From

FOOD MEDIA ENTERTAINMENT

To

FOOD LITERACY EDUCATION

An Investigation into Food Media Content, Food Media Exposure, and Food Literacy Among Emerging Adults

Lauranna Teunissen

Contact: lauranna.teunissen@uantwerpen.be or teunissenlauranna@gmail.com

ISBN: 978-94-6483-953-1

The research for this dissertation was financially supported by The Research Foundation Flanders (FWO) under grant number G047518N and Flanders Innovation & Entrepreneurship (VLAIO) under grant number HBC.2018.0397.

Cover design: Tom Kruijzen
Layout and design: Celia Leijten, persoonlijkproefschrift.nl

Provided by thesis specialist Ridderprint, ridderprint.nl
Printing: Ridderprint

Faculty of Social Sciences
Department of Communication Studies

From Food Media Entertainment To Food Literacy Education:

An Investigation into Food Media Content, Food Media Exposure, and Food Literacy Among Emerging Adults

Ph.D. thesis submitted for the degree of Doctor of Social Sciences at the University of Antwerp to be defended by Lauranna Teunissen.

Promotors:
Prof. Dr. Charlotte De Backer (University of Antwerp)
Prof. Dr. Heidi Vandebosch (University of Antwerp)
Prof. Dr. Christophe Matthys (KU Leuven)

Antwerp, 2024

Members of the doctoral committee:

Prof. Dr. Gert-Jan De Bruijn (University of Antwerp)

Prof. Dr. Tim Smits (KU Leuven)

Members of the external jury:

Prof. Dr. Liselotte Hudders (University of Ghent)

Dr. Monique Alblas (University of Amsterdam)

CONTENT TABLE

LIST OF FIGURES

Introduction

Part One

Chapter Two

Chapter Three

Part Two

Chapter Five

LIST OF TABLES

Introduction

Part One

Chapter One

Chapter Two

Chapter Three

Part Two

Chapter Four

Chapter Five

General Discussion and Conclusion

LIST OF ABBREVIATIONS

U&G	Uses and gratifications
GS	Gratifications sought
GO	Gratifications obtained
FMCG	Food media content gratifications scale
BCT	Behavioral change technique

INTRODUCTION

In the morning, as you wake up and reach for your smartphone, you start scrolling through the latest updates on social media. Among the various posts that catch your eye, you come across tantalizing images of delicious dishes. Throughout the day, as you go about your busy schedule at school or work, those mouthwatering food posts linger in your mind. When you finally return home after a long day, faced with the task of preparing a meal for yourself, you find yourself drawn back to the inspirational food media messages you encountered earlier this morning. Recalling those enticing dishes, you feel inspired to recreate one of them for your dinner. You take a moment to search for the recipe, make a shopping list for the necessary ingredients, head to the store, and gather everything you need. Back in your kitchen, you follow the steps of the recipe you found online. As you sit down to savor the meal you have just prepared, you realize the profound impact of the food media messages you encountered throughout the day. They not only inspired your choice of dinner but also guided you through the entire process, from planning, shopping, and cooking to eating. This simple yet powerful example showcases the ideal intersection of food and media, underscoring its significance in the context of contributing to emerging adults' food literacy.

Emerging adults, as they transition from adolescence to adulthood, experience increased independence, including in their food choices and behaviors (Arnett, 2014; Slater et al., 2018). Research shows that diet quality decreases during this transition (Nelson et al., 2008; Niemeier et al., 2006) and has placed emerging adults at risk of gaining weight and associated health conditions (Deforche et al., 2015; GBD 2015 Obesity Collaborators, 2017). Insufficient knowledge, skills, and self-efficacy related to various practicalities associated with healthy eating have been identified as contributing factors. Therefore, emerging adults need to acquire food literacy: knowledge, skills, self-efficacy, and behaviors required to plan, select, prepare, consume, and evaluate a healthy meal in ways that promote physical and psychological health (Vidgen & Gallegos, 2014). There is a need to explore innovative approaches to effectively engage and inform emerging adults, addressing the gaps in their food literacy. One promising avenue for achieving this goal is considering the role of food media messages.

Exploring the role of food and media is timely, as emphasized by the quote that "media practices play a central differentiated and differentiating role in people's everyday practices in relation to food, both in and outside home" (Leer & Povlsen, 2016, p. 3). This thought-provoking statement by Leer and Povlsen (2016) underscores the profound interconnectedness between food and media. Food is namely pervasive across a variety of media types (i.e., print, broadcast, and internet) in diverse formats, utilizing particular specific persuasive cues or production styles (Kirkwood, 2018; Lewis, 2020a). As such, exposure to food media messages is thus almost unavoidable. With regard to food literacy promotion, reaching emerging

adults through channels and content they already use and are willing to pay attention to may be a more effective way to deliver health messages, including ones that aim to promote food literacy (Snyder, 2007).

Guided by a Uses and Gratifications framework, the current dissertation aims to examine the selection of and exposure to food media messages, the characteristics of these messages, and their relation to emerging adults' food literacy. By delving deeper into these aspects, we can gain insights that might inform the design and dissemination of food media messages aimed at promoting food literacy tailored to the specific needs and desires of emerging adults.

This introductory chapter is divided into four sections. The first section begins by discussing the characteristics of emerging adulthood and summarizing the food-related behaviors and challenges faced by emerging adults. The second section focuses on defining and explaining the concept of food literacy, highlighting the specific competencies required for emerging adults. Additionally, this section provides an overview of previous interventions targeting food literacy. Moving on, the third section explores the realm of food media messages, describing their nature and characteristics within the current landscape. The fourth section of the introduction reviews prior research on the effects of food media messages, followed by the presentation of the overarching theoretical framework of this dissertation. Finally, a brief overview of the objectives and structure of the dissertation will be provided.

1 Emerging Adulthood & Their Food-Related Behaviors

1.1 Defining Emerging Adulthood

In the past, it was common for people, typically around 20, to be married, have completed their education, and either have children or be planning for them. They typically grew up faster and made significant long-term decisions at a young age. In contrast to the past, by the year 2000, these major life events had been delayed until later in life, especially in the United States and other industrialized countries (Arnett, 2000). In Belgium, for instance, the mean age to get married is now 33.6 years (STATBEL, 2023), while the average age to have a child is 29.3 years (STATBEL, 2020), and the age at which one permanently leaves one's parental home is around 25 years (Centraal Bureau voor de Statistiek, 2019; Thu, 2022). Young people now move more gradually towards making enduring choices and use the in-between time to explore different options; however, with some anxiety as many of them have no idea where their explorations will lead (Arnett, 2015). As such, the shift in these demographic changes reflects that the road to adulthood is now longer and has led to a specific focus on the life stage between adolescence and adulthood, known as emerging adulthood (Arnett, 2000, 2014).

Emerging adulthood is recognized as a distinct period of development that falls between adolescence and adulthood (Arnett, 2000, 2014). While the starting point of this period is often considered to be the age of 18, when individuals are no longer legally required to live under the supervision of their parents or guardians, there is less agreement about when it officially ends. Some previous research has included individuals up to the age of 25 or even 29. However, many scholars argue that rather than only being defined by age, the boundaries of emerging adulthood are better understood as socio-cultural markers or developmental milestones (Freeman et al., 2016; Syed, 2016). For instance, Arnett proposed five main features that distinguish emerging adulthood developmentally from adolescence and adulthood: identity exploration (exploring possibilities in the areas of love, work, and worldviews), possibilities and optimism (many different futures are open), instability (primarily in terms of residence changes and financially), self-focused (living with less daily obligations and commitments to others), and feeling in-between (not yet feeling like an adult, but no longer considering oneself as a child) (Arnett et al., 2011; Syed, 2016). Others focus on specific milestones that signal greater independence, such as attending college, moving out of the family home, or learning to buy and prepare one's food (Freeman et al., 2016; Syed, 2016). The milestone of taking responsibility for one's food intake is of particular interest in the present dissertation.

Previous research has shown that individuals begin to engage in more independent food-related behaviors around the age of 18 (Stok et al., 2018; Vanderlee et al., 2018). This may be due, in part, to the fact that many individuals finish high school around this age and begin pursuing further education, often living more independently in a campus setting (Nelson et al., 2008; Wilson et al., 2017). However, it is not only college-going youth who learn to take care of themselves during this period; even those who are not pursuing further education or who continue to live with their parents often become more involved in individually preparing meals and managing their food intake (Vidgen & Gallegos, 2014; Wilson et al., 2017). Furthermore, research has identified the age range of 18 to 25 as the "*prime setting for health promotion intervention*" with regard to food-related behaviors (Nelson et al., 2008, p. 2210). This age range has been frequently used to investigate the food-related behaviors of emerging adults (e.g., Poobalan et al., 2014; Sogari et al., 2018; Stok et al., 2018). Therefore, while the beginning or end points of emerging adulthood can differ in other research contexts, for the purposes of the current dissertation, we will consider emerging adults to be those aged between 18 and 25.

1.2 The Challenge of Navigating Food Choices in Emerging Adulthood

The road to adulthood is often described as a winding path marked by newfound independence and autonomy as well as new challenges and responsibilities, making it sometimes difficult to navigate (Arnett, 2014). As emerging adults navigate the complex landscape of adulthood, they have greater autonomy, including

over their food choices, which can have long-lasting impacts on their health and well-being (Nelson et al., 2008). Unfortunately, research shows that diet quality decreases during the transition to adulthood (Forshee & Storey, 2006). Compared to adolescents, emerging adults tend to consume fewer fruits and vegetables (Deforche et al., 2015), have an increased fast food intake (Niemeier et al., 2006), and regularly skip breakfast (Niemeier et al., 2006). Next to these unfavorable changes, emerging adults eating patterns, in general, often show poor alignment with dietary recommendations (Collins et al., 2022) and have been observed with the lowest diet quality compared to any other age group (Imamura et al., 2015). For instance, emerging adults consume more energy-dense, nutrient-poor foods and sugar-sweetened beverages (Allman-Farinelli et al., 2016; Han & Powell, 2013; Powell et al., 2019) and have inadequate fruit and vegetable intake (Bernardo et al., 2021; Powell et al., 2019). Moreover, these dietary patterns have been associated with less frequent food preparation at home and increased consumption of food prepared away from home (Larson et al., 2006). These behaviors ensured that emerging adulthood was recognized as a health risk period marked by risks of weight gain and associated health conditions (Deforche et al., 2015; GBD 2015 Obesity Collaborators, 2017; Nelson et al., 2008). As these unhealthy eating patterns in emerging adulthood may well continue into adulthood, resulting in enduring issues of overweight and obesity, reduced quality of life, and diet-related non-communicable diseases, emerging adulthood is a crucial period for investing in interventions (Nelson et al., 2008).

In this context, it is important to understand which factors emerging adults drive into these unhealthy behaviors. Previous research has identified different individual- (e.g., lack of food knowledge, skills, and self-efficacy), interpersonal- (e.g., social influences), environmental- (e.g., availability of unhealthy food), and policy-level (e.g., governmental regulations) factors that drive emerging adults' eating behavior or changes during the transition (Sogari et al., 2018; Stok et al., 2018). From these factors, it is especially important to focus on food-related knowledge, skills, and self-efficacy for everyday eating, as these have higher modifiability rates compared to other factors (Stok et al., 2018). Moreover, emerging adults often lack competence in these aspects, which are strongly associated with better diet quality (Hilger-Kolb & Diehl, 2019; Kabir et al., 2018; Larson et al., 2006; Munt et al., 2017; Utter et al., 2018; Wilson et al., 2017). Therefore, it is crucial that interventions also focus on enhancing emerging adults' various food-related knowledge, skills, and self-efficacy to navigate these tasks successfully.

1.2.1 Food-Related Knowledge, Skills, And Self-Efficacy

The food-related knowledge, skills, and self-efficacy required to perform daily eating practices successfully (1) are often applied in research separately, (2) focusing on specific topics (e.g., cooking skills and nutrition knowledge), resulting in (3) separate investigations of emerging adults' knowledge, skills, and self-efficacy.

First, knowledge, skills, and self-efficacy are often used as separate concepts in research, with food-related knowledge and skills often gaining more attention than self-efficacy (Begley & Vidgen, 2016). However, knowledge, skills, and self-efficacy are highly interrelated, and interventions would be more impactful when covering all three elements (McGowan et al., 2017; Vidgen & Gallegos, 2014). For instance, consider a scenario where an individual has the culinary knowledge and skills to prepare a Caesar salad. However, if they lack the confidence to execute the recipe (i.e., self-efficacy), they might choose not to attempt making the salad at all. This underscores how, even when knowledge and skills are present, self-efficacy significantly plays a role in shaping actions. Therefore, recognizing the interrelated relationship among these elements becomes imperative for comprehensive analysis and effective interventions.

