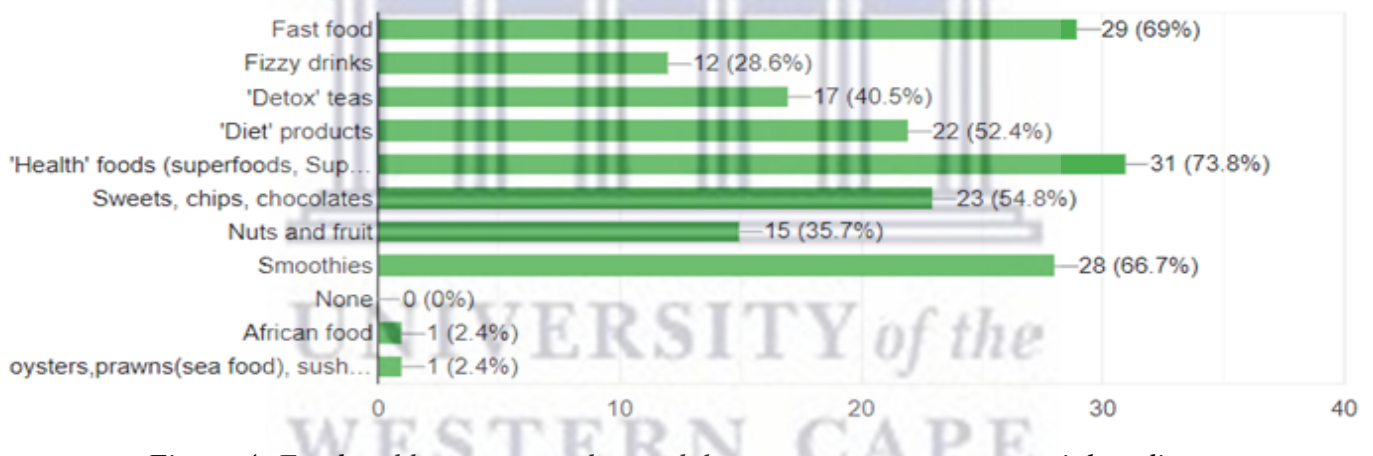


Figure 4: Food and beverage products adolescents come across on social media

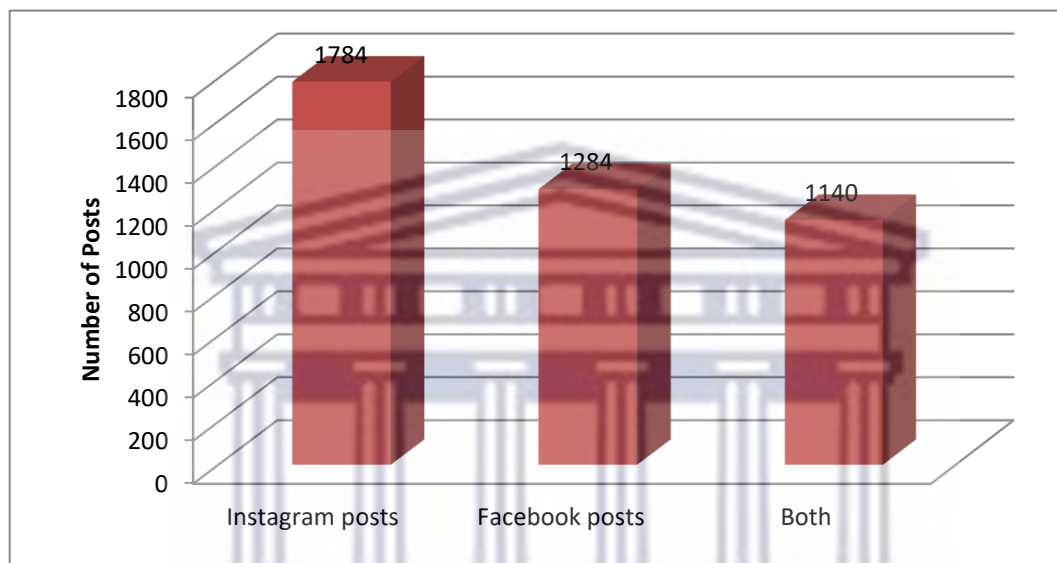
#### 4.2.5 Socio-economic Status

Respondents were to rank their socio-economic status according to an adapted MacArthur Scale of Subjective Social Status, from 1 to 6 with 1 being at the top and 6 being at the bottom in terms of money, education and jobs. A third of the participants (33.3%) ranked themselves at number 3, 31% at 4, 16.7% at 5, 9.5% at 6, 4.8% at 2 and 4.8% at 1.

## 4.3 Part 2: Social Media Content Analysis

### 4.3.1 Social Media Platforms and Posts

A total of 4209 posts were collected from the ten influencers. Forty-two per cent (42.0%) of posts were posted on Instagram only, 31.0% of posts were posted on Facebook only and 27.0% were posted on both platforms (Figure 5).



*Figure 5: Number of posts per social media platform*

### 4.3.2 Food and Beverage Cues and Marketing

There were a total of 1905 (45.2%) posts containing food and beverage cues and were classified as either containing marketing ( $n = 973$ ), or not containing marketing ( $n = 932$ ). Posts with food and beverage cues were defined as containing marketing if they were labelled as sponsored posts (3.3%), contained the influencer's brand (24.8%), or contained food or beverage branding in the background (23.0%). The remaining posts containing food and beverage cues did not contain any forms of marketing (48.9%). Three influencers had more posts containing food and beverage cues than posts without cues (Table 9).

### 4.3.3 Social Media Engagement

Instagram posts were more likely to have interactions than Facebook posts. Both platforms had a higher follower engagement with views, likes and reactions compared to comments. Posts that did not contain food and beverage cues had a higher engagement rate than posts with food and beverage cues on both platforms (Figure 6 and Figure 7).

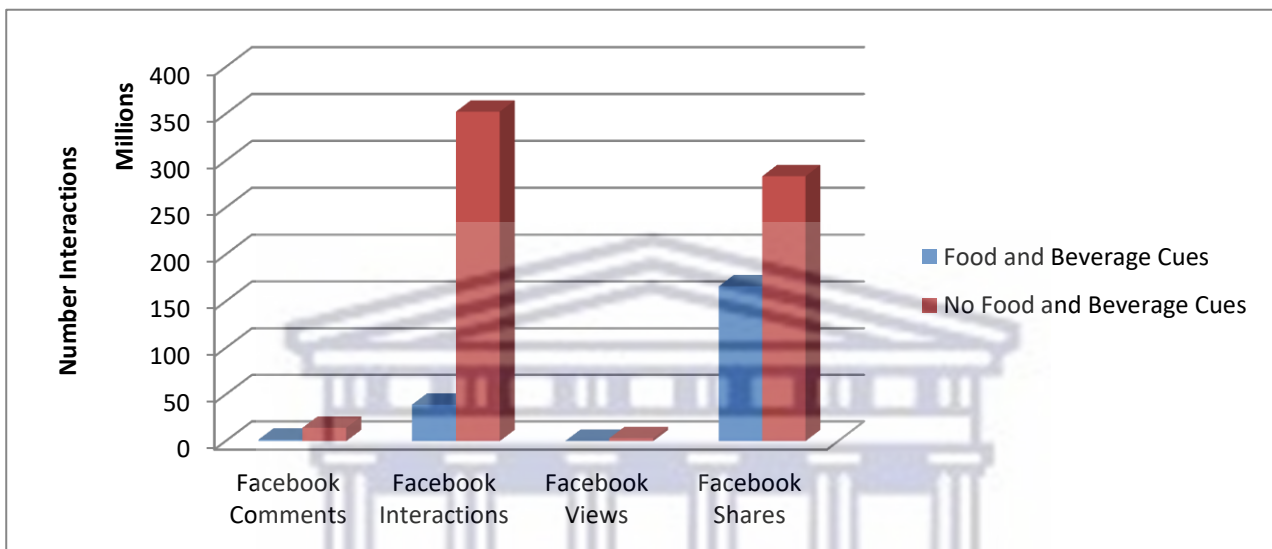


Figure 6: Follower engagement on Facebook posts with and without food and beverage cues

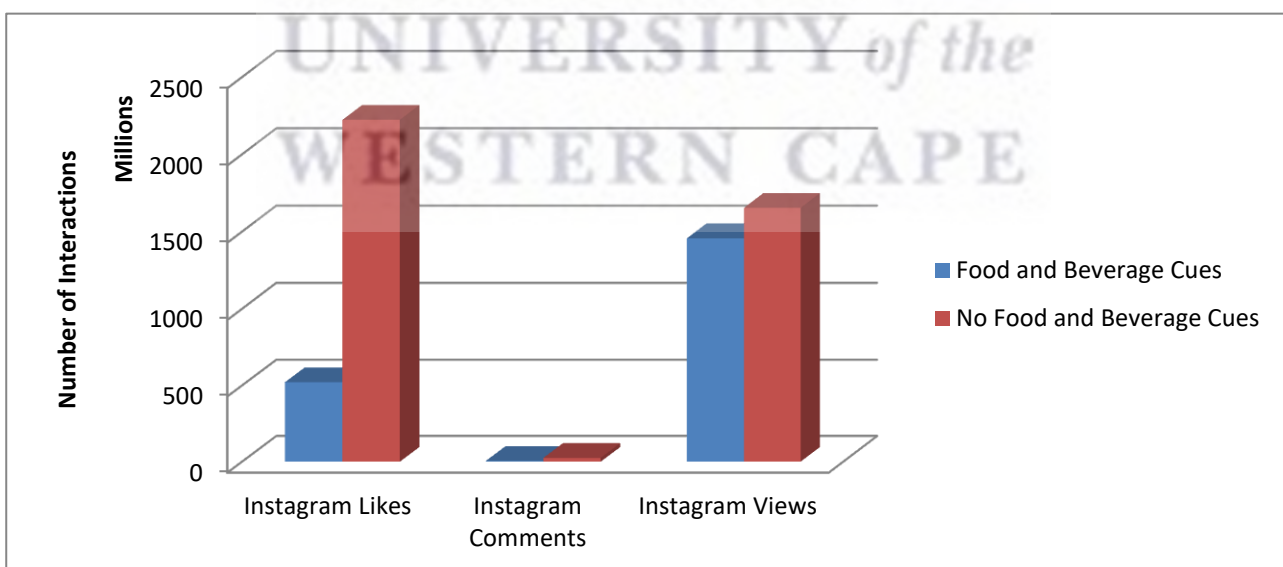


Figure 7: Follower engagement on Instagram posts with and without food and beverage cues

There were more interactions, comments and shares on Facebook posts containing no marketing; however, there were more views on Facebook posts that contained marketing than posts that did not contain marketing (Figure 8). Instagram posts had more follower engagement on posts containing marketing than posts containing no marketing (Figure 9).