Secondly, previous research has applied knowledge, skills, and self-efficacy to specific food-related topics (Begley & Vidgen, 2016; McGowan et al., 2017; Vidgen, 2014). Concerning knowledge, most research has focused on declarative ("what is") and functional knowledge ("how to") about nutrients and nutrition, known as nutrition knowledge (Worsley, 2002). Other types of knowledge, such as food preparation knowledge and food safety knowledge, have been researched less frequently (Byrd-Bredbenner, 2004; McGowan et al., 2017). Next, with regard to skills, former research has mainly distinguished between food and cooking skills. Food skills refer to the range of practical activities (e.g., meal planning, grocery shopping behaviors) that need to be undertaken to eat (Fordyce-Voorham, 2009, p. 17). Cooking skills (i.e., a set of mechanical or physical skills used in meal preparation, such as chopping, mixing, or heating (Short, 2003)) are often viewed as a subset of food skills, focusing specifically on meal preparation (Lavelle et al., 2020). Finally, self-efficacy is the belief in one's capabilities to perform a certain behavior and is considered a significant contributor to performing health behaviors, along with knowledge and skills (Bandura, 1977; Strecher et al., 1986). Self-efficacy relates to specific behaviors (Strecher et al., 1986). In the context of food-related behaviors, different forms of self-efficacy have been differentiated, namely cooking, food, nutrition, and healthy eating self-efficacy (Clifford et al., 2009; Ellis et al., 2018; Knol et al., 2019; Thomas et al., 2019).

As such, these specific knowledge, skills, and self-efficacy forms have also been researched separately among emerging adults. For instance, regarding nutrition knowledge, emerging adults, especially students, have been found to have average nutritional knowledge (Quaidoo et al., 2018), with males scoring lower than females (Yahia et al., 2016). Furthermore, knowledge about food preparation and safety has also been found to be insufficient among emerging adults (Byrd-Bredbenner, 2004; McGowan et al., 2017). In terms of skills, previous research has mostly focused on emerging adults' food preparation and cooking skills, which are generally found to

be fair to inadequate, especially among male emerging adults and those living with parents or in residences (Byrd-Bredbenner, 2004). However, when emerging adults self-rate their food preparation skills, they often indicate to have sufficient skills but still have plenty of room for improvement (Larson et al., 2006; Lavelle et al., 2020; Utter et al., 2018), especially in more complex areas such as meal planning (Wilson et al., 2017). Finally, regarding self-efficacy, previous research has found that emerging adults generally have adequate beliefs in themselves to eat fruit and vegetables and perform cooking (Clifford et al., 2009; Knol et al., 2019).

To summarize, the food-related knowledge, skills, and self-efficacy required to perform daily eating practices successfully are often studied separately, focusing on specific topics (e.g., cooking skills and nutrition knowledge) that point out some important shortcomings. First, knowledge, skills, and self-efficacy are highly interconnected, meaning that all three must be focused on. Secondly, previous research has focused on these aspects in specific food-related behaviors, mostly on cooking. However, since eating is a daily activity that involves a range of tasks such as food planning, grocery shopping, selecting food products, meal preparation, and more, it requires a broad set of food-related knowledge, skills, and self-efficacy to establish and maintain a healthy relationship with food. In response to the need for a more comprehensive and holistic approach, the concept of *food literacy* has emerged. Food literacy is a comprehensive concept that acknowledges the interrelated combination of knowledge, skills, and behaviors needed for various practicalities associated with food (including food and cooking skills) (Slater et al., 2018; Vidgen & Gallegos, 2014).

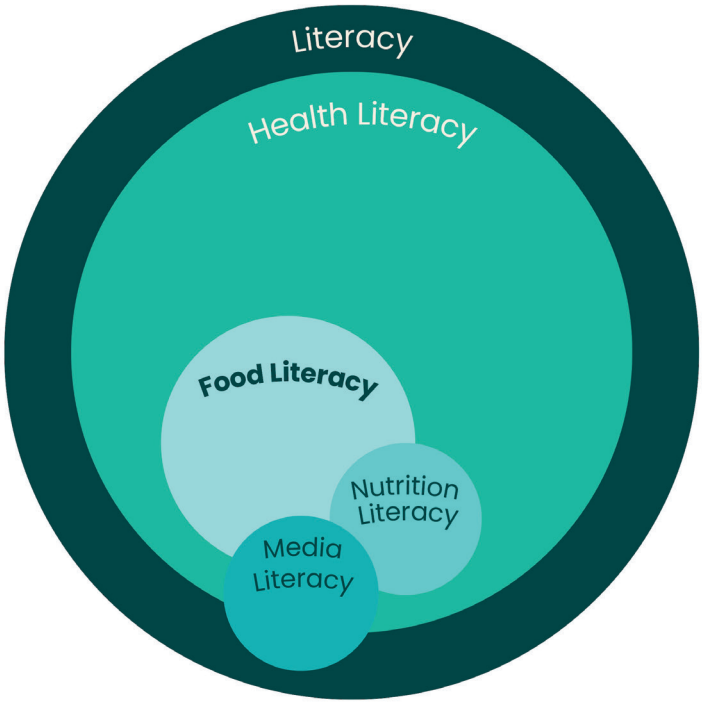
2 Enhancing Emerging Adults' Food Literacy

2.1 Defining Food Literacy

The term "*food literacy*" first appeared in the academic literature in 1998 and has gained well-received worldwide research interest since 2014, mostly in disciplines related to nutrition, dietetics, and public health (Thompson et al., 2021). Food literacy has emerged to describe the everyday, bare-bones skills needed to effectively navigate the food system and ensure a healthy, sustainable, and gastronomic lifelong relationship with food (Boedt et al., 2021; Cullen et al., 2015; Vidgen & Gallegos, 2014). Food literacy encompasses a more comprehensive approach to food education, which has been argued to be more efficient than nutrient-centered education practices (Smith, 2009; Vidgen, 2016c). While nutrient education focuses on the importance of nutrients necessary for the body to function properly and emphasizes that food choices should meet these nutritional needs, food literacy extends beyond food intake. It includes food management, planning, production, selection, preparation, and evaluation to make informed decisions about food and eating practices (Begley & Vidgen, 2016).

Food literacy is often used in the literature alongside related concepts such as health, media, and nutrition literacy (Truman et al., 2020; Velardo, 2015). These interconnected concepts collectively play a crucial role in the promotion of health and well-being, however, each with their own specific focus (Truman et al., 2020). Health literacy, nutrition literacy, and food literacy all describe a spectrum of skills, knowledge, and abilities necessary to make informed and appropriate decisions that enhance one's health (Krause et al., 2018; Truman et al., 2020; Velardo, 2015). While health literacy pertains to the ability to obtain, process, understand, and utilize health information and services to make appropriate health decisions (Murimi, 2013; Nutbeam, 2000), food literacy is considered a distinct form of health literacy that explicitly focuses on health literacy skills within a food-specific context (Velardo, 2015). Nutrition literacy, focusing on the comprehension and utilization of nutrition information for making healthy dietary choices, is often regarded as a subset of food literacy (Krause et al., 2018; Thomas et al., 2019; Vettori et al., 2019). In addition, media literacy is a broader concept aimed at developing critical skills necessary for accessing, interpreting, analyzing, evaluating, and creating messages across various media platforms (Aufderheide, 2018; Livingstone, 2004; Potter, 2010). While media literacy is frequently applied in health contexts to shield individuals from potential negative media effects (Potter, 2010; Truman et al., 2020), it also plays an essential role in the concepts of food and nutrition literacy (Boedt et al., 2021; Fox & Marinescu, 2020). The intersection of media and food/nutrition literacy emphasizes the importance of obtaining and evaluating food- and nutrition-related information and media messages, recognizing how media shape perceptions of food, nutrition, and health, and enabling individuals to make informed dietary decisions based on media content (Boedt et al., 2021; Fox & Marinescu, 2020; Truman et al., 2020). In essence, health, nutrition, media, and food literacy are interconnected pillars that each have a unique focus to collectively empower individuals to be healthier and more informed (Truman et al., 2020). It is worth noting that the relative importance of each type of literacy varies depending on an individual's life stage and the specific situations and challenges they encounter (Barton & Hamilton, 2005). For emerging adults, who often face the responsibility of managing everyday food-related matters independently for the first time, food literacy becomes increasingly crucial (Slater et al., 2018).

Figure 1. Mapping different literacy types related to health



2.1.1 Food Literacy Definitions and Domains

Since the first appearance of the term food literacy, a plethora of different food literacy definitions have come forth (Truman et al., 2017). According to Thompson et al. (2021), 51 different definitions of food literacy are circulating, with some variations in the core domains. These core domains include (1) skills and behaviors, (2) food and health choices, (3) culture, (4) knowledge, (5) emotions, and (6) food systems. The first domain is "skills and behaviors," which involves physical actions or food-related abilities. The second domain is "food/health choices," which refers to informed decision-making around food use. The third domain is "culture," which encompasses the societal aspects of food. The fourth domain is "knowledge," which refers to the ability to understand and seek information about food, including nutrition education. The fifth domain is "emotions," which covers the influence of attitudes and motivation on food choices and behavior. Finally, the sixth domain is "food systems," which involves understanding the complexity of food systems, including environmental impact, food waste, food safety, and other related factors. Overall, food literacy definitions cover these six themes in varying degrees (Thompson et al., 2021; Truman et al., 2017). Some researchers have also described these themes in light of Nutbeam's three levels of literacy (2000), namely

functional (i.e., basic food and nutritional competencies), interactive (i.e., social competencies in relation to food), and critical food literacy (i.e., more advanced competencies, including understanding and evaluating critical food issues and food systems) (Krause et al., 2018; Slater et al., 2018; Smith, 2009). However, despite the variations in or the different wordings of the domains, it is important to understand that food literacy is a multifaceted concept that should focus on the (1) interrelated knowledge, skills, self-efficacy, and behaviors of (2) various practicalities associated with healthy eating.

Firstly, it is essential to conceptualize food literacy not merely as knowledge but also as encompassing skills, self-efficacy, and behaviors, which has garnered support from several researchers (Perry et al., 2017; Slater et al., 2018; Thomas et al., 2019; Vidgen & Gallegos, 2014). While many definitions of food literacy tend to focus on knowledge alone, an increasing number of conceptualizations incorporate a range of aspects such as knowledge, skills, self-efficacy, and behaviors (Boedt et al., 2021; Truman et al., 2017). This is essential as it is not only important to know (e.g., what is a nutritious recipe?) but also to have skills (e.g., the ability to prepare a nutritious recipe), the self-efficacy to perform the behavior (e.g., confidence and motivation to prepare a nutritious recipe), and effectively perform the behavior (e.g., prepare the nutritious recipe) (Thomas et al., 2019; Truman & Elliott, 2019).

Secondly, these competencies are needed for various practicalities associated with healthy eating (Rosas et al., 2019; Thomas et al., 2019). The definition of Vidgen & Gallegos (2014) has been the most cited definition and is recognized as the most inclusive one (Thompson et al., 2021; Truman et al., 2017). Their conceptualization proposes four general domains with specific components, namely: (1) plan and manage, (2) select, (3) prepare, and (4) eat (Vidgen & Gallegos, 2014). Other studies have suggested additional domains and components or made Vidgen & Gallegos' components more concrete to specific contexts (Rosas et al., 2019; Slater et al., 2018; Thompson et al., 2021).

This is because not every individual needs the same food literacy competencies (refers to the food literacy-related knowledge, skills, self-efficacy, and behaviors), and the specific content of the domains can differ over a person's life course (Cullen et al., 2015; Vidgen, 2016a). First, the competencies related to food literacy may differ depending on one's cultural background, such as socioeconomic status or geographic location. For example, a person with a lower income may need to learn how to stretch their food budget and make nutritious meals with limited resources. In comparison, a person with a higher income may need to learn how to navigate a range of specialty food options. Second, food literacy should be viewed as a *"no-end competence,"* meaning that different competencies or levels are needed during a life course depending on individual or environmental changes (Cullen et

al., 2015; Vidgen, 2016a). For example, a person may develop basic food preparation knowledge and skills and knowledge during emerging adulthood, but as they age and experience changes in their health status or dietary needs, they may need to develop more advanced or other cooking skills and a deeper understanding of how to manage chronic health conditions through diet. Similarly, changes in environmental factors such as food availability and affordability, cultural influences, or shifts in dietary trends may require individuals to develop new competencies to adapt and make informed food choices (Vidgen, 2016a).

Additionally, when discussing the components of food literacy, the different components that make up food literacy are interdependent (Thomas et al., 2019; Vidgen, 2016a; Vidgen & Gallegos, 2014). This means that the absence or weakness of one component may require the strengthening of another component to maintain diet quality (Vidgen, 2016a). For example, if an individual has poor food preparation skills and relies heavily on food prepared by others (such as fast food or pre-packaged meals), their understanding of food selection (e.g., understanding where food comes from, how it is produced) may become more important to uphold dietary quality.

To conclude, food literacy is a multifaceted concept for which there is no consensus on a definition and associated domains and components. However, in general, and in this dissertation, food literacy is viewed as the interrelated combination of knowledge, skills, self-efficacy, and behaviors required for daily food and eating practices needed for a healthy, sustainable, and gastronomic lifelong relationship with food. Additionally, the day-to-day food-related practicalities are reflected in specific food literacy domains and components. However, the question arises if there should be a consensus about the food literacy components, as the food literacy components are context and culturally dependent. Given that specific food literacy competencies may differ over one's life course, we will emphasize the specific food literacy competencies relevant to emerging adults.

2.2 Food Literacy for Emerging Adults

2.2.1 Essential Food Literacy Competencies

As outlined in the former paragraph, the specific food literacy competencies or attributes are context and culturally dependent; it is, therefore, important to understand the specific food literacy competencies needed for emerging adults (Slater et al., 2018; Vidgen, 2016a). Emerging adults are in need of specific food literacy competencies to navigate the complexities of their relationship with food. To map the different food literacy competencies for emerging adults, the four general food literacy domains (i.e., plan and manage, select, prepare, and eat) proposed by Vidgen and Gallegos (2014) will figure as an overarching framework to

group specific food literacy competencies. Additionally, we propose one additional domain, namely: *Evaluate*. An overview of the food literacy competencies, based on the insights of previous research (e.g., Colatruglio & Slater, 2016; Slater et al., 2018), needed for emerging adults can be consulted in Table 1.