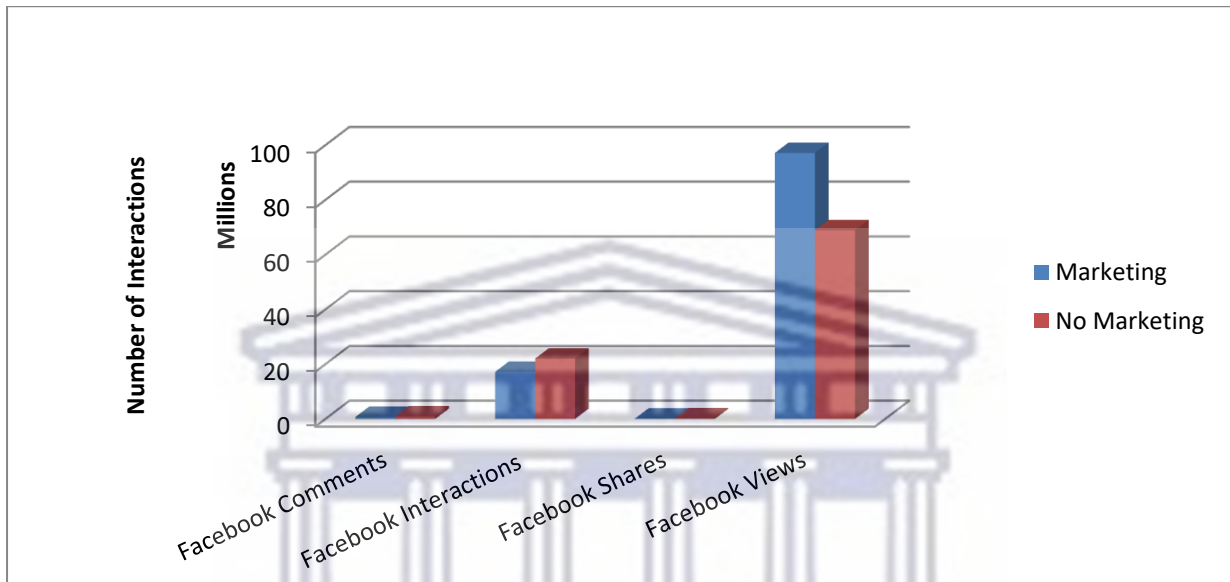


Figure 8: Follower engagement on Facebook posts containing marketing and containing no marketing.

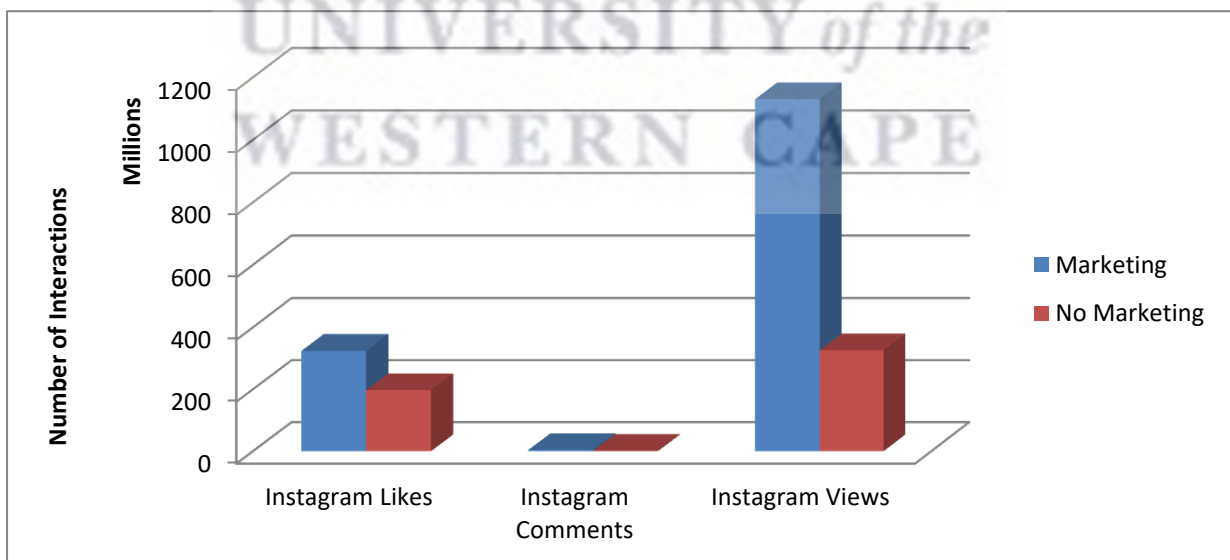


Figure 9: Follower engagement on Instagram posts containing marketing and containing no marketing.



#### 4.3.4 Nutrition Information and Health Claims

Nutrition information was provided in 21.0% of posts, in the form of recipes, weight-loss tips and the nutrient content of the products in the post. Five nutrients were highlighted when the nutrient content of products was mentioned, namely; vitamins, amino acids, electrolytes, antioxidants and protein, with vitamins featuring most commonly. An example of health claims that were used to market an energy drink that was classified as containing NCTL are: “a good source of vitamins, amino acids, antioxidants and electrolytes”. A product was shown in 79.0% of posts containing nutrition information (Figure 10), with 1 post containing a source of the nutrition information provided.

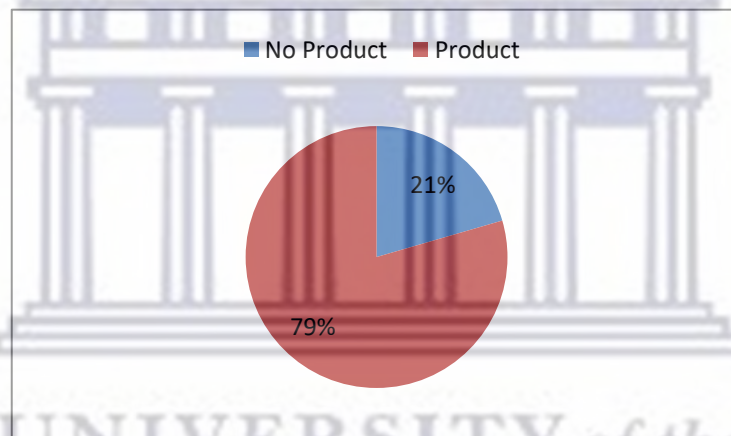
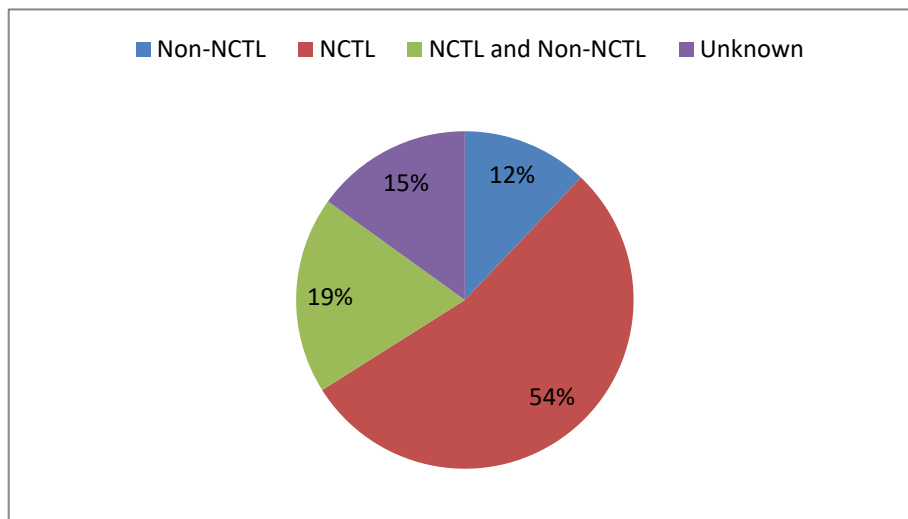


Figure 10: Nutrition information posts with a product.

#### 4.3.5 Food and Beverage Post Classifications and Descriptions

A total of 54.0% of posts containing food and beverage cues were classified as containing NCTL (Figure 11). All posts containing food and beverage cues were classified as unhealthy based on the NPM proposed by Frank et al. A total of 61.9% (n=637) of posts containing NCTL foods and beverages also contained marketing. Of the posts with food and beverage marketing (n = 974), 65.4% of posts mentioned NCTL products, whilst 20.5% mentioned NCTL products as well as non-NCTL products.



*Figure 11: Food and beverage post classifications*

#### **4.3.6 Social Media Influencer Marketing Techniques**

Posts were labelled as “described positively” if the post made mention of the product smelling/tasting good, if the influencer mentioned consuming the product regularly or if positive adjectives were used to describe the product. Of the marketed posts that were described positively (n = 1227), 61.8% (n=759) mentioned NCTL products and 20.7% (n=255) displayed NCTL and non-NCTL products.

A total of 29.0% of the products that the influencer’s directly encouraged their followers to consume or purchase contained marketing, with 63.7% of these posts mentioning NCTL products. Additionally, 18.1% of products that followers were indirectly encouraged to consume or purchase contained marketing, with 18.6% of these posts mentioning NCTL and non-NCTL products (Table 8). Influencers tagging the brand or place the products were purchased from or showing the brand and product name or consuming the product and smiling or making appreciative sounds were marked as indirect encouragement of consuming or purchasing a product. Of the posts where influencers directly encouraged their followers to consume from or purchase from a brand (rather than a specific product), 94.8% of those posts contained marketing with 74.1% of these posts mentioning NCTL products and 20.0% mentioning NCTL and non-NCTL products. There were 12.1% of posts where purchasing or

consuming from a brand was indirectly encouraged, with 92.7% containing marketing and 63.7% mentioning NCTL products and 24.1% mentioning a NCTL and non-NCTL products.

**Table 8: Food and Beverage Marketing and Consumption Encouragement**

	<b>Consumption Encouragement</b>	<b>Containing excessive NCTL products % (n)</b>	<b>Containing both excessive NCTL and non-excessive NCTL products % (n)</b>
<b>Contains Marketing</b>	<b>Directly</b>	40,6 (418)	31,6 (114)
	<b>Indirectly</b>	18,1 (187)	23,0 (83)
	<b>None</b>	4,7 (49)	2,2 (8)
<b>Total</b>		63,6 (654)	56,9 (205)
<b>No marketing</b>	<b>Directly</b>	15,9 (164)	20,5 (74)
	<b>Indirectly</b>	14,7 (152)	16,1 (58)
	<b>None</b>	5,6 (58)	6,3 (23)
<b>Total N</b>		36,4 (374)	43,1 (155)
	<b>Total</b>	100 (1028)	100 (360)

#### **4.3.7 Marketed Posts of NCTL products in the various food and beverage categories**

Sweet baked goods appeared most frequently in marketed posts that contained NCTL products, at 20.9% (n=79), followed by foods that were not on the pre-specified list of food groups 10.6% (n=40) and sweets and candy 9.8% (n=37). Foods that were not included on the list but were found in marketed posts included supplements and sugar/syrups. Fruits, at 14.9% (n=99) appeared most frequently in the marketed posts that contained NCTL and non-

NCTL products. This was followed by vegetables at 11.6% (n=77) and sweet baked goods at 8.5% (n=51) (**Figure 12**).

Alcohol appeared most frequently in marketed posts that contained NCTL products, at 60.7% (n=353), followed by energy drinks at 28.3% (n=165) and milk/ dairy drinks at 3.4% (n=20). Alcohol appeared most frequently in marketed posts that contained NCTL and non-NCTL products, at 35.7% (n=68), followed by milk/ dairy drinks at 14.7% (n=28) and water at 11.5% (n=22) (**Figure 13**).

Additionally, there were 35 restaurants observed in the marketed posts, 20 of which are fast food outlets (Appendix 5). A summary of influencer profiles shows the breakdown of influencer categories, followers at the time of this study and how many posts were collected during the 1 year period, as well as the brand names that each influencer mentioned in their social media posts (Table 9).

#### **4.4 Conclusion**

This chapter detailed all the findings of the online survey as well as the social media content analysis of this study, including but not limited to; social media use among participants and food and beverage cues in social media posts, social media marketing and the engagement on these types of posts.

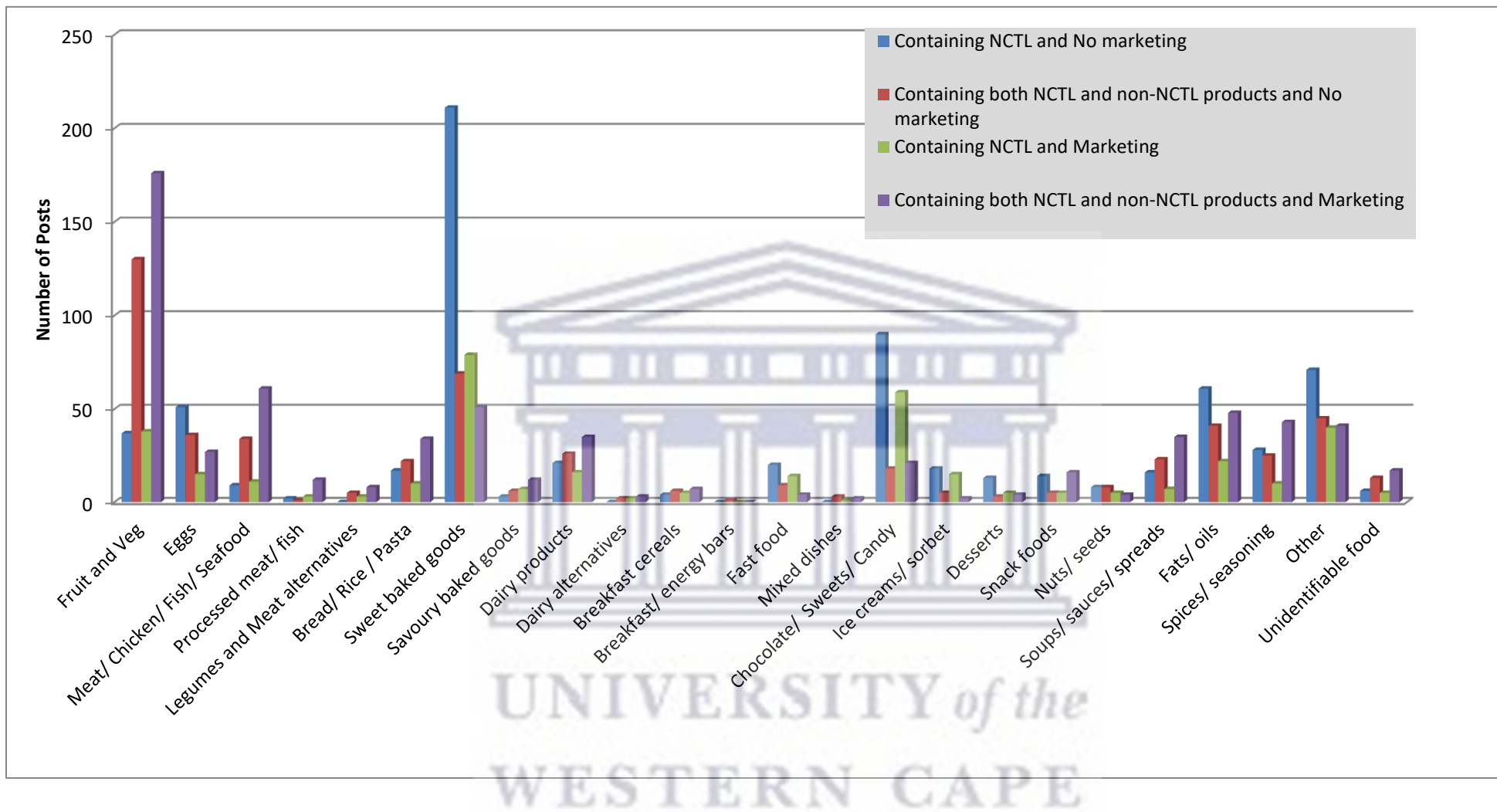


Figure 12: Marketing and non-marketing posts classified as Containing NCTL or containing both NCTL and non-NCTL products per food category

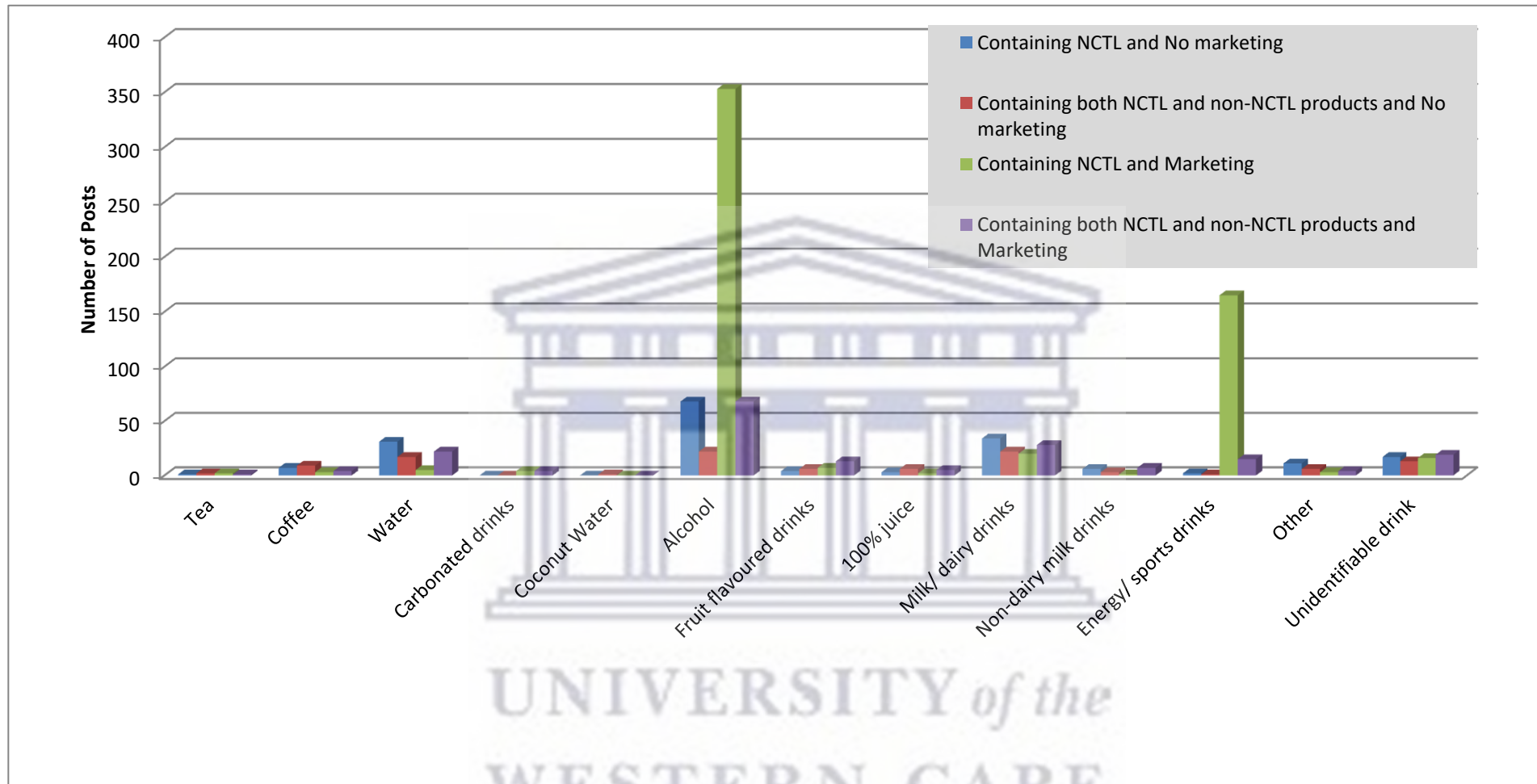


Figure 13: Marketing and non-marketing posts classified as Containing or Not containing NCTL including containing NCTL per beverage category

**Table 9: Summary of Influencer Profiles**

Influencer	Location	Category	Followers	NCTL cues	Marketed posts			Other brands and products	Total posts	Total food & beverage posts (% of posts)
					Number of sponsored posts	Number of posts with influencers brand	Number of posts with background marketing			
1	International	Sport	417M	3	2	1	1	Herbalife Nutrition CR7, Ferrari Wine	259	17 (6,5%)
2	International	Entertainment	305M	381	0	437	10	Teramana, Voss, Salt & Straw, Zoa, Doritos, Sanpellegrino, Don Julio, Tree Top Juice, Shady Maple Farms, Pizza Hut, Dominos, Kirkland, Clamato, Jack Daniels, 365 peanut butter, Heinz, Brique LA french toast, Mulberry street pizzeria, Applebees, Fiji	898	500 (55,7%)
3	International	Food	4.3M	304	13	5	105	Starbucks, Heribo, Nerds, Nesquick, Fleischmann's yeast, Pillsbury, M&Ms(6), Cocoa puffs cereal, Magpies, In-n-out, Doritos, Cheetos, Couverture chocolate, Nutella, Sprite, Oreo, Flor de Cana rum, Hershey's, Pop rocks, Classico pizza sauce, Schweppes, Torani Syrup, Tootsie roll, Lotus Biscoff, Dove Chocolate, Eggo's, Airheads, Knox, Jell-o, Carl's Junior, McDonalds, Burger King, Cheesecake factory, Kit-Kat, Twix, Junior mints, Lollipop rings, Jolly Rancher, Coffee bean, Dunkin Donuts, Jack in the box, 7-Eleven, Arby's, In-n-out, Wendy's, Aunt Jemima Pancake mix, Pepperidge farm puff pastry, Nestle choc chip cookie dough, Ritz, Best Foods, Dairy Good, Tillamook salted butter, Coco Lopez coconut milk, Tim Tam, Skittles, Walmart	791	449 (56,8%)
4	International	Health & Nutrition	812k	31	0	2	1	McDonalds, M&M's, Oreo, KFC, Chick-fil-a, Snickers, Chocolate Frogs, Cinnamon toast crunch cereal, Bragg Apple cider vinegar, Stella Artois beer	187	92 (49,2%)