The first domain, "plan and manage," involves individuals prioritizing planning, time, and money for food and having a plan to ensure this happens to make feasible food decisions (Vidgen, 2016a; Vidgen & Gallegos, 2014). This domain is crucial for emerging adults to acquire competency. Previous research has highlighted that many emerging adults struggle to plan and manage their food intake effectively, but they recognize that planning helps them eat healthily (Colatruglio & Slater, 2016; Munt et al., 2017). In particular, emerging adults report that their planning and management skills are weaker than other food literacy competencies (Wilson et al., 2017). Additionally, emerging adults often identify a lack of time and an inability to manage their food budget as significant barriers to healthy eating (Colatruglio & Slater, 2016). Therefore, emerging adults must acquire sufficient planning and management competencies to overcome these challenges.

The second domain, "select," involves the ability, knowledge, and skills to access food from multiple sources, determine the origin of the food product, how to properly store and use it, and evaluate the quality of food and food labels (Vidgen, 2016a; Vidgen & Gallegos, 2014). While emerging adults may not prioritize food selection and acquisition competencies, they are recognized as important skills to acquire (Slater et al., 2018; Vidgen, 2016a). With emerging adults now often shopping for groceries on their own (Vanderlee et al., 2018), understanding how to select foods based on quality, seasonality, and nutrients, among others, is becoming increasingly vital. Additionally, as highlighted in section 1.2.1, emerging adults often lack nutrition knowledge, making it an important competency to consider in this life phase.

The third domain is "prepare," which refers to basic knowledge of food hygiene and handling and the ability to create tasty and nutritious meals using whatever ingredients and kitchenware are available (Vidgen, 2016a; Vidgen & Gallegos, 2014). First, previous research has highlighted that emerging adults often lack food safety handling and knowledge, especially males more than females (Abbot et al., 2009; Barrett & Feng, 2020; Green & Knechtges, 2015). Emerging adulthood is seen as an important life phase to obtain these competencies as they are or may soon be responsible for preparing meals for themselves and others (e.g., family, newborns) (Abbot et al., 2009; Green & Knechtges, 2015). Second, emerging adults are also in need of basic food preparation competencies. As highlighted in section 1.2.1, many emerging adults lack these skills and prepare less frequent meals at home (Larson et al., 2006). It is especially important for them to learn how to prepare meals within the constraints of their available resources, such as kitchen materials and

ingredients (Slater et al., 2018; Vidgen & Gallegos, 2014). Emerging adults often face barriers such as insufficient resources and the unavailability of required ingredients or kitchen materials to prepare meals (Howse et al., 2018; Malan et al., 2020; Sogari et al., 2018). Additionally, they often experience that available recipes may require ingredients or kitchen materials that are not readily available (Teunissen et al., 2023), as such it is necessary for emerging adults to learn how to make meals with the resources they have available and to adapt recipes as needed (e.g., substitute ingredients or modify cooking methods based on what they have available).

The domain "eat" emphasizes both the act of eating and the consequences of eating on health and well-being (Vidgen, 2016a; Vidgen & Gallegos, 2014). Eating and sharing meals is an important part of building relationships and social inclusion (Vidgen, 2016a). The life phase of emerging adulthood often leads to new situations regarding how and with whom they can consume food (Arnett, 2014; Vidgen, 2016a). For instance, emerging adults living independently without roommates no longer have the standard of eating meals with others, for instance, as they may have had during adolescence. Given these new situations of consuming meals, it is essential for emerging adults to acquire relational competencies at this stage of their lives (Slater et al., 2018). Moreover, it is vital for them to understand the significance of food and its impact on their health and well-being (Vidgen, 2016a). During emerging adulthood, health is often considered less important, which can also affect their food-making decisions, making it crucial for them to gain competencies in understanding how food plays a role in their health (Hebden et al., 2015; Malan et al., 2020; Marquis, 2005).

Along the four overarching domains of Vidgen and Gallegos (2014), we propose the addition of another domain: "Evaluate." This domain considers the competencies needed to obtain, understand, critically assess, and apply information from food-related (media) messages. Although some food literacy definitions consider the role of evaluating food-related messages and information, it is not necessarily seen as a distinct domain (Slater et al., 2018; Truman et al., 2020). However, as evaluating food-related messages and information transcends other food literacy components, we argue to see "evaluate" as a separate, distinct food literacy domain, as Boedt et al. (2021) also suggest. Broadening the domains of food literacy to include competencies regarding food-related (media) evaluation is essential in today's world, where people, especially emerging adults, are overwhelmed with messages about food through various media channels (Fox & Marinescu, 2020; Kirkwood, 2018). It is, therefore, crucial for individuals to be able to obtain, understand, critically process, and apply information from food-related media messages and information in order that individuals can make informed decisions about their food choices and understand the impact of food media messages on their dietary habits (Boedt et al., 2021; Fox & Marinescu, 2020; Slater et al., 2018; Truman et al., 2020).

Table 1. Overview Food Literacy Competencies For Emerging Adults

Food Literacy Domain	Subdomain	Food Literacy Competencies for emerging adults *Being able to*
Plan & Manage	**1. Food planning knowledge and skills**	1.1 plan food intake ahead 1.2 make a grocery shopping list 1.3 make a week menu 1.4 making time to access healthy food, prepare a healthy meal, and eat 1.5 access healthy food, prepare a healthy meal, and eat within the available time
	2. Food budgeting knowledge and skills	2.1 develop a food budget 2.2 select healthy food and prepare a healthy meal within the available budget
Select	**3. Food selection and acquisition of knowledge and skills**	3.1 access food through multiple sources 3.2 select and vary in ingredients to compose a healthy meal 3.3 select foods based on the origins and seasonality 3.4 read and understand food packages and labels 3.5 judge the quality of food 3.6 select new, diverse, and cultural foods to compose a healthy meal
	4. Basic nutrition knowledge	4.1 understand the nutritional composition of food 4.2 understand food groups and portion sizes
Prepare	**5. Food safety and food hygiene knowledge and skills**	5.1 prepare and store food safely 5.2 apply cleaning procedures

Table 1. Overview Food Literacy Competencies For Emerging Adults (continued)

Food Literacy Domain	Subdomain	Food Literacy Competencies for emerging adults *Being able to*
	6. Basic food preparation knowledge and skills	6.1 prepare healthy meals with basic/ available ingredients, basic/available kitchen tools 6.2 read/follow and adapt a recipe 6.3 reduce food waste
Eat	**7. Eating with others**	7.1 eat food with others 7.2 share food with others
	8. Impact of food	8.1 understand that food has an impact on personal well-being 8.2 understand the benefits of healthy eating 8.3 understand to eat sufficient vegetables, fruits, whole grains, nuts, and legumes and drink enough water 8.4 understand to eat consciously and not too much
Evaluate	**9. Evaluating food-related media messages and information**	9.1 find and access information about a healthy diet (e.g., appropriate recipes, nutrition information) through different sources 9.2 understand information about a healthy diet 9.3 critically process information about a healthy diet 9.4 apply information about a healthy diet

Note. This table serves as an overview of the food literacy competencies (including knowledge, skills, self-efficacy, and behaviors), based on previous research, that are relevant for emerging adults, described in detail above in the text. These food literacy competencies are particularly relevant to emerging adults but can also hold significance for other demographic groups.

2.2.2 Barriers

As highlighted in the previous sections, it is important that emerging adults improve specific food literacy competencies. However, the acquisition and use of these competencies can be hindered by some barriers. These barriers should be taken into account when making efforts to promote food literacy competencies specific to emerging adults. Truman and Elliott (2019) identified the lack of resources and the socio-cultural context as the two most important barriers to food literacy proficiency. These barriers also encompass specific challenges faced by emerging adults.

First, regarding the lack of resources, emerging adults' most frequently reported barriers are time, financial, and material constraints. One of the main challenges emerging adults face is balancing food-related responsibilities, school, work, and leisure time. This often leads to a perceived lack of time to engage in food-related activities such as planning meals, grocery shopping, and cooking (Colatruglio & Slater, 2016; Malan et al., 2020). Additionally, emerging adults frequently have limited financial resources (Arnett, 2014), which have been cited as a barrier to purchasing and preparing healthy foods. Finally, many emerging adults do not have access to a fully stocked kitchen, which they perceive as a barrier to cooking meals (Malan et al., 2020). Previous research has found that these constraints affect unhealthy food-related behaviors, such as increasingly preparing convenience foods, consuming fast food, and skipping meals (Colatruglio & Slater, 2016; Escoto et al., 2012; Malan et al., 2020). Moreover, these barriers can negatively affect food literacy acquisition and use (Truman & Elliott, 2019).

Second, the socio-cultural context of emerging adulthood can also be a significant barrier to acquiring and using food literacy competencies. Emerging adults are known to be more susceptible to peer pressure and influence than older adults, and their social interactions can affect their food choices (Stok et al., 2016). Emerging adulthood is a period of identity formation, and emerging adults often try to fit in with their peers, gain peer approval, and live up to peer expectations (Arnett, 2014). Eating practices are one way young people attempt to establish and express their identity, which can lead to adjusting their eating-related behaviors (Stok et al., 2016). The food-related behaviors of the influential people in emerging adults' lives can both create opportunities for interventions to promote food literacy and act as a barrier. On the one hand, the use of peers as message sources can provide an opportunity for interventions to promote food literacy (Qutteina, Smits, et al., 2022). However, on the other hand, this context can also act as a barrier to acquiring food literacy, as peer influence can lead to unhealthy food choices. For example, emerging adults may feel pressured to consume high-calorie fast food to fit in with their peers, even though they understand the importance of healthy eating.

Therefore, it is important to take this potential barrier into account when designing interventions to promote food literacy among emerging adults.

2.2.3 Previous Food Literacy Interventions

Former food literacy interventions have differed in terms of target groups, study designs, food literacy attributes, durations, setting and activities, and program evaluations (Bailey et al., 2019; Brooks & Begley, 2014; Cullerton et al., 2012; Wickham & Carbone, 2018). Regarding target groups, food literacy interventions have mainly addressed children and adolescents (Brooks & Begley, 2014; Kelly & Nash, 2021; Vettori et al., 2019) and less emerging adults (Bevan et al., 2019). To our knowledge, only two interventions that targeted emerging adults described themselves as a food literacy program (Bevan et al., 2019; Rees et al., 2022). Other interventions have not positioned themselves as food literacy programs but include food literacy domains (e.g., food preparation skills and nutrition knowledge). As food literacy programs for emerging adults are scarce, we also included interventions targeting domains of food literacy among emerging adults to evaluate former interventions.

The few programs that addressed emerging adults have been limited to college or university students and have taken the form of cooking classes within a school setting (i.e., either as part of the curriculum or school-associated programs), focusing mainly on practical food preparation skills and nutritional knowledge (Bernardo et al., 2018; Bevan et al., 2019; Ellis et al., 2018; Ha & Caine-Bish, 2009; Levy & Auld, 2004). These previous interventions show important shortcomings in terms of target populations, how these interventions attempt to reach emerging adults, and what aspects of food literacy they address.

First, food literacy interventions should not be limited to a school-going population. While this population is an important target audience, it is important to consider that there are other emerging adult groups, such as those who do not have access to educational opportunities or who have dropped out of school, who would also benefit from food literacy interventions, perhaps the most (Vidgen, 2016b). Therefore, it is important to design interventions accessible to a wider range of emerging adults to ensure that more vulnerable emerging adult groups are not left behind and have access to food literacy programs.

Secondly, using hands-on cooking classes can also be questioned in terms of reaching emerging adults cost-effectively. Namely, cooking classes have a potential for selection bias, as they are likely to be of interest to young people who already have an interest in cooking and a base level of skills rather than those who are perhaps in greater need (Hasan et al., 2019; Reicks et al., 2014; Vidgen, 2016b). Additionally, cooking classes suffer from a high attrition rate and cannot cost-effectively reach large groups (Hasan et al., 2019; Reicks et al., 2014). As such,

it is necessary to explore alternative approaches to ensure that emerging adults, including non-school-going emerging adults, are able and willing to participate in food literacy programs.

Finally, future interventions must focus on various food literacy attributes beyond cooking skills and nutrition knowledge. However, previous interventions have primarily focused on these areas and neglected other aspects of food literacy, such as food planning and selection. According to studies by Brooks and Begley (2014) and Cullerton et al. (2012), few interventions have addressed multiple domains of food literacy in one program. However, Vidgen (2016a) suggests that targeting specific domains that individuals most need to improve their food literacy may be more effective than addressing all domains in one intervention. Nonetheless, addressing different food literacy domains is crucial because it encompasses more than just the skills required to prepare a meal (Slater et al., 2018; Vidgen & Gallegos, 2014). As such, while it may be challenging to address all domains in a single intervention, it is essential to consider individuals' varying levels of food literacy within each domain and target the areas most in need (Vidgen, 2016a).

Given the limitations of past food literacy interventions, finding new and creative ways to engage with emerging adults and address various aspects of food literacy is crucial. Previous research has suggested that instead of using high-effort settings (such as cooking classes) in which emerging adults may not naturally be inclined to participate, it may be better to use settings they already engage in, for instance, through media. Media-based or technology-based intervention strategies have already been suggested as a promising strategy in other domains, such as health literacy-related interventions (e.g., Brijnath et al., 2016; Car et al., 2011; Carrie et al., 2015; Conard, 2019; Dunn & Hazzard, 2019; Jacobs et al., 2016; Kim & Utz, 2019). For instance, the systematic review by Jacobs et al. (2016) found that interventions using a media or technology component reported positive outcomes and showed promise for positive health literacy effects in various settings and with diverse samples.

Furthermore, exploring the use of media messages to improve food literacy is particularly relevant for emerging adults, given their high levels of traditional and (especially) online media usage (Arnett, 2014; Vandendriessche et al., 2021). Emerging adults spend more time consuming online and traditional media than they spend doing other activities (Coyne et al., 2013). Social networking sites like Facebook, YouTube, and Instagram are particularly popular among this group (Perrin, 2015; Vandendriessche et al., 2021), in addition to television, movies, video games, and books (Coyne et al., 2013). Moreover, emerging adults are cross-media consumers, meaning they use different media types simultaneously or sequentially (De Marez et al., 2022). In the context of media messages for food literacy promotion,

media messages about food are particularly of interest and will be the focus of this dissertation.

3 Food Media Messages

3.1 Defining Food Media Messages

Food media messages *(or food media content)* refer to media messages focused on food. According to Slater et al. (2015, p. 14), a media message refers to "*expressions in symbolic form—in verbal language, image, sound, and combinations thereof—from some individual or institutional source, via some mediated or interpersonal channel.*" This definition emphasizes three important aspects of a media message: the content of the message, the sender of the message, and the medium through which the message is transmitted. In the context of a food media message, for example, an episode of Jamie's One-Pan Wonders on television, the medium is the television, the sender is the celebrity chef Jamie Oliver, and the message is focused on the One Pan Wonder Salmon Pasta recipe. In the current dissertation, we view all these three elements as essential characteristics of a food media message.

Therefore, when this dissertation speaks about food media messages, we mean *all mediated messages about food, including any food-related content, sent by any source and transmitted by any medium*. Although food-related media messages can be spread by various sources, including profit-driven entities such as food brands, non-profit organizations such as health organizations, health professionals, and laypeople (Van Royen et al., 2022), this dissertation will focus specifically on the spread of food-related messages by food celebrities (i.e., people *"who actively and routinely engage in communication about food in (digital) media and work to attract wider audiences and achieve a certain level of appeal and fame"* (Goodman & Jaworska, 2020, p. 184)). Additionally, we exclude traditional and overt advertising (i.e., sponsored promotions of specific foods or food brands) as food media messages, for example, a commercial of Ben's Original Rice displayed on television. These traditional advertising formats tend to be more intrusive and overtly sales-oriented, often leading to audience resistance (Chan et al., 2017; Fong Yee Chan, 2020). Past research has indicated that emerging adults often find these traditional, more overt forms of food advertising annoying and perceive it as decreasing their inclination to purchase the advertised products (Molenaar et al., 2021). In contrast, other forms of media content related to food, which can include more covert forms of advertising (e.g., product placement, influencer marketing, native advertising), are more preferred among emerging adults as the persuasive intent of these messages are more subtle (Molenaar et al., 2021). For instance, in the context of influencer marketing, at the outset of this dissertation, influencers were not required to disclose a 'paid partnership' label, making it harder for audiences to recognize advertisements and understand their persuasive intent (Hudders &

Lou, 2022). Consequently, this dissertation excludes only traditional and overt forms of advertising.

3.2 Characteristics of Existing Food Media Messages

Over the past decade, the media landscape has been flooded with food-related media messages (Kirkwood, 2018; Lewis, 2020a; Ngqangashe et al., 2021). While the content, the sender, and the medium of food media messages are distinct elements, they are also closely interconnected. Namely, food media messages embrace a transmedial orientation, seamlessly integrating and interacting across various media types to reinforce the overall food message (Hills, 2020; Lupton, 2020). This means that food media messages are not limited to a single medium; rather, they are designed to be experienced across multiple platforms (Kirkwood, 2018; Ngqangashe et al., 2021). For instance, a cooking show that originates on television may also have accompanying print cookbooks, online recipe blogs, social media posts with cooking tips, and even a podcast discussing food-related topics. In addition to their transmedial orientation, food media messages also demonstrate a highly converging character as they increasingly adopt similar styles and themes across various media types (Lofgren, 2013). However, while the content and style may remain consistent, adaptations are made to suit each medium (Goodman & Jaworska, 2020). For instance, consider the One Pan Wonder Salmon Pasta recipe from the previous example being shared on the social media platform TikTok. In this case, the sender may still be Jamie Oliver, but due to the nature of the platform, the preparation video will likely be shorter, with a maximum duration of one minute. Therefore, while the content and presentation style may be the same, the socio-technical message characteristics may differ depending on the medium used. Although the sender, the content, and the medium are interrelated and determine the food media message together, we will briefly overview each element separately.

3.2.1 The Content of Food Media Messages

The content of food media messages can be differentiated into two interrelated aspects: the information that is conveyed, representing what is being portrayed, and how it is presented, commonly referred to as content attributes. However, it is not always easy to draw clear lines between those two aspects as they are often intertwined.

First, with regard to what is being portrayed, the content of food media messages can encompass a range of themes, including cooking, buying food, and eating (Cuykx, Lochs, et al., 2023; Lewis, 2020a). Cooking-related content can involve specific meal preparation instructions or more generalized themes relating to cooking, such as sharing cooking experiences (e.g., "everything that I have made in my kitchen this week"- videos) or cooking competition shows (e.g., Bakeoff). Buying-related content can focus on specific food products (e.g., product reviews) or the grocery

shopping journey, such as grocery hauls. Eating-related content revolves around the practice of consuming food. It may include restaurant reviews, what-I-eat-in-a-day information, live-streamed videos where people eat, such as ASMR food videos (i.e., videos featuring certain kinds of food-related noises (e.g., slurping and chewing) while eating a meal) and Mukbangs (i.e., videos featuring the consumption of large quantities of food) (De Solier, 2018; Lewis, 2020b). In particular, buying and eating-related content has become more prominent with the rise of online media (De Solier, 2018; Lewis, 2020b).

Additionally, the food portrayed in food media messages can differ according to its nutritional value. Previous research has assessed the nutritional quality of the displayed food or recipes in various food media messages. First, studies have shown that meals prepared in TV cooking shows were likely to exceed the recommended intake of saturated fats and sodium while containing an inadequate portion of fruits and vegetables (Jones et al., 2013; Ngqangashe, De Backer, Matthys, et al., 2018; Silva et al., 2010). Similarly, a study of cookbooks found that most recipes were high in saturated fats, sodium, and carbohydrates (Howard et al., 2012). Recipes from websites and food blogs were also found to be excessive in saturated fats and sodium, but online vegetarian and seafood recipes were found to be better (Dickinson et al., 2018; Schneider et al., 2013; Trattner et al., 2017). Only a limited amount of research has evaluated the nutritional quality of food media messages from social media sites. Qutteina et al. (2019) found that social media food messages can display either core food (i.e., food that belongs to the dietary guidelines of main food groups), non-core food (i.e., foods high in energy yet low in nutrients), or a combination of both. However, most social media food messages were found to portray non-core food (Qutteina et al., 2019). Furthermore, Camargo et al. (2022) found that Brazilian YouTube cooking channels mostly shared recipes for snacks, desserts, and homemade fast foods that contained a high proportion of ultra-processed ingredients. Finally, another study by Cheng et al. (2021) found that recipes from Pinterest contained more frequently seafood, poultry, or vegetables and less meat. However, recipes with higher fat and sugar content resulted in more shares and comments.

Second, the content of food media messages can be presented in various ways. Previous research has stated that food media messages combine the "*hard' values of information and realism characteristic of news and documentary with 'softer,' more entertaining topics*" (De Solier, 2005, p. 466). For instance, concerning cooking-related content, previous research has shown that instructive cooking shows are now not only displaying the instructions to prepare a meal but combining the instructions with more entertaining elements, such as a food celebrity (Matwick & Matwick, 2014). Additionally, the incorporation of more entertaining topics led also to the diversification of instructive cooking shows to other forms, such as games (e.g.,

BakeOff), travel (e.g., "Salt, Fat, Acid, Heat"), and reality cooking shows (e.g., Kitchen Nightmares) (De Solier, 2005; Leer, 2018). The combination of information and more entertaining topics is prominent in cooking shows and has also been noted in other food-related content across different media types.

Furthermore, food media messages also incorporate a diverse range of message cues, referring to the visual or descriptive observable characteristics of the featured food or dish (Roest & Rindfleisch, 2010; Vermeir & Roose, 2020). For instance, describing and portraying a dish as flavorful and easy to prepare. These cues are often categorized into different groups, such as visual elements (e.g., colorfulness, aesthetic appeal, promotional characters), audio elements (e.g., music/jingles, voice-overs), food product elements (e.g., tastiness, convenience, novelty), and emotional elements (e.g., happiness, romance, adventure). Although prior research has predominantly examined the utilization of these cues in food marketing contexts, particularly in advertisements, the work of Matwick and Matwick (2014) has shown that these cues also manifest in less commercialized food media messages, such as instructional cooking shows. For instance, they found that storytelling message appeals are often intertwined with the instructional content, presenting the host as a relatable figure to connect with the audience or inviting the audience to participate by asking questions (Matwick & Matwick, 2014).

3.2.2 The Transmission of Food Media Messages

Food media messages can be transmitted through various media types. These media types are often divided into (a) print media (i.e., books, newspapers, magazines) and (b) non-print media or electronic media (i.e., films, television, radio, internet, smart media) (Danesi, 2013). Via these different media types, food-related messages or content are spread. In the case of print media, food media messages include sections about food in books, magazines, and newspapers, as well as dedicated food-focused publications such as cookbooks and food magazines. Additionally, printed recipes or nutrition tip cards are also forms of printed food media messages. With regard to electronic media, food media messages are mostly spread via television (e.g., cooking television), the internet (e.g., food blogs), and social media network sites (e.g., recipe videos on Instagram). On television, there are food-related programs (e.g., cooking shows) and even television channels that are fully dedicated to food, such as Njam! TV in Belgium or 24Kitchen in the Netherlands. Additionally, YouTube and streaming services also bring video-related food content on demand (De Solier, 2005; Lupton, 2020). There are websites with food sections or devoted websites to food, also referred to as food blogs. Finally, food is also a popular topic on various social media platforms such as Twitter, Instagram, Pinterest, Facebook, and Reddit (De Solier, 2018; Goodman & Jaworska, 2020).

These media types have different affordances, namely the socio-technical characteristics of a medium, that distinguish it from other media types and affect how content is spread and can be used (Meyrowitz, 1994). For example, instructions on how to make an apple pie can be shared via a written recipe in a cookbook or through a demonstration on television.

3.2.3 The Senders of Food Media Messages

Food media messages can be shared, featured, or produced by many different sources. These sources encompass not only individuals, such as celebrity chefs, influencers, and celebrities, but also organizations like brands, health institutions, and governmental bodies (Cuykx, Lochs, et al., 2023; Rousseau, 2013). Furthermore, even sources driven by personal relationships and motives less focused on commercial gain, such as emerging adults, their families, parents, and acquaintances, play a role in sharing food media messages (Holmberg et al., 2016; Pember et al., 2018; Zulaikha et al., 2019). Despite the wide array of contributors capable of sharing, featuring, and creating food media messages, it is particularly notable that food celebrities hold a distinct position (Goodman & Jaworska, 2020; Lewis, 2020a). Their narratives are deeply ingrained and play a pivotal role in disseminating food media messages through both traditional and online media platforms (Goodman & Jaworska, 2020; Lewis, 2020a).

Goodman and Jaworska (2020) use the term 'food celebrities' to describe people who *"actively and routinely engage in communication about food in digital media and work to attract wider audiences and achieve a certain level of appeal and fame."* (p.184). Under this definition of food celebrities, a range of different types of food celebrities are encompassed, including celebrity chefs, traditional celebrities, and social media influencers. Attempts to categorize these food celebrities often revolve around two primary distinctions: the manner in which they achieved their celebrity status and their level of professional expertise in the food domain in the field of food (Goodman & Jaworska, 2020; Van Royen et al., 2022). Firstly, a distinction is often made based on how food celebrities gained recognition. This categorization often separates more traditional celebrities like TV celebrity chefs (e.g., Jamie Oliver) and social media influencers (e.g., @deliciouslyella) (Goodman & Jaworska, 2020). Traditional celebrities ascended to fame through traditional media outlets like television shows and cookbooks, while social media influencers have gained popularity through their social media activities. Studies have even uncovered notable distinctions between these two categories. Social media influencers are often perceived as fostering more intimate interactions with their followers, producing more authentic and trustworthy content compared to traditional celebrities (Gräve, 2017). Furthermore, audiences tend to identify more closely with influencers, viewing them as relatable figures and placing a higher degree of trust in their recommendations (Schouten et al., 2021). Secondly, distinctions are sometimes

drawn based on the possession of professional qualifications or expertise (Goodman & Jaworska, 2020; Van Royen et al., 2022). For instance, some food celebrities may hold credentials as trained chefs or nutritionists (e.g., @healthyhabitscelien), enabling them to provide expert guidance on food and nutrition matters. On the other hand, individuals without formal qualifications also engage in disseminating food-related information (e.g., @itscourtneyluna). However, the classification of food celebrities is not always straightforward, and subcategories like social media influencers can exhibit considerable variability. Factors like follower count, passion for a specific topic, audience perception, social media entrepreneurship, revenue generation, authenticity, and even varying degrees of celebrity status can further complicate the process of categorization (Ouvrein et al., 2021; Ruiz-Gomez, 2019).