**Table 9: Summary of Influencer Profiles Continued**

Influencer	Location	Category	Followers	NCTL cues	Marketed posts			Other brands and products	Total posts	Total food & beverage posts (% of posts)
					Number of sponsored posts	Number of posts with influencers brand	Number of posts with background marketing			
5	Local	Sport	1M	14	1	0	11	Danone, KFC, Beacon	160	36 (22,5%)
6	Local	Entertainment	5.5M	56	1	20	41	Moet & Chandon, BT Signature, Corona, Hennessy, Hype, Lanzerac, Tabasco sauce, Waterfrod wine estate, Peroni, Johnnie Walker, Spur	288	81 (28,1%)
7	Local	Food	565k	89	38	7	172	Woolworths Food, MUMM NAPA Champagne, Oreo, All Gold, KOO, Maizena, Tastic, Lion, Lamb and Mutton South Africa, Mullberry & Prince, Amarula, Emazulwini restaurant, Local village foods, Khan's meat, Quoin Rock Wine Estate, Krone champagne, Bakers, Hullets	587	466 (79,4%)
8	Local	Health & Nutrition	19.3k	4	1	0	12	Fry's, Bio Med Can, Esona wine, Anthonij Rupert Wine, Guardian Peak wine, Gegronde coffee	34	16 (47,0%)
9	Local	Entertainment	2.4M	89	2	0	93	Monster Energy, Johnnie Walker, Tanqueray, Castle Lite, Schwepps, Courvoisier, Garankuwa Shisanyama, Belgravia, Red square, Savanna, Hennessy, Moet & Chandon, Pick n pay, Remy Martin, Coco town meat lounge, Nhlanhla Shisanyama, Hunters, The Meat Lounge, Coco Town Meat Lounge, Heineken, Pie 2 Pie lounge, Food Lover's Market, Fusion, Nestle Smarties, Jack Daniels, Ciroc, Doritos, Jumpin Jack, Lays, Martell, Potjie Sunday, Nandos, Liqui-Fruit, Ohmi gin bar, Don Julio, Coca-Cola, Glenmorangie, Jagermeister, White Star Maize Meal, Corona Extra, Smirnoff	743	191 (25,7%)
10	Local	Beauty & Fashion	1.7M	24	4	0	18	House of BNG, Aurum Restaurant, Gratitude Restaurant, Jarryds, Moro Gelato, Simonsig, Woolworths food	262	57 (21,8%)



## **CHAPTER 5: DISCUSSION**

### **5.1 Introduction**

The aim of this study was to determine if social media influencers play a role in shaping the nutrition behaviours of their adolescent followers, therefore this chapter describes the findings of the study by assessing the nutrition related social media engagement patterns of the adolescent participants from the online survey. This chapter also assesses the nutrition related messaging by social media influencers and the number of interactions on posts containing marketing compared to posts that did not contain marketing. These particular assessments address the study's objectives.

### **5.2 Adolescent social media usage**

These findings address the study aim, which was to determine if social media influencers play a role in shaping nutrition behaviours of adolescents. This study found that all the respondents from the online survey made use of social media; 60.5% spend more than 3 hours on social media per day which is consistent with the findings from Kemp (2021), and 69.8% of respondents follow social media influencers. It was reported that influencers are deemed as “honest and authentic”, indicating that adolescents may believe that the information these influencers post on their social media accounts may be accepted as trustworthy. This is of concern as 72.1% of respondents reported to have previously followed nutrition advice they had come across on social media and 23% have previously tried diets promoted by influencers. The most common food products respondents see on social media, at 73.8%, are ‘super foods’ and supplements. As indicated by previous research, the term ‘super foods’ are used as a marketing strategy to entice consumers to purchase certain products that have unsubstantiated health claims (MacGregor et al., 2021). Pop-up advertisements on social media contained nutrition related information at least one time per

browsing session for 61.9% of respondents, similar to findings by Kent, et al. (2018) and Fleming-Milici and Harris (2020).

These findings are indicative of adolescents being immersed in a social media environment on an individual level, where social media content is observed, interacted with and there is a risk of adolescents being targeted by food marketing, as proposed by Van der Bend et al. (2022). The majority of respondents identified their socio-economic status as being middle to low income. University students come from all backgrounds, however, it is to be noted that many rely on financial aid to pay for university fees, as well as food and living costs. In the UWC annual report (2010), it was stated that the university prides itself for being an appealing option for students from low income communities and 80% of their undergraduate student population receive funding from the National Student Financial Aid Scheme.

### **5.3 Marketing and Social Media Engagement**

It was found that influencers market food and beverage brands (51.1% of food and beverage posts) to their followers, however, only 3% of these posts were labelled as sponsored by either containing a #ad/ #sponsored label in the caption, or the post was tagged as a sponsorship/ paid partnership in the heading of the post. This “failure” to identify sponsored posts was also found by Coates et al. (2019), where 29.3% of influencer’s posts contained branding, but only 0.6% of posts were identified as sponsored posts. Influencers may be discouraged from disclosing that their posts are sponsored as it has been shown that followers may be distrustful towards the brands in sponsored posts (Yang, 2022). Additionally, it was found that 24.8% of posts contained marketing of the influencer’s own food and beverage brands indicating that social media influencers are significant role players in the food and beverage industry. Posts that contained product or brand names in the background of the post,

but did not include the above mentioned tags were classified as having marketing, but not labelled as sponsored and made up 23.0% of marketed posts.

These results address the objective relating to engagement of promoted and non-promoted posts. When analysing the interactions (likes, comments, shares and views) on posts, there were more interactions on posts on influencer's Instagram profiles than their Facebook profiles. Marketed posts on Instagram had more engagement than non-marketed posts; however, the Facebook posts had the opposite interaction result. It was also found that posts without food and beverage cues had more interactions than those with cues. Posts containing influencer's brands had more interactions than any other marketing category. Observing the interactions on posts that contain foods and beverages containing NCTL, could give us an indication of the type of content adolescents are engaging with, as adolescents prefer to engage with food adverts that have more likes than food adverts that have fewer likes (Lutfeali et al., 2020). In this study it was found that 62.1% of marketed posts contained food and beverages containing NCTL. Posts containing NCTL had more interactions than posts that did not contain NCTL. This is especially concerning in the South African context where 15.8% of females and 6.1% of males between 15 and 19 years of age are living with obesity (National Department of Health (NDoH), Statistics South Africa (Stats SA), South African Medical Research Council (SAMRC), and ICF, 2019). The effects of traditional marketing of NCTL food and beverages to this age group is known to increase their consumption of these foods, and digital marketing of these foods could potentially have similar effects, thus compromising adolescent health (Van der Bend et al., 2022).

#### **5.4 Nutrition Messaging of Foods and Beverages Containing NTCL**

More than half of the marketed posts contained food and beverages containing NCTL (61.9%). This is consistent with the findings of a study by Kidd, et al. (2020) where most of the food advertisements that adolescents saw on their Facebook feeds were of NCTL food

and beverages. Sweet baked goods were the most common food category containing NCTL posted (20.9% of marketing posts), followed by foods that were not on the pre-specified list of food groups, such as supplements, sugar and syrups (10.6%). Alcohol was the most common beverage containing NCTL posted (60.7% of marketing posts), followed by energy drinks (28.3%). These findings are consistent with the findings in a similar study by Turnwald et al. (2022) where sweet baked goods and alcoholic beverages were the most common foods and beverages posted by highly followed celebrities.

Sweet baked goods are generally high in sugars and fats and can lead to increased adiposity, overweight and obesity and an increased risk of developing NCDs (Ruiz et al., 2019). Alcohol marketing to adolescents on social media is a cause for concern, as it may appear to be more appealing to adolescents who come across these types of posts (Finan et al., 2020). Both a diet high in calorie dense, nutrient poor foods as well as alcohol use in adolescents has been shown to decrease their cognitive function, negatively affecting their memory, ability to learn, impulsivity and their executive functioning which, without intervention, is more likely to continue into adulthood (Lees et al., 2020).

Food and beverages containing NCTL were described positively in three quarters (73.4%) of the posts they appear in. Influencers encouraged their followers to consume and purchase these products, either directly (47.9% of food and beverage posts) or indirectly (39.7% of food and beverage posts). Influencers encouraging the purchase and consumption of these foods and beverages can be harmful to adolescents. In an attempt to fit in and be accepted adolescents are easily susceptible to unhealthy behavioural patterns that are deemed acceptable by their peers (Stead et al., 2011).

A majority of the posts did not contain any nutrition information (63.2% of marketed posts), but of the 36.7% of marketed posts that did contain nutrition information, 40% featured food

and beverages containing NCTL. An example of the nutrition information observed in these posts was an energy drink created by an influencer that was marketed as “healthy” and “immunity supporting” and “a good source of vitamins, amino acids, antioxidants and electrolytes”. This energy drink was classified as containing NCTL according to the nutrient profiling model. This type of marketing is known as health washing and gives consumers a false idea of the effects these products will have on them, as it puts the product or brand in a good light ((Mialon, Crosbie and Sacks, 2020 and Global Health Advocacy Incubator, 2021).

An additional finding was that influencers often posted about various restaurants; including images taken in front of a restaurant, food challenges where the same type of product from various fast food outlets were consumed and the influencer guesses where the product was purchased from, as well as restaurants hosting and sponsoring events that influencers attend. This can be considered indirect marketing of the restaurant and the products they sell. With so few South African restaurants providing nutrition information for the products they serve, it is difficult to distinguish between restaurants that sell mostly products containing NCTL and restaurants that sell a variety of products with fewer options containing NCTL. Additionally, if restaurants provide warning labels in their menus next to food items that contain excessive amounts of added sugar, sodium and saturated fats, consumers can make informed decisions about the food they consume at these establishments.

### **5.5 Marketing Strategies of Social Media Influencers**

A marketing strategy observed was an international influencer reposting their followers posts on their own profiles, when their followers posted videos and images with the influencer’s brand. The influencer also encouraged their followers to repost these images and videos of their products and to tag them in the posts and the influencer dedicated one day per week to reposting their follower’s posts to their social media profiles.

Another marketing strategy that was observed was influencers using their products or other visibly branded products in posts where the product was not the focus of the post. These posts did not carry any labels indicating that it was a sponsored post. An example of this type of marketing strategy is when the influencer is at a social event or relaxing at home and they use their product to deliver a toast or pour themselves a “well deserved drink” after getting home from work. This is in accordance with findings from Qutteina et al. (2019) who found that influencers and marketers use foods and beverages containing NCTL in the context of celebrations and socialising with friends in their posts. There is a need for regulations on the marketing of food and beverage products by social media influencers so that their followers are aware that they are consuming marketing content.

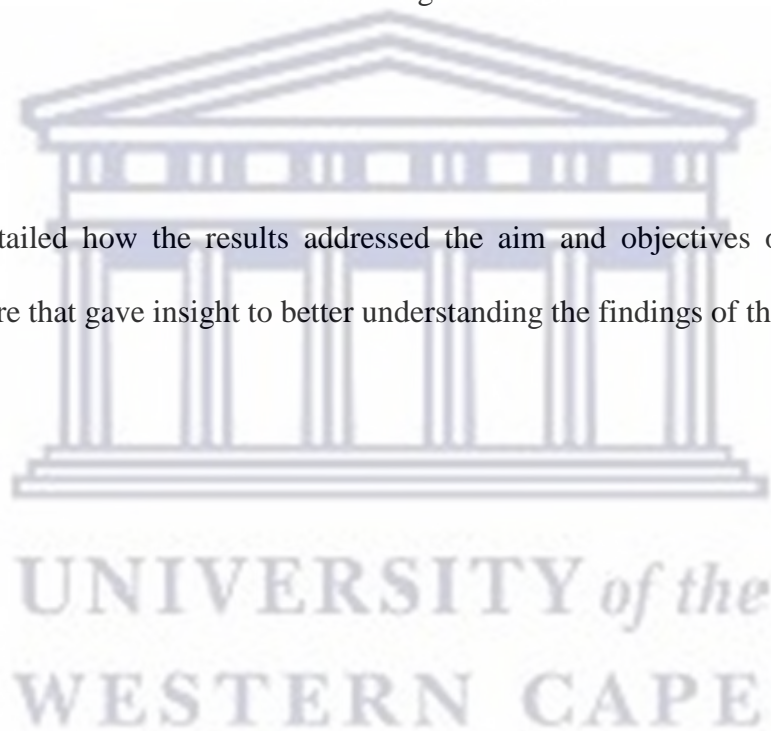
There were posts that contained food and beverage branding in the background of the post that was not labelled as sponsored (23% of posts). This finding is consistent with the findings of Coates et al. (2019) and Qutteina et al. (2019) who found that the majority of posts with food branding posted by influencers were not clearly labelled as sponsored. This could be because there are no enforceable regulations for influencers to follow with regard to labelling a post as sponsored. These products may still be appealing to the influencer’s followers as it could be seen as a product the influencer trusts to use in their day to day lives without being paid to do so. Posts not being labelled as sponsored is a cause for concern, as adolescents who are not media-literate, will not be aware that they are being marketed these products and might choose to consume these products without knowing the health implications that might follow (Dunlop et al. 2016).

Educating adolescents on marketing strategies used by the food industry could be a first step to minimising the influence these marketing strategies have on their food intake (Naderer, 2021). More importantly, regulations enforceable by law need to be put in place to restrict the marketing of food and beverages containing NCTL on social media (Kent et al., 2019). There

has been advocacy for these regulations to be put in place; however, there are no enforceable regulations yet. Recommendations to be considered for these regulations include clearly labelling every post that contains visible food branding and depictions alluding to food brands as a sponsored post, as well as posts of products containing NCTL to include warning labels of the dangers associated with consuming these products. Additionally, health care providers should consider working with social media influencers to educate their audiences on healthy eating habits through health campaigns. Additional research is needed to determine the most suitable method for involving influencers in health campaigns (Folkford et al., 2020).

## **5.6 Conclusion**

This chapter detailed how the results addressed the aim and objectives of the study and included literature that gave insight to better understanding the findings of this study.



## **CHAPTER 6: CONCLUSION AND RECOMMENDATIONS**

### **6.1 Introduction**

This chapter details the concluding remarks on the findings that may be significant to assist in supporting social media influencer marketing regulations and adolescent targeted marketing regulations. This chapter describes the study's limitations, as well as recommendations on how this study, particularly the codebook, could be used for future research.

### **6.2 Study Conclusion**

More than half of posts containing food and beverage cues contain marketing, but only 3% are labelled as such. Foods and beverages containing NCTL make up 62.1% of marketed posts, showing that adolescents who follow influencers on social media are at risk of marketing of products that may have undesirable health outcomes. These foods and beverages containing NCTL are described positively by the influencers, and they also encourage the purchase and consumption of these products. This is alarming considering 44.4% of beverages being marketed are alcoholic beverages. Adding to this concern is that adolescents trust social media influencers to be honest with their followers and with their history of following nutrition advice they have seen on social media before, the probability of adolescents consuming the products they are marketed by influencers is high.

Marketing techniques include health washing of harmful products and creating an interactive environment where influencers encourage their followers to purchase and consume products and record themselves doing so, post it on social media and tag the influencer and in turn the influencer reposts their images and videos of the products. This may pose harmful outcomes for adolescents who feel encouraged to participate so that their favourite influencer can engage with them. Regulations on brand and influencer marketing on social media need to be implemented; however, formal monitoring is likely to pose challenges. Concurrent



sensitisation of adolescents on media-literacy and vigilance of civil society to call out influencers who pose risks to adolescent health may be needed.

### **6.3 Limitations**

A limitation of this study was that students participated voluntarily, which may have caused sampling bias. Some forms of sampling bias that can be applicable to this research, are coverage bias, non-response bias and self-selection bias. Coverage bias is where participants may not be from the targeted sample. Non-response bias is when people who choose not to participate, share common characteristics. Self-selection bias is where those who do participate share characteristics that make them different from non-participants (Moss, 2019).

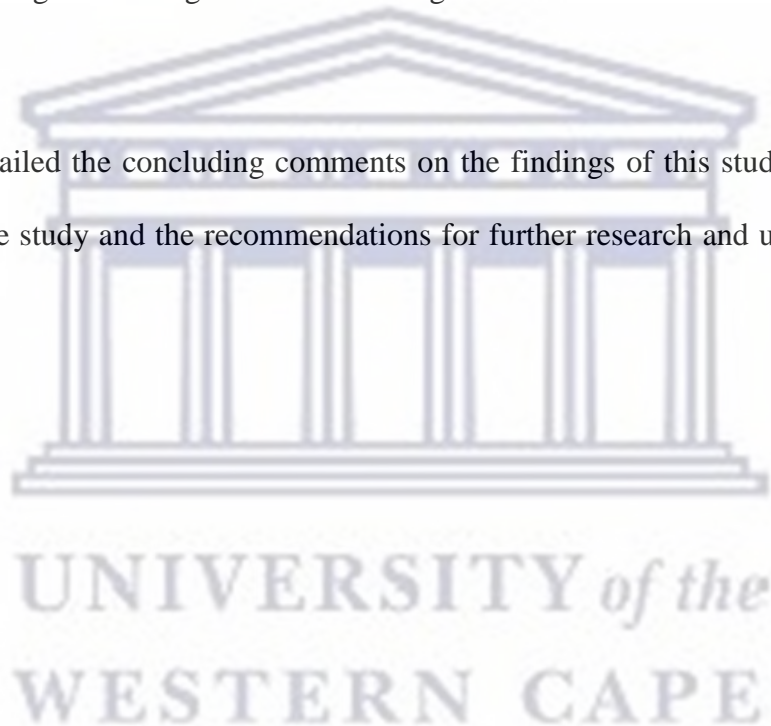
Another limitation was that there was a low response rate to the online survey. This resulted in data that were inadequate to generalise and meet the objective to assess the social media engagement patterns of adolescents. It also affected the initial methodological process of choosing the influencers for the study as there was no social influencer. Two influencers with the highest number of followers were selected from the list of social media influencers listed by students. Subsequently the list of influencers was expanded to include eight additional influencers, selected as explained in section 3. Instagram and Facebook stories could not be included because they disappear after 24 hours. With the collected data, there is no way to analyse how often influencers advertise food and beverage products and brands in these stories. Additionally, due to the scope of this project, and the large volume of posts, only two social media platforms were included in this study (the two most frequently used platforms in South Africa). However, it must be acknowledged that there may have been sponsored posts that were posted on the other platforms that were missed. Another limitation is that nano and micro influencers were not included in this study. These types of influencers are known to be more interactive with their followers in the comment sections of their posts and this could build relationships and create greater trust between the influencer and follower.

#### **6.4 Recommendations**

Further research could be conducted with adolescents to gauge their awareness on various social media marketing strategies used by influencers. The online survey of this study could be more effective if it was conducted in person with large groups of adolescents of various age groups within the adolescent stage, as the habits of younger adolescents may vary from older adolescents. The codebook from this study could be used for further research on social media marketing. The findings from this study could be used to advocate for strict regulations on food and beverage marketing of food containing NCTL on social media.

#### **6.5 Conclusion**

This chapter detailed the concluding comments on the findings of this study, as well as the limitations of the study and the recommendations for further research and use of the study's findings.



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## Appendices

### Appendix 1: Online Survey

# Social Media Influencers: Do they shape the nutrition behaviours of 18 and 19 year old's?

This survey consists of multiple choice questions and two questions that require short answers. For more information on the topic of this survey, please follow this link to the information sheet: <https://forms.gle/jfTi4X52EYFgkXAv5>

\* Required

1. Agreement to participate: The study has been described to me through the information sheet, in language that I understand. I understand what my participation will involve and I agree to participate of my own choice and free will. I understand that my identity will not be disclosed to anyone. I understand that I may withdraw from the study at any time without giving a reason and without fear of negative consequences or loss of benefits. \*

Mark only one oval.

- Agree  
 Disagree

Demographics

2. What is your age? \*

Mark only one oval.