4 Food Media Messages for Food Literacy Promotion?

From the literature background described above, we can conclude that there is a need to find new ways to reach emerging adults with food literacy promotion strategies. At the same time, we see that emerging adults are heavy media users who come into contact with various food media messages through different media types. Combining these two aspects leads to the pressing question of whether and how food media messages can also be effectively used for food literacy promotion among emerging adults. In this section, previous research about the effects and associations of food media messages in relation to several food- and health-related outcomes will be discussed, along with addressing their limitations. Following this state-of-the-art, I will introduce the theoretical framework and research aims that will form the backbone of this dissertation.

4.1 Effects of food media messages

As noted in the previous section, food has become increasingly prominent in the media landscape to the extent that emerging adults are increasingly exposed to food media messages (Decorte et al., 2022; Wang et al., 2022). Former research has investigated the associations and effects of exposure to food media messages. These former studies differ regarding research designs, target groups, food media message characteristics, and outcome measures.

Firstly, these studies encompassed a variety of research designs, including experimental (Clifford et al., 2009; Coates et al., 2019; Folkvord et al., 2020; Folkvord & de Bruijne, 2020; Ngqangashe & De Backer, 2021; Ngqangashe, De Backer, Hudders, et al., 2018) and cross-sectional research designs (Baldwin et al., 2018; De Backer & Hudders, 2016; Elhoushy, 2022; Pope et al., 2015; Qutteina, Hallez, et al., 2022; Reinhard & Ganguly, 2020; Rounsefell et al., 2020). Additionally, these studies included participants of different age groups, ranging from children (Coates et al., 2019; Folkvord et al., 2020; Ngqangashe, De Backer, Hudders, et al., 2018) and adolescents (Baldwin et al., 2018; Folkvord & de Bruijne, 2020; Ngqangashe & De Backer, 2021;

Qutteina, Hallez, et al., 2022) to emerging adults (Clifford et al., 2009; Rounsefell et al., 2020) and adults (De Backer & Hudders, 2016; Elhoushy, 2022; Pope et al., 2015; Reinhard & Ganguly, 2020). Furthermore, previous research have analyzed food media messages across different media types, including television (Clifford et al., 2009; De Backer & Hudders, 2016; Elhoushy, 2022; Folkvord et al., 2020; Ngqangashe, De Backer, Hudders, et al., 2018; Pope et al., 2015; Reinhard & Ganguly, 2020) and social media platforms (Baldwin et al., 2018; Coates et al., 2019; Folkvord & de Bruijne, 2020; Ngqangashe & De Backer, 2021; Qutteina, Hallez, et al., 2022; Rounsefell et al., 2020), and the content of the messages varied in terms of promoting healthy food-related behaviors (Clifford et al., 2009; Coates et al., 2019; De Backer & Hudders, 2016; Elhoushy, 2022; Folkvord et al., 2020; Folkvord & de Bruijne, 2020; Ngqangashe & De Backer, 2021; Ngqangashe, De Backer, Hudders, et al., 2018; Qutteina, Hallez, et al., 2022), not-supportive for healthy food-related behaviors (Coates et al., 2019; Elhoushy, 2022; Folkvord et al., 2020; Folkvord & de Bruijne, 2020; Ngqangashe & De Backer, 2021; Qutteina, Hallez, et al., 2022), or not specified (Baldwin et al., 2018; Pope et al., 2015; Reinhard & Ganguly, 2020; Rounsefell et al., 2020). Finally, the studies have investigated the associations and effects of food media messages on various food and health-related outcomes, including BMI (Pope et al., 2015), intentions for healthy or unhealthy food intake (Baldwin et al., 2018; Clifford et al., 2009; Coates et al., 2019; De Backer & Hudders, 2016; Folkvord et al., 2020; Folkvord & de Bruijne, 2020; Ngqangashe & De Backer, 2021; Ngqangashe, De Backer, Hudders, et al., 2018; Qutteina, Hallez, et al., 2022), food preferences (Ngqangashe & De Backer, 2021; Ngqangashe, De Backer, Hudders, et al., 2018), fruit and vegetable knowledge (Clifford et al., 2009), food preparation and waste skills (De Backer & Hudders, 2016; Elhoushy, 2022; Reinhard & Ganguly, 2020), and food literacy (Qutteina, Hallez, et al., 2022; Reinhard & Ganguly, 2020).

In terms of experimental research, previous studies have examined the impact of watching television cooking shows and exposure to food messages on social media. Specifically, research has found that watching television cooking shows that endorse healthy foods results in increased healthy food preferences and intentions to consume healthy foods among children (Folkvord et al., 2020; Ngqangashe, De Backer, Hudders, et al., 2018). Among emerging adults, these shows have been shown to improve knowledge of fruits and vegetables but not healthy food intake (Clifford et al., 2009). Supportive food media messages on social media, such as videos featuring fruits and vegetables, have been found to decrease adolescents' liking for sweet snacks and increase their intentions to prepare healthy snacks (Ngqangashe & De Backer, 2021), although some studies have reported no significant effects (Coates et al., 2019; Folkvord & de Bruijne, 2020). On the other hand, exposure to unsupportive food media messages, such as videos featuring sweet snacks, has been found to decrease liking for fruits and vegetables and increase intentions to

consume unhealthy foods among children and adolescents (Coates et al., 2019; Ngqangashe & De Backer, 2021).

Cross-sectional research designs have explored the relationship between exposure to food media messages on television and social media and various food- and health-related outcomes. Research has found that watching television cooking shows is associated with a higher BMI, although the specific content of these shows was not considered (Pope et al., 2015). However, supportive television cooking shows have been linked to more frequent food preparation and reduced food waste among adults (De Backer & Hudders, 2016; Elhoushy, 2022; Reinhard & Ganguly, 2020). Exposure to food media messages on social media has been associated with increased consumption of unhealthy foods among adolescents and higher body dissatisfaction among emerging adults, although the specific content of these messages was not specified (Baldwin et al., 2018; Rounsefell et al., 2020). Studies that did consider the content of food media messages found that exposure to non-supportive messages on social media is associated with a higher intake of unhealthy foods, while greater exposure to supportive messages is associated with higher levels of food literacy (Qutteina, Hallez, et al., 2022).

4.1.1 Limitations Of Previous Research

Despite the relevance of the aforementioned studies, several important limitations in light of the use of food media messages to promote food literacy among emerging adults can be noticed. Firstly, these former studies have focused on either specific components of food literacy or food intake and other health and well-being outcomes (e.g., BMI). Second, most research has focused on younger audiences (i.e., children and adolescents), and studies considering emerging adults mostly relied on university samples. Next, while the impact of food media messages featuring unsupportive content, like fast food or pro-eating disorder content, has been extensively studied, it is equally important to investigate the use of food media messages for promoting health, an area that has been relatively understudied (Folkvord & de Bruijne, 2020). Taken together, there is a need for more comprehensive research regarding the effects of food media messages for food literacy promotion among an inclusive sample of emerging adults.

Furthermore, although former studies have provided empirical evidence for the effects of food media use, they have often neglected to acknowledge the role of media selection and media content attributes. Media selection and its effects cannot be viewed as separate entities (Knobloch-Westerwick, 2014; Slater, 2007). As studies of media selectivity tell us, media choices predominantly occur through selective choices, meaning that potential media effects can only occur if individuals select and consume the media content (Knobloch-Westerwick, 2014; Valkenburg & Oliver, 2019). This implies that food messages with supportive food literacy content

(i.e., food media messages that are beneficial for food literacy promotion) can only be effective if the message is attended by the emerging adult. Depending upon the media content, in turn, food media messages can have a dual character, with the potential to both enhance and distort food literacy (Malan et al., 2020; Steils & Obaidalahe, 2020; Ventura et al., 2021). As such, food media messages displaying unsupportive food literacy content (i.e., food media messages that are not beneficial for food literacy promotion) can lead to more negative outcomes. Therefore, the selection and exposure processes are critical for understanding the entire media consumption process, including its potential effects (Krcmar, 2017; Rubin, 2009).

Consequently, researchers have advocated for a more comprehensive model that integrates the processes of media selection and media effects to explain media influence better (Slater, 2007). Within the realm of food media messages, where emerging adults have a wide range of options to choose from, considering the role of media selection and content becomes even more crucial (Wilson et al., 2019). Considering the aforementioned limitations, the current dissertation will employ a comprehensive framework to explore whether and how food media messages can be used to promote food literacy among emerging adults.

4.2 Dissertation Theoretical Framework

The present dissertation is situated within the framework of the selectivity paradigm, which offers a valuable theoretical framework for understanding the relationship between food media messages and food literacy. The selectivity paradigm is generally based on the premise that individuals selectively, based on individual and contextual factors, attend a limited number of messages, and only those selected messages have the potential to influence them (Knobloch-Westerwick, 2014; Valkenburg & Oliver, 2019). Within the selectivity paradigm, one of the most prominent theories is the *Uses and Gratifications (U&G)* (Valkenburg & Oliver, 2019).

The U&G perspective was initiated as a response to the traditional mass communication paradigm that viewed media audiences as passive receivers of messages (Palmgreen et al., 1985; Ruggiero, 2000). Namely, the vision shifted from "what media do with people" to "what people do with media" (Katz et al., 1973). Katz and colleagues (1973) describe that U&G research seeks to understand *"(1) the social and psychological origin of (2) needs, which generate (3) expectations from (4) the mass media or other sources, which lead to (5) differential patterns of media exposure (or engagement in other activities), resulting in (6) need gratifications and (7) other consequences, perhaps mostly unintended ones" (p.20).* Accordingly, U&G posits that by understanding why we choose the media we do, how we use them, and what the available media messages are, researchers can better understand the entire media use process, including the media outcomes and effects (Krcmar, 2017). Thus, understanding the selection and exposure processes of individuals

towards food media messages yields valuable insights into comprehending the entire process of food media consumption, including its impact on food literacy.

However, the U&G approach has also faced criticism, some of which have resulted in conceptual and methodological improvements (Krcmar, 2017; Krcmar & Strizhakova, 2009). One such criticism concerns the lack of clear distinction between the prior expectations an audience wishes to fulfill through media use and the (un)expected outcomes from media consumption, as well as the discrepancy between the prior expectations (i.e., gratifications sought - GS) and outcomes (i.e., gratifications obtained - GO) (Katz et al., 1973; Palmgreen et al., 1980). Namely, this discrepancy reflects the observation that the gratifications the audience wishes to obtain (i.e., GS) are not necessarily the same as the gratifications they actually obtain (i.e., GO) from media use (Katz et al., 1973; Palmgreen et al., 1980). For example, a person may watch social media recipe videos to be entertained, but, in the end, the person may find entertainment and, at the same time, gain valuable information on how to cook a particular dish. Another criticism towards U&G is its assumption of an active role for media audiences, implying that media consumption behavior is always conscious and goal-directed and that viewers are fully aware of their media use motives. However, some argue that media consumption can also be habitual, less intentional, automatic, or even nonconscious. Individuals may display varying degrees of activity and goal-directedness throughout the communication process, which includes before, during, and after exposure to media. For example, individuals might engage in ritualized scrolling on social media, where their actions become habitual and less intentional. Yet, they may then become more active and selective in deciding which specific content to pay attention to. In line with this, Rubin (1983) also proposed that media use can vary in goal orientation and intentionality, describing it as either ritualized or instrumental. Ritualized use involves consuming media more habitually to fulfill diversionary needs, such as seeking companionship, passing time, relaxation, escapism, or entertainment. On the other hand, instrumental media use refers to a more purpose-driven approach, where individuals actively seek media content to satisfy informational needs or motives.

Regarding food media messages, the study of Ngqangashe et al. (2021) confirms that exposure to food media messages can be both selective and more incidental, depending on the specific media or platform being used. This duality of selective and more incidental exposure is particularly pronounced in high- and low-choice media environments, such as social media (Thorson, 2020; Vraga et al., 2019). In these contexts, users are presented with an array of options to choose from, giving them the freedom to select content based on their preferences (Thorson, 2020). However, simultaneously, there is also a portion of content that is less influenced by user choices but rather curated by algorithms (Thorson, 2020). This leads to a situation where media exposure is shaped by both individual preferences and algorithmic

content delivery (Vraga et al., 2019). As a result, researchers have emphasized the importance of avoiding a strict distinction between active and passive audiences (Cooper & Tang, 2009; Rubin, 1993). Instead, they propose conceptualizing audiences as varying in their level of activeness, which acknowledges that media consumption behavior may range from habitual and less intentional to more goal-directed and active (Cooper & Tang, 2009; Rubin, 1993). This nuanced understanding of media consumption behavior highlights the complexities involved in audience engagement and the need to consider different levels of activeness.

In response to the criticisms, previous researchers have emphasized the importance of distinguishing between GS and GO (Palmgreen et al., 1980; Rosengren et al., 1985), which has also been valued and applied in recent media gratifications research (Bae, 2018; Gibbs et al., 2014; Hussain & Shabir, 2020; Rokito et al., 2019). GS refers to the motives individuals have when consuming media, while GO represents the actual outcomes resulting from that media use (Palmgreen et al., 1980). For instance, in the context of food media messages, individuals may actively seek out food-related content for meal inspiration (GS) and subsequently gain meal preparation ideas through their media consumption (GO). However, there can also be a discrepancy between the motives and the actual gratifications received, indicating that media motives may not always align perfectly with the outcomes experienced (Bae, 2018; Palmgreen et al., 1980; Rokito et al., 2019). Some gratifications can be obtained incidentally, without prior expectations, and are often associated with more passive media consumption (Bae, 2018; Palmgreen et al., 1980; Rokito et al., 2019). Conversely, in some cases, actual gratifications may exceed initial motives, leading to increased media use frequency, adoption, dependency, and satisfaction (Rokito et al., 2019). Understanding this distinction is essential in comprehending emerging adults' motivations for consuming food media messages and their perceived outcomes.

This GS-GO approach, along with the other tenets of U&G, has been conceptualized by Palmgreen et al. (1985) in a *general media gratifications model.* This model assumes a process-oriented path-goal approach influenced by individual and contextual characteristics (Palmgreen, 1984; Palmgreen et al., 1985). According to this model, audiences seek gratifications (GS) driven by their needs, beliefs, and expectations, leading to media consumption that is influenced by the content of media, subsequently resulting in GO and other consequences (Palmgreen, 1984; Palmgreen et al., 1985). In the current dissertation, I build further on these foundations to apply and elaborate these ideas within the specific research context of food media messages, food literacy, and emerging adults (see Figure 2).

4.2.1 The Needs, Values, And Beliefs of Emerging Adults

U&G posits that media users have certain needs, values, and beliefs that determine their viewing motives, which influence their media choices. These needs, values, and

beliefs are, in turn, dependent on certain individual and contextual factors. Coyne et al. (2013) identified that emerging adults have three specific developmental dispositions, *autonomy, intimacy,* and *identity*, that drive them to seek media consumption. These needs drive them to use media as a tool to exercise their independence, form connections with others, and explore their sense of self (Coyne et al., 2013, 2016). While these developmental goals can also be observed during adolescence, Arnett (2014) has argued that these goals are different in emerging adulthood due to greater independence and adult transition behaviors (e.g., financial independence, explorations in identity in terms of love and career, and less or no parental control). Similar to how they search for particular types of media to fulfill their needs for autonomy, intimacy, and identity, they may also seek out food media messages that align with those developmental needs in the context of food. For instance, they might be drawn to content that allows them to exercise personal control in their dietary choices, show off their cooking skills to others, or express their food-related identities. In terms of autonomy, they might use food media messages to acquire new cooking skills and experiment with diverse ingredients, enabling them to craft meals that resonate with their preferences and values. Regarding intimacy, they may engage with food media that features interactive cooking classes or online food communities, fostering connections with like-minded individuals and sharing culinary experiences and recipes. Addressing identity, emerging adults may gravitate toward food media messages that reflect their dietary choices or cultural identity. Consequently, emerging adulthood entails unique characteristics that determine how and why they consume food media messages and warrant comprehensive examination.

4.2.2 Gratifications Sought of Food Media Content

The specific needs, beliefs, and expectations of these emerging adults prompt them to seek gratifications (GS) from media messages (Palmgreen et al., 1985). Former U&G research has mostly been focusing on this part (Valkenburg & Oliver, 2019).

Previous research has investigated the specific GS for specific media types (e.g., television (Rubin, 1983), social media platforms (Pelletier et al., 2020)), genres (e.g., reality television (Barton, 2009)), content (e.g., religious content (Brubaker & Haigh, 2017), sport-related content (Gibbs et al., 2014)), and technologies (e.g., augmented reality filters on social media (Ibanez-Sanchez et al., 2022)). While some researchers have identified unique or more specific gratifications for certain media, a review conducted by Sundar and Limperos (2013) reveals a significant overlap between gratifications, suggesting the existence of core reasons for using media. Sundar and Limperos (2013) summarized the most common gratifications mentioned in U&G studies from 1940 until 2011. These include mostly content gratifications related to information, entertainment, social aspects (such as status and connection), escapism, competition, time, emotions, and convenience (Sundar & Limperos,

2013). However, it is worth considering that these findings may be somewhat biased since researchers often adapt existing U&G instruments for newer media, potentially overlooking other gratifications, especially those tied to specific media (Krcmar, 2017; Krcmar & Strizhakova, 2009; Sundar & Limperos, 2013).

Apart from content-related gratifications, medium-specific characteristics can also contribute to fulfilling certain gratifications. Sundar and Limperos (2013) highlight the need to focus on technologies themselves and the new gratifications they enable, referred to as affordance-related gratifications. Newer forms of media have introduced a wide range of affordances, providing users with unique opportunities for engagement and interaction, underscoring the importance of considering the technology in satisfying user needs (Rathnayake & Winter, 2018). Some research has already examined both content- and affordance-related gratifications and found that both are important media motivations. For instance, motivations for sharing photos online tend to be both content- and affordance-related gratifications (Oeldorf-Hirsch & Sundar, 2016).

Within the realm of food media messages, previous research has primarily focused on exploring the GS from specific food content across various media platforms and types. These studies have encompassed food posts on social media (Ladhari et al., 2019; Pember et al., 2018), cooking television (Hemmah, 2009), and mukbangs (i.e., online eating shows with viewer interactions) (Kircaburun et al., 2021). The most common gratification categories identified in these studies revolved around entertainment, information, escapism, time, social interactions, and identity-building (Hemmah, 2009; Kircaburun et al., 2021; Ladhari et al., 2019; Ngqangashe et al., 2022; Pember et al., 2018). While these investigations have shed light on the broader content-related GS in these specific food media contexts, they have also revealed that gratifications related to social and information functions tend to exhibit more specificity and nuance in these particular types of food media messages. For instance, Ladhari et al. (2019) discovered that information-related gratifications from food posts by food retailers are more specific, encompassing the desire to access information about discounted items, view suggested recipes, seek culinary tricks, read reviews, and engage in social interactions with other customers and the food retailer themselves. Despite the valuable insights provided by these studies into the content-related GS for these specific food media messages, platforms, or target groups, they also exhibit some limitations.

First, these previous studies have primarily focused on specific food media messages from particular platforms, which, in turn, limits the generalizability of motivations to other food media messages or platforms. It is important to recognize that food media messages possess a transmedia character and exhibit an increasing convergence trend (Hills, 2020; Lofgren, 2013), as they are consistently

depicted in similar ways across various media types. To comprehensively understand the motivations underlying food media messages across different media types, a broader perspective is essential. This approach has also been advocated in a non-food-related media research context (Krcmar & Strizhakova, 2009; Nabi et al., 2006). They have emphasized the significance of looking beyond specific formats, genres, or media types when examining gratifications for media content. For instance, Nabi et al. (2006) discovered that content itself played a pivotal role in shaping media motivations for reality TV, highlighting the importance of content over format or genre alone. Furthermore, evaluating gratifications tied to specific content, regardless of the media type, enables better generalizability and facilitates comparisons across media types, unlike platform-specific measures that can quickly become outdated (Meier & Krause, 2022). Given the transmedia nature and increasing convergence of food media messages (Hills, 2020; Lofgren, 2013), this approach of focusing on the content becomes especially pertinent within the realm of food media research. Second, previous research has predominantly focused on investigating the content-related gratifications related to food media messages but has largely overlooked the affordance-related gratifications. By neglecting this aspect, valuable insights into how users engage with the unique opportunities and functionalities offered by media are missed. Third, these studies have either relied on quantitative (Ladhari et al., 2019; Pember et al., 2018) or qualitative methods (Hemmah, 2009; Ngqangashe et al., 2021). While both qualitative and quantitative research approaches are valuable separately, they also have limitations when used in isolation. Relying solely on qualitative methods may restrict generalizability and hinder testing in cross-sectional statistical designs. On the other hand, solely relying on quantitative methods may lead to the measurement of gratifications using existing quantitative measures developed for specific media types or content, which may not be suitable for other contexts and could impede the discovery of new gratifications (Sundar & Limperos, 2013). Despite the individual value of both methods, a more effective approach could involve using them together in a complementary manner, as recommended for U&G research (Becker, 1979; Sundar & Limperos, 2013). Finally, previous research in this area has primarily focused on general adult populations or specific target groups, such as adolescents (Ngqangashe et al., 2021). However, considering that emerging adulthood represents a distinct life phase characterized by unique needs, values, and beliefs, it is reasonable to assume that different gratifications may arise compared to other age groups (Coyne et al., 2013, 2016). For instance, previous research conducted by Lonsdale and North (2011) revealed that emerging adults exhibit distinct motives for music consumption compared to individuals in mid-adulthood, ranging from 30 to 50 years old. Therefore, it is essential to investigate the GS from food media messages, specifically among emerging adults, to account for these potential differences.

4.2.3 Food Media Content Consumption

Guided by their GS, audiences engage in selective consumption of media messages, choosing from the available options. This aspect of media consumption behavior often falls under the "uses" component of the U&G framework (Rosengren, 1974). It primarily involves exploring media consumption patterns such as time spent on different media, the types of media content consumed, and the interactions between individual consumers and the media content they engage with (Palmgreen et al., 1985; Rosengren, 1974).

Within the realm of food media messages, Leer and Povlsen (2016) contend that nearly all humans engage in and reflect upon daily practices related to food in the media. This phenomenon holds particularly true for emerging adults, a demographic characterized by their extensive use of diverse media and frequent exposure to food media messages (Coyne et al., 2013; Wang et al., 2022). Notably, emerging adults dedicate more time to consuming both online and traditional media than any other activity (Coyne et al., 2013). Their media engagement encompasses various channels, with social media platforms like Facebook, YouTube, and Instagram being widely used among them (Perrin, 2015; Vandendriessche et al., 2021), contributing to their heightened exposure to food-related content. Additionally, emerging adults also allocate time to traditional media sources such as television, movies, video games, and books, albeit to a lesser extent (Coyne et al., 2013). Consequently, they are constantly in contact with a range of media contents, including those related to food. However, although food media messages are available in various formats and omnipresent on different platforms (see section 3.2.), emerging adults can differ in which media they use and what they choose to pay attention to (Griffioen et al., 2021). Therefore, it is also important to understand the food media messages that emerging adults are exposed to. Specifically, without knowledge of the media content, it is difficult to interpret emerging adults' attitudes and preferences toward food media messages (De Vreese et al., 2017; Palmgreen et al., 1985).

As explored in section 3.2, food media messages encompass a wide array of content and content attributes, encompassing variations in both the displayed information and how the information is transferred. Concerning the content, previous studies have predominantly focused on analyzing the nutritional aspects of recipes or food products depicted in cooking television, cookbooks, websites, advertisements, and social media (Camargo et al., 2022; Cheng et al., 2021; Howard et al., 2012; Ngqangashe, De Backer, Matthys, et al., 2018; Schneider et al., 2013). However, these studies have primarily concentrated on the nutritional value, neglecting a deeper exploration of potential food literacy aspects provided in the content. Regarding the content attributes, food media messages encompass a diverse array of message cues. However, past research has primarily concentrated on exploring the existence of various descriptive and visual cues within food advertisements rather than across

other forms of food media messages (Hebden et al., 2011; Page & Brewster, 2007; Vermeir & Roose, 2020). Furthermore, research that thoroughly investigates both the content and appeals within food media messages remain limited, particularly in the context of food media messages to which emerging adults are exposed. Nonetheless, recognizing the significance of such an approach is crucial, as it highlights the inseparable nature of a food media message's communication style and its content. In other words, a food media message cannot be reduced to merely its content or appeals, as the two components are intricately intertwined to effectively convey the intended message to the audience. Therefore, exploring both aspects can offer a more comprehensive understanding to which food media messages emerging adults are exposed to.

4.2.4 Perceived Gratifications Obtained and Other Consequences of Food Media Content

Within the U&G perspective, perceived GO are viewed as the perceived psychological rewards from media use and are often referred to as media effects within the selectivity paradigm. These GO are viewed as mediating media effects that can start during media use but can last beyond the media situation. As such, food media consumption can result in those gratifications being obtained or a discrepancy between GS and GO.

First, gratifications (GS) that individuals seek to achieve from media use can result in GO (Palmgreen et al., 1980; Rosengren et al., 1985). For example, seeking nutritional knowledge through reading social media food posts can lead to the acquisition of such knowledge. However, within the realm of food media messages, the GS may not always be premeditated. Consider the scenario where individuals start browsing social media for entertainment without a specific intention related to food media messages. Yet, during their social media scroll, they might unexpectedly encounter and engage with food media messages. This interaction can then generate GO specific to the food media message – a phenomenon referred to as "process gratifications." (Sundar & Limperos, 2013) This term encapsulates gratifications that emerge and evolve during the act of using media. As individuals interact and engage, their needs, goals, and beliefs might transform, leading to unforeseen gratifications or effects (Sundar & Limperos, 2013; Valkenburg & Oliver, 2019). This demonstrates that GO related to food media messages can manifest during media use itself, influenced by the technological aspects, content, and social dynamics.

Second, a discrepancy between GS and GO can occur (Bae, 2018; Rokito et al., 2019). On the one hand, consuming food media messages can be over-gratifying, which means that more gratifications are obtained than initially sought. For example, seeking a recipe for an Eastern curry via watching a cooking show on television can result in finding a recipe for an Eastern curry, but also in acquiring information about

different food cultures. On the other hand, searching for a recipe for an Eastern curry via cooking television can also result in not finding a suitable recipe, which is referred to as under-gratification, meaning that GS was not fulfilled through media use. GO that exceeds GS has been linked to more frequent use, higher adoption, more dependency, and increased satisfaction with media (Rokito et al., 2019).