- 18  
 19  
 20 and older

3. What is your gender? \*

*Mark only one oval.*

- Female
- Male
- Prefer not to say
- Non-binary

Social Media Survey

4. Do you use social media? (Facebook, Instagram, YouTube, etc.) \*

*Mark only one oval.*

- Yes *Skip to question 5*
- No

Social Media Survey Continued

5. What social media platforms do you use? (Tick all that apply. If you tick 'other', \* please provide the name)

*Check all that apply.*

- Facebook
- Instagram
- YouTube
- Snapchat
- Tik Tok
- WhatsApp
- Twitter
- Other: \_\_\_\_\_



6. What device do you usually use to access social media? (Select only one option) \*

*Mark only one oval.*

- Cellphone  
 Laptop  
 Tablet  
 PC

7. Which platform do you spend the most time on? (Select only one option. If you click on 'other', please provide the name.) \*

*Mark only one oval.*

- Facebook  
 Instagram  
 YouTube  
 Snapchat  
 Tik Tok  
 Twitter  
 WhatsApp  
 Other:

8. What times of the day are you most likely to engage with social media? (Select only one option) \*

*Mark only one oval.*

- Morning  
 Afternoon  
 Evening  
 All day

9. How long do you engage with these platforms in total? (Select only one option) \*

*Mark only one oval.*

- Less than 1 hour per day  
 1-3 hours per day  
 More than 3 hours per day

10. What times of the week are you most likely to engage with social media? (Select only one option) \*

*Mark only one oval.*

- Weekends  
 Weekdays  
 Any day of the week

11. Do you follow social media influencers? \*

*Mark only one oval.*

- Yes *Skip to question 12*  
 No *Skip to question 14*

Social Media Influencers

12. If yes, who is your favourite social media influencer? \*

\_\_\_\_\_

13. What are the most important reasons why this influencer is your favourite? \*

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**Social Media Content**

14. What type of content do you enjoy viewing on social media? (Tick all that applies to you) \*

*Check all that apply.*

- Fitness
- Comedy
- Food
- Fashion
- Make-up/ Beauty
- Sport
- Technology
- Cars
- Other: \_\_\_\_\_



15. Have you ever followed any nutrition/food/eating/ health advice that you viewed on social media? \*

*Mark only one oval.*

- Yes
- No

16. Do you trust the advice given by social media influencers? (Select only one option) \*

*Mark only one oval.*

- Strongly Agree  
 Somewhat Agree  
 Neither agree nor disagree  
 Somewhat Disagree  
 Strongly Disagree

17. Have you bought a product promoted by an influencer before? \*

*Mark only one oval.*

- Yes  
 No

18. How likely are you to buy a product promoted by an influencer in future? (Select only one option) \*

*Mark only one oval.*

- Definitely  
 Probably  
 Possibly  
 Probably not  
 Definitely not

19. Have you tried a diet that was promoted by an influencer? \*

*Mark only one oval.*

- Yes  
 No

20. How likely are you to try a diet that your favourite influencer was promoting? \*  
(Select only one option)

*Mark only one oval.*

- Definitely  
 Probably  
 Possibly  
 Probably not  
 Definitely not

21. Which of the following products have you noticed while engaging with social media? (Tick all that applies to you) \*

*Check all that apply.*

- Fast food  
 Fizzy drinks  
 'Detox' teas  
 'Diet' products  
 'Health' foods (superfoods, Supplements)  
 Sweets, chips, chocolates  
 Nuts and fruit  
 Smoothies  
 None  
 Other: \_\_\_\_\_

22. Indicate how often the products mentioned in question 21 (above) appear during an online browsing session? \*

*Mark only one oval.*

- Never  
 1-3 times  
 More than 3 times

23. How often do you receive links with pop-up advertisements or notices related to nutrition whilst on a social media platform? (Select only one option) \*

*Mark only one oval.*

- Never  
 1-3 times  
 More than 3 times

24. How likely are you to follow these links? (Select only one option) \*

*Mark only one oval.*

- Definitely  
 Probably  
 Possibly  
 Probably not  
 Definitely not

25. Do you make use of any software that prevents pop-up advertisements? \*

*Mark only one oval.*

- Yes  
 No



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### Socio-economic status

26. At the top of the ladder are the people who are the best off, those who have the most money, most education, and best jobs. At the bottom are the people who are the worst off, those who have the least money, least education, worst jobs, or no job. Please choose a number from 1 to 6 that best represents where you think you stand on the ladder. 1 = at the very top, 6= at the very bottom. \*



Mark only one oval.

- 1
- 2
- 3
- 4
- 5
- 6

## Diet Quality Questionnaire

27. Read the list of foods. Click in the checkbox if you ate any of the food listed, yesterday during the day or night. \*

*Check all that apply.*

- Mieliepap, samp, bread, rice, pasta, corn flakes?
- Mielie, All-Bran flakes, Weet-Bix, motoho wa mabele?
- Potato, sweet potato?
- Beans, samp and beans, lentils, split peas, bambara nuts, soya mince such as Imana?
- Carrots, pumpkin, butternut or other orange squashes, sweet potatoes that are orange inside?
- Spinach, broccoli, pumpkin leaves, sweet potato leaves, wild leaves, such as, amaranthus?
- Cabbage, green beans, tomatoes, beetroot, cucumber, lettuce?
- Mango, pawpaw, apricots, yellow melon?
- Orange, naartjie, grapefruit?
- Banana, apple, avocado, grapes, peaches, nectarines?
- watermelon, strawberries, guava, litchi, marula, wild fruits?
- Cakes, muffins, biscuits, donuts, koeksister, sweet tarts?
- Sweets, chocolates, ice cream, ice suckers, frozen yogurt?
- Eggs?
- Cheese, feta cheese?
- Amasi/ maas/ mafi, yogurt?
- Polony, boerewors, Russian, Vienna, ham, bacon, biltong?
- Beef, mutton, goat, tripe?
- Pork, wild game?
- Chicken, turkey?
- Fish, pilchards, sardines, tuna, seafood?
- Peanuts, peanut butter, pecan nuts, cashews?
- Simbas, makikip?
- Two-minute noodles, such as, Maggi noodles, Indomie?
- Vetkoek/amagwinya, fried chicken, fried fish, fish fingers, take-away chips, kota, fried Russian, fried Vienna?
- Fresh milk, packaged milk such as Long Life, milk powder such as Klim or Nespray?
- Tea with sugar, coffee with sugar, Milo, Tropika?
- Fruit juice, squash or oros, ice juice?
- Other cold drinks, such as, Coca-Cola, Sparletta, Twizza, energy drinks, such as, Red Bull?
- KFC, Steers, Roman's Pizza, Wimpy, Nandos, McDonald's, Chickin Lickin?



Thank you for completing  
this survey!

If you would like to enter the lucky draw, please  
follow the link:

<https://forms.gle/vtwnmeg0xjzAudEu5>



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## Appendix 2: South African Social Media Codebook

Variables	Questions	Action	Description	Source
	Basic Information			
1	Record ID	_____	YYYYMMDD_II_CC_N(M) Y = year post was entered M = month post was entered D = day post was entered I = influencer (each influencer will have a 2-digit code) C = data capturer (each data capturer will have a 2 digit code) N = post number M= number of image/ video in post Example: 20211008_06_04_3(1)	
2	Data Capturer's ID	_____		
3	Today's date	_____		
4	Date of post	_____		
5	Post Source	<ul style="list-style-type: none"> <li>• Social Media Influencer</li> <li>• Brand</li> </ul>		

6	Social Media Influencer or brand	[Dropdown list of names]	A list of the social media influencers being analysed will be added to a dropdown list where the name whose content is being analysed can be chosen.	
7	Brand Name	[Dropdown list of names]	A list of the brand being analysed will be added to a dropdown list where the name whose content is being analysed can be chosen.	
8	Platform content was posted on	<input type="checkbox"/> Facebook <input type="checkbox"/> Instagram <input type="checkbox"/> YouTube <input type="checkbox"/> Twitter <input type="checkbox"/> TikTok	More than one option can be chosen here, because influencers often have their Facebook and Instagram accounts linked so when they post on Instagram it automatically posts the same media on Facebook.	
Content Information				
9	What is the media type being analysed?	<input type="checkbox"/> Image <input type="checkbox"/> Video <input type="checkbox"/> Text <input type="checkbox"/> Audio	One option to be chosen for this section. If video or audio is selected, another field will populate where the duration can be entered.	
10	What is the duration of the text/ audio?	_____		

11	What is the primary category of this post?	<ul style="list-style-type: none"> <li>o Animals &amp; Pets</li> <li>o Art &amp; Design</li> <li>o Cars&amp; Motorcycles</li> <li>o Food</li> <li>o Beverages</li> <li>o Lifestyle</li> <li>o DIY &amp; crafts</li> <li>o Beauty &amp; fashion</li> <li>o Entertainment</li> <li>o Education</li> <li>o Gaming</li> <li>o Gardening</li> <li>o Humour</li> <li>o Health &amp; fitness &amp; nutrition</li> <li>o Kids &amp; parenting</li> <li>o Friends &amp; Family</li> <li>o Nature &amp; outdoors</li> <li>o Photography</li> <li>o Technology</li> <li>o Travel</li> </ul>	<p>The primary category is determined by the focus of the post. Eg. an image of a beverage with other items in the background =beverage category</p>	
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		<ul style="list-style-type: none"> <li>o Sport</li> <li>o Other</li> <li>o Could not be categorised</li> </ul>		
12	What is the secondary category of this post?	<ul style="list-style-type: none"> <li>Animals &amp; Pets</li> <li>o Art &amp; Design</li> <li>o Cars &amp; Motorcycles</li> <li>o Food</li> <li>o Beverages</li> <li>o Lifestyle</li> <li>o DIY &amp; crafts</li> <li>o Beauty &amp; fashion</li> <li>o Entertainment</li> <li>o Education</li> <li>o Gaming</li> <li>o Gardening</li> <li>o Humour</li> <li>o Health &amp; fitness &amp; nutrition</li> <li>o Kids &amp; parenting</li> <li>o Friends &amp; Family</li> </ul>	The secondary category is determined by the background of the post. Eg. an image of a beverage with beauty products in the background =lifestyle category	

		<ul style="list-style-type: none"> <li>o Nature &amp; outdoors</li> <li>o Photography</li> <li>o Technology</li> <li>o Travel</li> <li>o Sport</li> <li>o Other</li> </ul> <p>Could not be categorised</p>		
Social Media Engagement				
13	Facebook	<ul style="list-style-type: none"> <li>-comments</li> <li>-likes</li> <li>-love</li> <li>-care</li> <li>-haha</li> <li>-wow</li> <li>-sad</li> <li>-angry</li> <li>-shares</li> <li>-views</li> </ul>	The number associated with each engagement action should be recorded next to the engagement action.	Big Commerce, 2020
14	Instagram	<ul style="list-style-type: none"> <li>-likes</li> <li>-comments</li> </ul>	The number associated with each engagement action should be recorded next to the engagement action.	Big Commerce, 2020

		-views		
15	YouTube	-likes -dislikes -comments -views	The number associated with each engagement action should be recorded next to the engagement action.	Big Commerce, 2020
16	Twitter	-retweets -replies -likes -views	The number associated with each engagement action should be recorded next to the engagement action.	Big Commerce, 2020
17	TikTok	-likes -comments -shares -views	The number associated with each engagement action should be recorded next to the engagement action.	Big Commerce, 2020
Food and beverage cues and classifications				
18	Does the post contain food and beverage cues?	<input type="radio"/> Yes <input type="radio"/> No	<p>Food/ beverages can be seen, heard or read in the post.</p> <p>If the answer to this question is no, the rest of the questions on this form and the forms that follow do not populate.</p>	
19	What kind of food and/ or beverage cue is present in the posted media?	<input type="checkbox"/> Visual <input type="checkbox"/> Verbal <input type="checkbox"/> Text <input type="checkbox"/> None	<p>Visual: if the item can be seen in the media posted, whether it is the focus of the post or in the background.</p> <p>Verbal: the item is mentioned, either as the focus of the dialogue or mentioned in casual conversation.</p> <p>Text: the item is mentioned in the caption of the post, as a text</p>	Coates et al. 2019

			post or as text across the screen in a video post. More than one option can be chosen.	
20	How can the food and/ or beverage posted in this media be classified?	<ul style="list-style-type: none"> <li><input type="radio"/> Healthy</li> <li><input type="radio"/> Less Healthy</li> <li><input type="radio"/> Combination</li> </ul>	<p>Healthy: an item that is considered to have a low salt, saturated fat, refined sugar and high fibre, micronutrient content.</p> <p>Less healthy: an item that is considered to have a high salt, saturated fat, refined sugar and high fibre, micronutrient.</p> <p>Combination: more than one item that falls into both healthy and less healthy categories.</p>	Coates et al. 2019
21	How was the food and/ or beverage described?	<ul style="list-style-type: none"> <li><input type="radio"/> Positive</li> <li><input type="radio"/> Negative</li> <li><input type="radio"/> Neutral</li> <li><input type="radio"/> None</li> </ul>	<p>Positive: a positive tone and positive adjectives were used when talking about or in text about the item.</p> <p>Negative: a negative tone and negative adjectives were used when talking about or in text about the item.</p> <p>Neutral: neither positive or negative tones nor adjectives are used to describe the item.</p> <p>None: the item was not referenced at all.</p>	Coates et al. 2019
22	Does the post encourage consuming or purchasing the product?	<ul style="list-style-type: none"> <li><input type="radio"/> Yes</li> <li><input type="radio"/> Neutral</li> <li><input type="radio"/> No</li> </ul>	The post contains cues to consume the product e.g. ‘try it’, ‘it’s a vibe’, ‘it’s lit’, ‘I love it’, making appreciative sounds etc.	
23	Does this post encourage consuming or purchasing from the brand?	<ul style="list-style-type: none"> <li><input type="radio"/> Yes</li> <li><input type="radio"/> Neutral</li> <li><input type="radio"/> No</li> </ul>		
24	What type of food was posted?	<ul style="list-style-type: none"> <li><input type="checkbox"/> Fruit</li> <li><input type="checkbox"/> Vegetables</li> </ul>	More than one option can be chosen.	Coates et al. 2019 & UWC NPF



		<input type="checkbox"/> Eggs <input type="checkbox"/> Meat/ chicken <input type="checkbox"/> Fish/ seafood <input type="checkbox"/> Processed meat/ fish <input type="checkbox"/> Meat alternatives <input type="checkbox"/> Legumes <input type="checkbox"/> Bread <input type="checkbox"/> Rice / Pasta/ noodles /Couscous/ quinoa <input type="checkbox"/> Sweet baked goods <input type="checkbox"/> Savoury baked goods <input type="checkbox"/> Low fat dairy products <input type="checkbox"/> Full fat dairy products <input type="checkbox"/> Dairy alternatives <input type="checkbox"/> Low sugar/high fibre breakfast cereals <input type="checkbox"/> High sugar/low fibre breakfast cereals <input type="checkbox"/> Breakfast/ energy bars <input type="checkbox"/> Fast food <input type="checkbox"/> Mixed dishes	categories
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		<input type="checkbox"/> Chocolate <input type="checkbox"/> Sweets/ candy <input type="checkbox"/> Ice creams/ sorbet <input type="checkbox"/> Desserts <input type="checkbox"/> Snack foods <input type="checkbox"/> Nuts/ seeds <input type="checkbox"/> Soups/ sauces/ spreads <input type="checkbox"/> Fats/ oils <input type="checkbox"/> Spices/ seasoning <input type="checkbox"/> Infant/ paediatric feeding <input type="checkbox"/> Other <input type="checkbox"/> Unidentifiable food <input type="checkbox"/> None		
25	What type of beverage was posted?	<input type="checkbox"/> Tea <input type="checkbox"/> Coffee <input type="checkbox"/> Water <input type="checkbox"/> Flavoured water <input type="checkbox"/> Carbonated drinks <input type="checkbox"/> Coconut water	More than one option can be chosen.	Coates et al. 2019 & UWC NPF categories

		<input type="checkbox"/> Alcohol <input type="checkbox"/> Juice/ fruit flavoured beverages <input type="checkbox"/> 100% juice <input type="checkbox"/> Milk/ dairy beverages <input type="checkbox"/> Non-dairy milk/ beverages <input type="checkbox"/> Energy/ sports drinks <input type="checkbox"/> Other <input type="checkbox"/> Unidentifiable drink <input type="checkbox"/> None		
Nutrition Information				
26	Was nutrition information provided in the media post?	<input type="checkbox"/> Yes <input type="checkbox"/> No	Any information relating to diets, super foods, weight loss information, information focusing on certain nutrients, recipes, food and beverage products.	
27	Was a product shown with nutrition information provided?	<input type="radio"/> Yes <input type="radio"/> No	Any food, beverage, supplemental or nutrition related products.	
28	Were sources provided with the health/ nutrition claims?	<input type="radio"/> Yes <input type="radio"/> No	Where the information comes from, e.g. a study that was conducted, an article, a health organisation.	
29	Was a disclaimer provided along with the nutrition information?	<input type="radio"/> Yes <input type="radio"/> No	Did they state that the information is based on personal experience, advising followers to seek professional advice, stating that the information is not based on scientific evidence.	
30	Does the post mention that the product is a source of or high in a	<input type="checkbox"/> Fat	The post mentions the product is a source of vitamins or high	

	nutrient/ ingredient?	<input type="checkbox"/> Salt <input type="checkbox"/> Sugar <input type="checkbox"/> Other <input type="checkbox"/> None	in protein.	
31	Does the post mention the reduction or elimination of a nutrient/ ingredient?	<input type="checkbox"/> Fat <input type="checkbox"/> Salt <input type="checkbox"/> Sugar <input type="checkbox"/> Other <input type="checkbox"/> None	The post mentions the product is sugar free or low in fat.	
32	Does this post make mention of any health claims associated with the product?	<input type="radio"/> Yes <input type="radio"/> No	The post mentions the product is healthy, good for you, organic, lactose/ gluten free, aids in weight loss/ hair growth/ muscle building.	
33	Does the post contain a guest?	<input type="radio"/> Yes <input type="radio"/> No	The influencer has a celebrity, actor, singer, movie star, sports person, another influencer, or friend in the post with them.	
34	Is the guest a celebrity or non-celebrity?	<input type="checkbox"/> Celebrity <input type="checkbox"/> Non-celebrity		
35	What age group does this guest fall into	<input type="checkbox"/> Under 12 years old <input type="checkbox"/> Above 12 years old <input type="checkbox"/> Both <input type="checkbox"/> Non-youth		
Food Brand Marketing				

36	Name of product:	[empty space for name to be entered]	E.g. All bran flakes	
37	Describe the flavour of the product.		Mention if the product is known to be or described as sweet, sour, creamy, etc. This can be found in the post /caption /on the product packaging, etc.	
38	What is the diet designation of the product?	<ul style="list-style-type: none"> <li><input type="radio"/> Original</li> <li><input type="radio"/> Diet</li> <li><input type="radio"/> Zero</li> <li><input type="radio"/> Low calorie</li> <li><input type="radio"/> Fat free</li> <li><input type="radio"/> Low Fat</li> <li><input type="radio"/> Sugar free</li> <li><input type="radio"/> Low in sugar</li> <li><input type="radio"/> None</li> </ul>	The product is labelled as 'diet', 'original', 'zero', 'low calorie', etc.	
39	Enter in any other descriptors of the product.		Anything that is not included in the flavour and diet designation of the product.	
40	What type of marketing, is in this post?	<ul style="list-style-type: none"> <li><input type="radio"/> Sponsored post</li> <li><input type="radio"/> Influencer's own brand</li> <li><input type="radio"/> Post by brand/company</li> <li><input type="radio"/> Not sponsored</li> <li><input type="radio"/> Gifted</li> <li><input type="radio"/> Unsure</li> </ul>	One option to be chosen for this section.	Coates et al. 2019

41	Can food branding be seen in this post?	<input type="radio"/> Yes <input type="radio"/> No	Branding from a food company can be seen in the post e.g, the yellow M from McDonald's.	
42	Is the brand a supermarket?	<input type="radio"/> Yes <input type="radio"/> No	If answer to 40 is yes, this question will populate. Supermarket example: Shoprite, Pick n Pay, Spar.	
43	Is there a brand or product in the background of the post or as part of the set?	<input type="radio"/> Yes <input type="radio"/> No	The product is visible in the background e.g. on a table behind the influencer or on a poster on the wall behind the influencer or behind the focus of the post.	
44	What type of brand promotions are in this post?	<input type="radio"/> Competitions <input type="radio"/> Sale <input type="radio"/> Promotional campaigns <input type="radio"/> Free gifts <input type="radio"/> None	The media posted is promoting a competition where the user needs to engage with their content in order to win or the brand is hosting a sale, the brand is hosting a promotional campaign, or the customer gets a free gift with a purchase of a product or if they sign up on the brand's website.	Tafesse and Wien. 2017
45	Is there a promotional campaign with another brand?	<input type="radio"/> Yes <input type="radio"/> No	Two brands are teaming up in a competition or campaign where the customer can win products from both brands or a product that both brands collaborated on.	