Furthermore, these GO provide, in turn, the underlying mechanisms of second-order or additional media effects, which may be mostly unintended ones. For instance, previous research has demonstrated that GO can subsequently influence the continued intention of using specific media (Chiu & Huang, 2015). In this case, these gratifications can be seen as immediate perceived benefits from media use, with continuance intention as a subsequent effect. In the context of food literacy, this suggests that certain GO from food media may have a cascading effect, impacting emerging adults' food literacy. For instance, discovering appealing recipes on social media might prompt individuals to try out the recipes, leading to increased cooking behaviors. These behaviors, in turn, can contribute significantly to an enhanced food literacy as individuals acquire more culinary skills and knowledge.

However, it is crucial to acknowledge that these subsequent effects are often unintended, as noted by Katz et al. (1974), and may not always be positive in nature. While individuals can obtain rewarding gratifications from food media, they may also further lead to unintentionally negative effects. For instance, people may engage in body gazing motivations when exposed to food media messages where they feel gratified by looking at other people's bodies. However, the food media messages they gaze at may consistently depict very slim individuals following exclusive diets, which could lead to a desire to emulate such appearances and potentially develop disordered eating patterns or disorders.

In the context of food media messages, previous studies have focused on capturing the GS of specific food media types and have not paid attention to the GO of food media messages or the other consequences in relation to food literacy. Hence, it is crucial to recognize that GS and GO are not necessarily the same and must be empirically distinguished to adequately understand why people consume food media messages and what they perceive to obtain.

4.2.5 The role of Individual and Contextual factors

Finally, this U&G process-oriented pathway approach is influenced by individual and contextual characteristics (Krcmar, 2017; Rubin, 2009). The U&G model posits that these factors affect individuals' needs, beliefs, values, motivations to seek media messages, and the gratifications they ultimately obtain, along with other related consequences (Palmgreen, 1984; Rosengren et al., 1985). These influential factors can encompass individual characteristics such as age, gender, socio-economic

status, and personality, as well as societal-contextual factors like social influence, family structure, the surrounding eating environment (Folkvord & Hermans, 2020; Rubin, 2009). It is important to note that in the context of this dissertation, these factors can also be both media (e.g., repetitiveness or embeddedness of persuasive messages)- and food-related (e.g., eating restrictions, hunger) (Proesmans, 2023; Qutteina, Smits, et al., 2022).

In this dissertation, we place a specific focus on three critical personal characteristics: age, gender, and socio-economic status. Firstly, in terms of age, emerging adulthood represents a unique life stage characterized by distinct developmental dispositions (Arnett, 2014). Emerging adults are driven by specific needs tied to their developmental stage, such as autonomy, identity, and intimacy needs (Coyne et al., 2013, 2016). Consequently, their media gratifications may differ significantly from those of individuals in other age groups. For example, prior research by Lonsdale and North (2011) found that emerging adults have distinct motives for music consumption compared to middle-aged adults.

Secondly, in terms of gender, extensive research has consistently highlighted gender-based disparities in motivations for engaging in various media-related activities (Chen et al., 2015; Croes & Bartels, 2021; Paul & Shim, 2008). For example, Croes and Bartels (2021) discovered that female and male emerging adults are driven by different factors when following influencers, indicating a need for a nuanced understanding of their media preferences. These disparities are also mirrored in food-related behaviors, where women often exhibit higher levels of competence in food preparation, nutrition knowledge, and food safety practices compared to men (e.g., Abbot et al., 2009; Yahia et al., 2016). Given these differences, it becomes apparent that male and female emerging adults may manifest divergent gratification patterns concerning food media messages.

Lastly, differences in socio-economic status can also display differences in media-related behaviors. For instance within the context of following influencers, emerging adults with higher socio-economic backgrounds may prioritize other motivations such as information-seeking and leisure when following influencers more than those with lower socio-economic backgrounds (Croes & Bartels, 2021). These distinctions also extend to dietary behaviors, with individuals of lower socio-economic status often exhibiting poorer dietary intakes (e.g., Inglis et al., 2005; Wolfson & Bleich, 2015).

Given these differences, it becomes apparent that male and female emerging adults and emerging adults with different socio-economic statuses may manifest divergent gratification patterns concerning food media messages. Therefore, a nuanced examination of their media preferences is essential to gain a comprehensive understanding.

4.3 Dissertation Research Scope

Based on the comprehensive literature overview, it is evident that several key points warrant attention in the study of emerging adults and their food literacy development. Firstly, it is crucial to recognize that emerging adults are in high need of enhancing their food literacy competencies. Previous interventions targeting food literacy aspects have shown limitations in effectively reaching this population, both in terms of effectiveness and cost-efficiency. However, given the omnipresence of food media messages in the lives of emerging adults, exploring the potential of using these platforms for food literacy interventions seems promising. Before delving into the effects of food media messages on food literacy, it is essential to understand the characteristics of these messages and how emerging adults engage with them (Rubin, 2009). Understanding the unique needs and wants of emerging adults within the context of food media messages is of crucial importance, as it enables tailoring food media messages for food literacy promotion to effectively meet the specific requirements of this demographic, ensuring greater success and impact. Figure 2 outlines an overview of the key theoretical concepts within this dissertation. The figure illustrates the overarching theoretical framework that connects the selection and utilization of food media messages with their potential impacts on food literacy. Specifically, the present dissertation will delve into various key elements of Figure 2, leading to two distinct objectives.

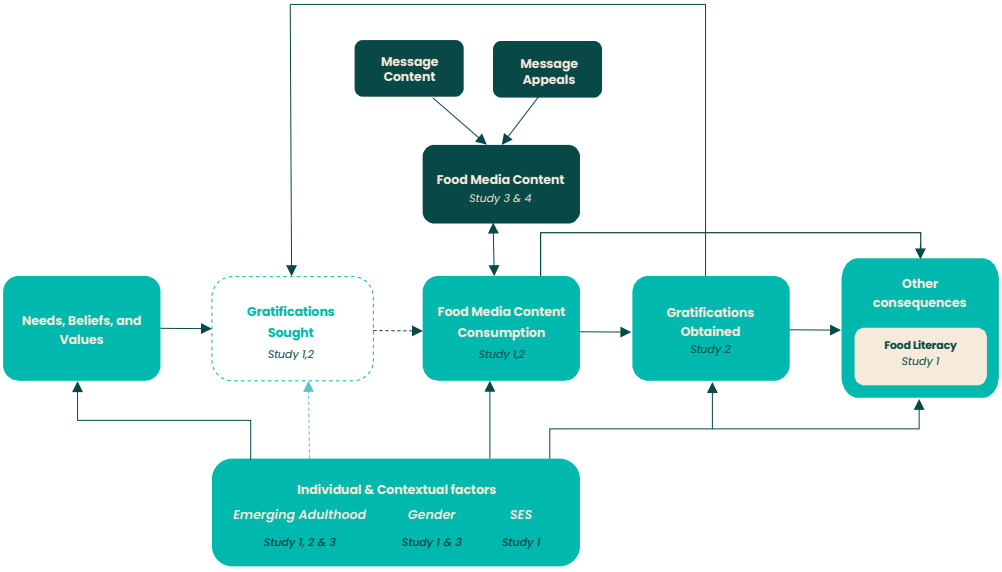
First, this dissertation seeks to investigate the motivations and patterns behind emerging adults' engagement with food media messages and emerging adults' perceptions of food media for enhancing food literacy. While existing research has highlighted varying content-related motivations that prompt individuals to seek out specific types of food media messages, these investigations are limited due to their narrow focus on particular message types. Additionally, previous research (Ngqangashe et al., 2021) has neglected the affordance-related gratifications associated with food media consumption. Hence, within the first aim, a first sub-aim is to explore both the content- and affordance-related GS for food media consumption. However, as highlighted, GS and GO are not necessarily the same and must be empirically distinguished to adequately understand why people consume food media messages and what they perceive to obtain. However, to the best of our knowledge, GO from food media messages has not yet been explored, particularly concerning its perceived consequences for food literacy among an inclusive sample of emerging adults. Further expanding on the food literacy context, prior studies have predominantly focused on capturing associations between specific elements of food literacy and distinct food media types, often lacking inclusivity within their samples of emerging adults. This gives rise to the second sub-aim: to unravel perceived GO and the perceived food literacy effects associated with food media messages. Furthermore, the gap in a structured tool to effectively measure the GS-GO distinction in the context of food media content adds significance to

the third sub-aim: developing a quantitative instrument that assesses sought and obtained gratifications from food media messages.

Second, this dissertation aims to examine and evaluate some of the types of food media messages to which emerging adults are exposed. Past research has predominantly concentrated on nutritionally evaluating specific food media types yet has overlooked the exploration of diverse food literacy components embedded within the content. Additionally, previous studies have often fixated on generic food media types, lacking specificity regarding those types to which emerging adults are exposed. Consequently, the first sub-aim of the second objective is to scrutinize the content of food media messages, with a particular focus on investigating to which extent these messages cover food literacy components, along with a nutritional evaluation. Furthermore, the manner in which the content of food media messages is presented cannot be isolated from the content itself. This leads to the second sub-aim, which involves investigating the attributes or communication techniques that characterize the presentation of food media messages to which emerging adults are exposed.

Through a comprehensive investigation of these aspects, this dissertation endeavors to shed light on the potential of food media messages as a means to promote food literacy among emerging adults and contribute valuable insights to the existing body of knowledge in this field.

Figure 2. Dissertations' Theoretical Framework



4.4 Dissertation Outline

The remainder of the current dissertation will be subdivided into two parts, comprising five empirical chapters (see Figure 3). This dissertation made use of a mixed-method approach, not within each separate study but across the different studies. By combining quantitative and qualitative research methods, we gain a more holistic and nuanced understanding of the research topic. Qualitative research offers a deeper exploration of underlying meanings, motivations, and contexts, while quantitative research methods may generalize the qualitative data and provide statistical evidence (Tashakkori & Creswell, 2007).

In the first part, we will focus on exploring emerging adults' food media experiences and their perceptions in relation to food literacy. The first part adopts a broad perspective on food media messages, encompassing diverse content, senders, and transmission channels. In this part, food media messages are defined as "*all mediated messages about food, including any food-related content, sent by source, and transmitted by any medium*." This inclusive conceptualization allows for a comprehensive understanding and overview of emerging adults' engagement with food media messages. This is particularly important given that emerging adults are cross-media users utilizing various media platforms, where they are exposed to a range of food-related messages. Therefore, it is crucial to examine and comprehend the different types of food media messages that resonate with emerging adults and the underlying reasons for their engagement. This part will comprise three empirical chapters (Chapters One, Two & Three).

Chapter One will first qualitatively investigate why emerging adults select particular food media messages, how they engage with them, and what they perceive to gain from these messages in terms of food literacy. These goals were explored using a qualitative approach, specifically through focus group discussions incorporating photovoice prompt techniques. Focus group discussions were chosen as they allow for dynamic exchanges among emerging adults, capturing their diverse viewpoints and experiences (Krueger, 2014). Additionally, employing the photovoice technique within the focus group discussions provided emerging adults with a convenient means to discuss their real-life experiences with food media, as opposed to solely relying on direct questioning without any prompting techniques.

Chapter Two focuses on the development and validation of a quantitative measure aimed at systematically assessing the GS and GO from food media messages (*The Food Media Content Gratifications Scale – FMCG)*. This chapter builds upon the qualitative findings presented in Chapter One. The absence of a quantitative measure specifically designed to investigate the GS and GO aspects of food media messages has limited comparability and generalizability. To address this gap, we have developed and validated a scale that can be employed across

diverse food media contents, utilizing a sample of adults rather than exclusively targeting emerging adults. This approach broadens its applicability and potential for wider implementation. To ensure the scale's relevance in capturing the food media content gratifications among emerging adults, we conducted measurement invariance testing. This rigorous process guarantees the scale's appropriateness for assessing the food media content gratifications experienced by emerging adults.

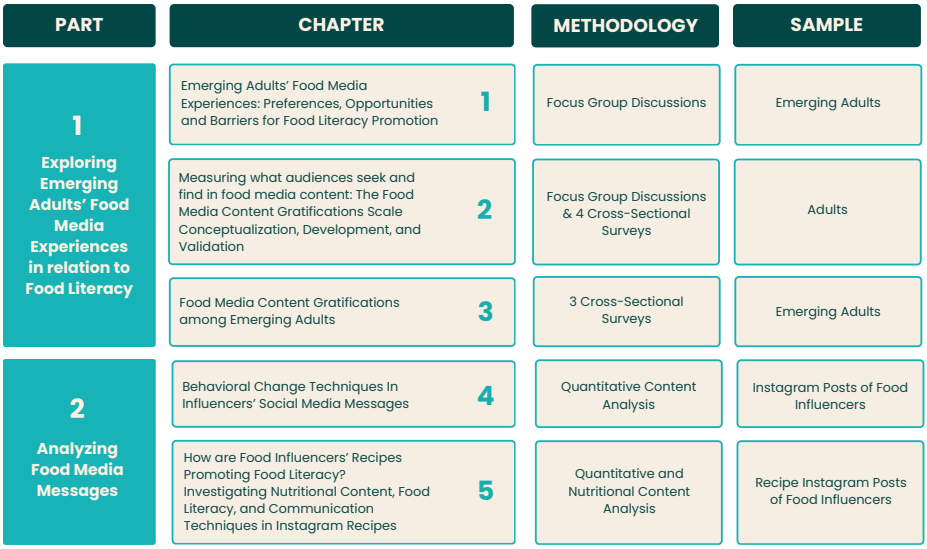
Chapter Three presents a research brief that uses the food media content gratifications scale to quantitatively explore the FMCG scale among emerging adults. This investigation builds upon the foundation laid in the previous chapter, where we developed and validated the FMCG scale as a valuable tool for assessing gratifications related to food media content. In this chapter, we offer a concise overview of the findings from three cross-sectional surveys, summarizing our insights into emerging adults' food media content use.