46	Is there a promotional campaign with different products within the same brand?	<input type="radio"/> Yes <input type="radio"/> No	There is a competition where the consumer can win multiple products from the same brand or there is a sale/ promotion where the customer purchases one item and gets the other item free/ at a discount.	
47	Does this post contain any of the following that might evoke an emotional response?	<input type="radio"/> Humour <input type="radio"/> Emotive language <input type="radio"/> Emotional story telling <input type="radio"/> None	The post uses emotive language or imagery so users can react to and engage with their post. E.g. a joke is told in the post and that results in a user liking the post or commenting laughing emojis (happy response) or a sad story is being told that results in users commenting or reacting with sad/ crying emojis or responses (sad response).	Tafesse and Wien. 2017
48	Is this post educational?	<input type="radio"/> Yes <input type="radio"/> No	The post aims to teach the user about the brand or product in relation to health/ nutrition. E.g. the post contains a 'did you know?' fact.	Tafesse and Wien. 2017
49	What type of functionality does the brand claim to have?	<input type="checkbox"/> Product benefits <input type="checkbox"/> External recognition of quality <input type="checkbox"/> Environmentally friendly <input type="checkbox"/> Other <input type="checkbox"/> None	The post shows what the user will gain from using the product/ brand e.g. the product will give you an energy boost, or that the product/brand has won awards for their quality e.g. the product was voted the best energy drink in South Africa.	Tafesse and Wien. 2017
50	Which sensory stimuli does this post contain?	<input type="checkbox"/> Visual <input type="checkbox"/> Auditory <input type="checkbox"/> Gustatory <input type="checkbox"/> None	More than one option can be ticked here. The post puts emphasis on the taste of the product or the sound it makes when the product is being opened or consumed. E.g. rice crispies: snap, crackle, pop.	Tafesse and Wien. 2017

51	Which behavioural stimuli does this post contain?	<input type="checkbox"/> Physical actions <input type="checkbox"/> None	The post shows someone partaking in a strenuous activity whilst consuming the product. E.g. someone is running a marathon while consuming an energy drink.	Tafesse and Wien. 2017
52	Is the product in this post available for a limited time, in relation to a current event?	<input type="checkbox"/> Holidays <input type="checkbox"/> Seasons <input type="checkbox"/> Trending topics <input type="checkbox"/> Anniversaries <input type="checkbox"/> Other <input type="checkbox"/> None	The post is about a brand/ product that has new packaging for Christmas, or the post suggests that a brand of hot chocolate should be consumed now that winter is approaching, or the influencer/ brand is taking part in a viral challenge that is trending online.	Tafesse and Wien. 2017
53	Which personal themes can be seen in this post?	<input type="checkbox"/> Family <input type="checkbox"/> Friendship <input type="checkbox"/> Other <input type="checkbox"/> None	The post displays imagery of how the product can be shared with family or friends.	Tafesse and Wien. 2017
54	Does this post contain a call to action, such as following the account, following a new brand account or encouraging others to follow the account?	<input type="radio"/> Yes <input type="radio"/> No	The post requires users to tag their friends in the comments or follow the product/ brand/ new account or their accounts on other social media platforms.	Tafesse and Wien. 2017
55	Is this post related to social causes?	<input type="radio"/> Yes <input type="radio"/> No	The post shows a brand's support to a charity or organisation and encourages their followers to donate to these causes or to buy the brand's products and they will donate to the causes on the customers behalf.	Tafesse and Wien. 2017
56	Does this post make reference to more traditional forms of marketing?	<input type="radio"/> Yes <input type="radio"/> No	The post mentions advertising on TV/ radio, flyer distributions or magazine/ newspaper advertising.	



57	Is there a reference in this post in relation to a celebrity?	<input type="radio"/> Yes <input type="radio"/> No	The product is in collaboration with a celebrity. Eg. Travis Scott meal collaboration with McDonald's.	
58	Does the brand try to resonate with their audience by using one of the following?	<input type="checkbox"/> Celebrity endorsement <input type="checkbox"/> Brand image <input type="checkbox"/> Brand heritage <input type="checkbox"/> Other <input type="radio"/> None	The post aims to be relatable by having a popular celebrity endorse the product/brand or to show that the product/brand has an image of luxury or high quality or the product/brand is trusted by older generations.	Tafesse and Wien. 2017
59	Does this post aim to build customer relationships through customer service or customer testimony?	<input type="radio"/> Yes <input type="radio"/> No	The brand posts customer reviews or a scenario where they went above and beyond to improve a customer's experience with the brand or product.	Tafesse and Wien. 2017
Additional marketing appeals				
60	Does this post reference school?	<input type="radio"/> Yes <input type="radio"/> No	The post mentions attending school, school supplies or school activities.	
61	Does this post reference sport?	<input type="radio"/> Yes <input type="radio"/> No	The post mentions sporting events, sports teams, sports persons or sporting equipment.	
62	Does this post make use of special effects?	<input type="radio"/> Yes <input type="radio"/> No	The post uses filters, video editing or audio editing or sound effects to appeal to a younger audience. E.g. filters that change a person's appearance to look like an animal/ like they're wearing make-up, wigs, accessories. Zooming in and out to the beat of music or video transitions. Sound effects to alter someone's voice or exaggerate the sounds the product would make.	
63	Does this post contain any reference to fantasy and/ or magic?	<input type="radio"/> Yes	Items or images associated with fantasy and magic can be seen in the post. E.g. a wand, stars, planets, mythical	

		<input type="radio"/> No	creatures.	
64	Does any part of the product make reference to a cartoon, animation, computer icon or an emoji?	<input type="radio"/> Yes <input type="radio"/> No	A cartoon from a TV show, animations from TV shows or other drawings, smiley face emojis, etc.	
65	Are these graphics personified?	<input type="radio"/> Yes <input type="radio"/> No	<p>If yes to 63, this question populates.</p> <p>The emoji, computer graphics or animation has human characteristics.</p>	
66	Does the product contain any characters from a licensed program?	<input type="radio"/> Yes <input type="radio"/> No	<p>If yes to 63, this question populates.</p> <p>Characters are from a movie/ TV show, etc.</p>	
67	Can the product be depicted as a game or toy?	<input type="radio"/> Yes <input type="radio"/> No	<p>If yes to 63, this question populates.</p> <p>The product is a registered trademark or symbol for a non-food brand or idea. E.g. The apple icon on an iPhone.</p>	
68	Is the product a symbol for a non-food item?	<input type="radio"/> Yes <input type="radio"/> No	<p>If yes to 63, this question populates.</p> <p>The product is a registered trademark or symbol for a non-food brand or idea. E.g. The apple icon on an iPhone.</p>	

## Appendix 3: Information Sheet for Online Survey



### UNIVERSITY OF THE WESTERN CAPE

Private Bag X17 BELLVILLE 7535 South Africa Telegraph: UNIBELL

Telephone: 27 021 959-2760 Fax: 27 021 959-3686

Email: [3266144@myuwc.ac.za](mailto:3266144@myuwc.ac.za)

### DIETETICS AND NUTRITION

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## INFORMATION SHEET

### **Project Title: Social Media Influencers: Do they shape the nutrition behaviours of adolescents?**

#### **What is this study about?**

This is a research project being conducted by Lisa Deyce at the University of the Western Cape. We are inviting you to participate in this research project because you meet the participation criteria for the study. The purpose of this research project is to assess if social media influencers have an impact on the nutrition behaviours of young people.

#### **What will I be asked to do if I agree to participate?**

You will be asked to answer questions in the survey. The survey will be presented in English. Some answers can be chosen from a list of options, whereas others may require short sentences. The questions can be grouped into two sections. The first section consists of questions relating to social media use. The second section consists of demographic questions such as age, gender and economic status. This will assist in giving the researcher a better understanding of the differences in answers of section one, by each demographic factor. The survey will take approximately 20 minutes to complete. Once the initial survey is complete, there will be a second link where you can enter your name and email address to be entered into the lucky draw.

#### **Would my participation in this study be kept confidential?**

The researchers undertake to protect your identity and the nature of your contribution. To ensure your anonymity, the surveys are anonymous and will not contain information that may personally identify you. The link for the lucky draw is a separate form and is not linked to the answers recorded in the survey.

To ensure your confidentiality, all data is stored in a password protected electronic format. If we write a report or article about this research project, your identity will be protected.

#### **What are the risks of this research?**

There are no risks associated with this study.

#### **What are the benefits of this research?**

This research is not designed to help you personally, but the results may help the investigator learn more about how young people interact with social media and if they look for and use the nutrition information they find online, specifically by influencers they follow. We hope that, in the future, other people might benefit from this study through improved understanding of social media marketing by influencers and using social media to educate the youth on nutrition related topics.

**Do I have to be in this research and may I stop participating at any time?**

Your participation in this research is completely voluntary. You may choose not to take part at all. If you decide to participate in this research, you may stop participating at any time. If you decide not to participate in this study or if you stop participating at any time, you will not be penalized or lose any benefits to which you otherwise qualify.

**What if I have questions?**

This research is being conducted by Lisa Deyce (MSc student from the Department of Dietetics and Nutrition) at the University of the Western Cape. If you have any questions about the research study itself, please contact Lisa Deyce at: 3266144@myuwc.ac.za.

Should you have any questions regarding this study and your rights as a research participant or if you wish to report any problems you have experienced related to the study, please contact:

Prof Ernesta Kunneke  
Department of Dietetics and Nutrition  
University of the Western Cape  
Private Bag X17  
Bellville 7535  
[ekunneke@uwc.ac.za](mailto:ekunneke@uwc.ac.za)

Prof Anthea Rhoda  
Dean: Faculty of Community and Health Sciences  
University of the Western Cape  
Private Bag X17  
Bellville 7535  
[chs-deansoffice@uwc.ac.za](mailto:chs-deansoffice@uwc.ac.za)

This research has been approved by the University of the Western Cape's Humanities and Social Sciences Research Ethics Committee. REFERENCE NUMBER:

Humanities and Social Sciences Research Ethics Committee.  
University of the Western Cape  
Private Bag X17  
Bellville  
7535  
Tel: 021 959 4111  
e-mail: [research-ethics@uwc.ac.za](mailto:research-ethics@uwc.ac.za)

## Appendix 4: Ethical Approval



UNIVERSITY of the  
WESTERN CAPE



20 November 2020

Ms LA Deyce  
Dietetics and Nutrition  
Faculty of Community and Health Sciences

**Ethics Reference Number:** HS20/9/26

**Project Title:** Social Media Influencers: Do they shape the nutrition behaviours of adolescent.

**Approval Period:** 18 November 2020 – 18 November 2023

I hereby certify that the Humanities and Social Science Research Ethics Committee of the University of the Western Cape approved the methodology and ethics of the above mentioned research project.

Any amendments, extension or other modifications to the protocol must be submitted to the Ethics Committee for approval.

Please remember to submit a progress report by 30 November each year for the duration of the project.

*The permission to conduct the study must be submitted to HSSREC for record keeping purposes.*

The Committee must be informed of any serious adverse event and/or termination of the study.

Ms Patricia Josias  
Research Ethics Committee Officer  
University of the Western Cape

NHREC Registration Number: HSSREC-130416-049

Director: Research Development  
University of the Western Cape  
Private Bag X 17  
Bellville 7535  
Republic of South Africa  
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Email: research-ethics@uwc.ac.za

FROM HOPE TO ACTION THROUGH KNOWLEDGE.

## Appendix 5: Restaurants and Fast Food Outlets

<b>Fast Food Outlets</b>	<b>Restaurants</b>
Jack in the box	Aurum Restaurant
Starbucks	Coco Town Meat Lounge
Arby's	Emazulwini restaurant
Coffee bean	Garankuwa Shisanyama
Burger King	Jarryds coffee
California Pizza Kitchen	Moro Gelato
Carl's jr	Mullberry & Prince
Chick-fil-a	Nhlanhla Shisanyama
Wendy's	Ohmi gin bar
Dominos	Pie 2 Pie lounge
Dunkin Donuts	Potjie Sunday
Fresh brothers	Spur steak ranches
In-n-out	The Meat Lounge
KFC	Gratitude Restaurant
McCafe	Cheesecake Factory
McDonalds	Papa Johns
Nandos	Red Baron