The second part of the dissertation will be devoted to exploring some of the food media messages that emerging adults are exposed to. In the first part, we found that emerging adults mainly attend online food media messages, especially from Instagram, and that popular food personalities play an important motivation to consume food media messages. Therefore, in this part, we focused on online food media messages from food influencers and celebrities. More specifically, we conducted a pilot study to capture emerging adults' favorite food-related celebrities; these celebrities were used as samples. The second part consists of two empirical chapters (Chapters Four & Five).

Chapter Four provides an overview of how influencers, in general, design messages and if behavioral change techniques can be observed in food influencers' messages. Influencers aim to design messages that attract and resonate with their audiences' interests and help them build an authentic and expert identity. Thereby, influencers are successful because they know their target audience inside out and know how to create influential content that charters engagement. Health promotors often collaborate with influencers, which allows for the health messages to reach a wider audience. However, contrary to influencers, when health promotors design messages, they primarily focus on behavioral change theory and techniques (BCTs). The current chapter aims to explore if BCTs are also observable in the messages of influencers and how they are implemented. First, it starts with providing an overview of how health promotors and influencers design messages based on their own perspectives. Next, it presents a case study involving a quantitative content analysis of three popular Flemish food influencers to investigate the presence of Behavior Change Techniques (BCTs) within the messages of these food influencers.

Chapter Five focuses on investigating the recipe posts of food influencers and food celebrities in terms of (1) references to food literacy, (2) nutritional value, and (3) communication techniques (i.e., use of rational and emotional appeals). In this chapter, we focus on the most popular food content on social media from food celebrities, namely recipe-related content (Steils & Obaidalahe, 2020; Wang et al., 2022).

Figure 3. Dissertation Outline



PART 1

Exploring emerging adults' food media experiences in relation to food literacy

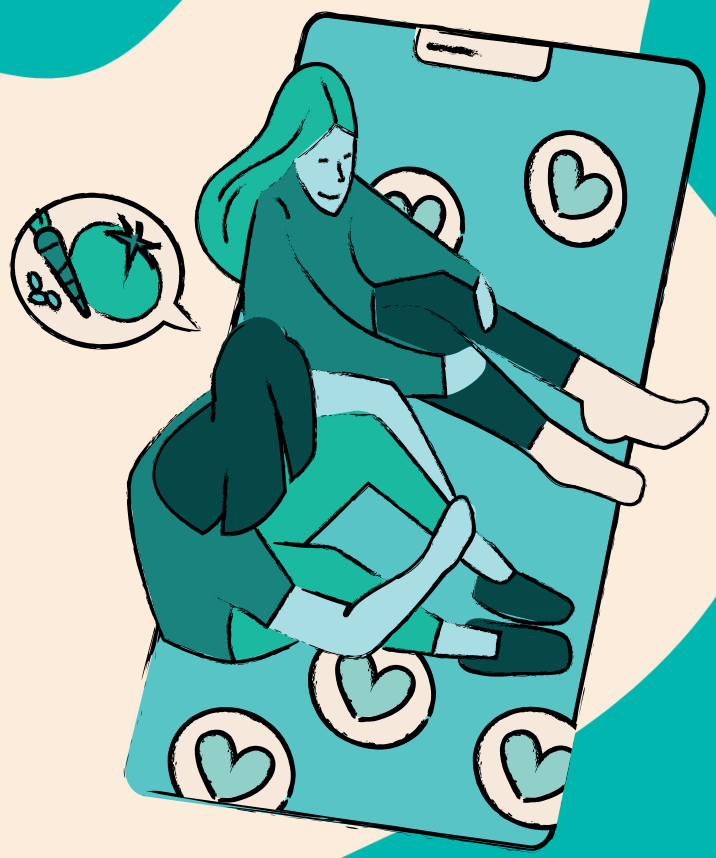
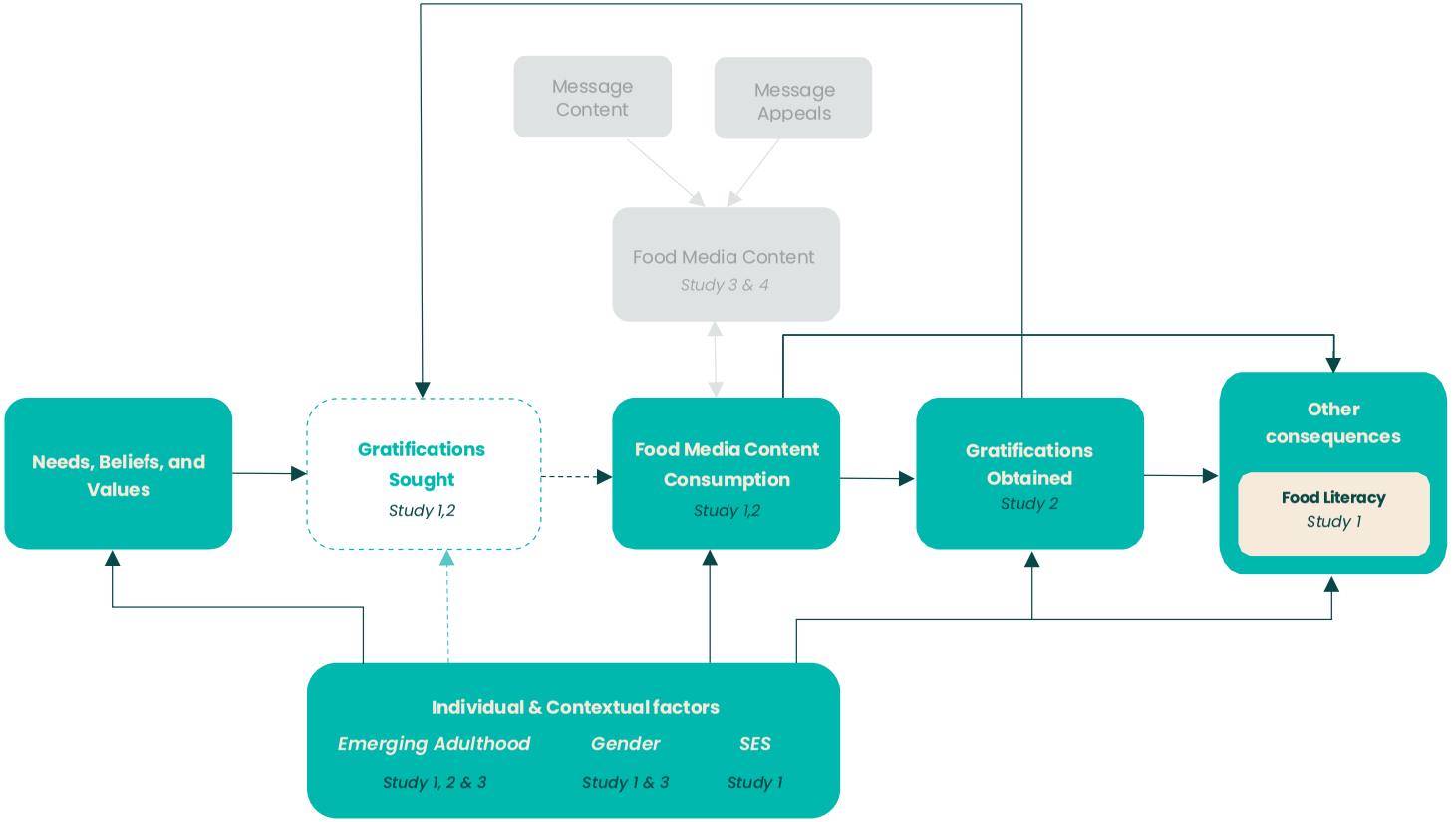


Figure 4. Dissertations' Theoretical Framework applied to Part One



CHAPTER 1

Emerging Adults' Food Media Experiences: Preferences, Opportunities and Barriers for Food Literacy Promotion

Based on Teunissen, L., Cuykx, I., Decorte, P., Vandebosch, H., Matthys, C., Pabian, S., Van Royen, K., & De Backer, C. (2023). Emerging adults' food media experiences: Preferences, opportunities, and barriers for food literacy promotion. *Communications*. https://doi.org/10.1515/commun-2022-0051

ABSTRACT

This study aims to understand how and why emerging adults come into contact with food media messages and what they perceive as the positive and negative outcomes related to food literacy. Seven focus groups, stratified by gender and socio-economic status, with 37 emerging adults aged between 18 and 25 were conducted. Photovoice was used to reflect on participants' real-life food media experiences. Findings of the focus groups reveal that food media consumption is a combination of actively searching and incidentally encountering. The results suggest that food media messages attract emerging adults' attention by bringing content in an entertaining, engaging, and appealing way accompanied by popular food personalities. Finally, food media messages were perceived to both enhance and distort food literacy. The results show how food media messages for food literacy interventions can be designed in order to attract emerging adults' attention and fulfill their specific needs.

Keywords: Food Media, Food Literacy, Focus Groups, Emerging Adults

INTRODUCTION

Emerging adults make the transition from adolescence to adulthood. These 18 to 25-year-olds can make independent choices and establish their unique self apart from their parents and community (Arnett, 2014). This is also evident in the area of food-related behaviors. Often, for the first time, emerging adults decide independently for the first time what to eat, how to plan their food intake, what to buy at the grocery store, what to cook, and with whom to eat a meal (Slater et al., 2018). However, research shows a decline in diet quality during the period from adolescence to adulthood (Forshee & Storey, 2006). Changes in eating behaviors include fewer fruits and vegetables (Deforche et al., 2015), increased consumption of fast foods (Niemeier et al., 2006), and regular skipping breakfast (Niemeier et al., 2006). Although emerging adults' unfavorable food-related behaviors may be part of their food culture to show off their independence, it may also result from insufficient food skills and nutrition knowledge to have a confident and empowered relationship with food (Engler-Stringer, 2010; Lang & Caraher, 2001; Slater et al., 2018). To avoid the health risks related to an unhealthy dietary pattern, it is important to promote food literacy (Vidgen & Gallegos, 2014).

The concept of "food literacy" refers to the knowledge, skills, self-efficacy, and behaviors required to *plan and manage*, *select*, *prepare*, and *consume* a healthy meal in ways that promote physiological and psychological health (Vidgen & Gallegos, 2014). "Plan and manage" includes making time for a meal and budget planning. "Select" refers to selecting grocery items, understanding food labeling, and judging the quality of foods. "Prepare" indicates the importance of making a good-tasting meal from whatever food and kitchenware are available and applying basic food hygiene principles. Finally, "eat" implies the understanding that food affects personal well-being, that food intake must be balanced, and that eating meals should be enjoyed. Former studies already found that higher food literacy is associated with a higher frequency of fruit and vegetable consumption (Poelman et al., 2018; Qutteina, Hallez, et al., 2022), lower consumption of snacks and sugar-sweetened beverages (Poelman et al., 2018; Qutteina et al., 2021), and lower self-report ratings of long-term illness and bad health status (Palumbo et al., 2019).

Former food literacy programs were mainly aimed at children and adolescents (Brooks & Begley, 2014; Elsborg et al., 2022; Wickham & Carbone, 2018). Interventions that targeted emerging adults were often limited to cooking classes and focused mainly on food preparation skills (Bernardo et al., 2018; Ellis et al., 2018). However, food literacy encompasses more than only food preparation skills. Additionally, cooking classes suffer from selection bias and high attrition rates and lack the ability to reach large groups cost-effectively (Hasan et al., 2019; Reicks et al., 2014). Therefore,

other novel strategies are warranted to reach diverse groups of emerging adults on a large scale.

Researchers have explored if and how nutrition interventions can be delivered via traditional and online media outlets (Klassen et al., 2018; Nour et al., 2017). Emerging adults, in particular, may be receptive to receiving food literacy interventions through media, as they exhibit high levels of media use (Arnett, 2014; Vandendriessche et al., 2021). Additionally, reaching emerging adults through channels and content they already use and are willing to pay attention to may be a more effective way to deliver health messages, including ones to promote food literacy (Snyder, 2007). Within these traditional and online media, emerging adults are increasingly exposed to food-related content (e.g., cooking television and recipe videos on social media). These food media messages range from more entertainment formats, such as culinary television in the form of a game, to more informational formats, such as recipes (De Solier, 2005). Although food media messages are available in various formats and omnipresent on different platforms, emerging adults can differ in which platforms they use and what they encounter (Griffioen et al., 2021). Therefore, studying food media messages from a multi-media perspective, focusing on messages from different platforms: print media, television, and online media covering both entertainment and educational formats, is necessary. The current study aims to unravel (1) how and why emerging adults come in contact with food media messages and (2) how they perceive food media messages as opportunities or barriers regarding food literacy.

How and why do people seek out food media messages?

As food media contents are increasingly found on multiple platforms (Lupton, 2020), a deliberate approach to understand the exposure and use of these messages is necessary. Individuals can either consume food media messages in a more passive and incidental way or via a reflective and goal-directed approach (Ngqangashe et al., 2021). For example, emerging adults who want to learn how to prepare spaghetti can actively search for recipes in order to gratify their needs, or individuals who use Facebook to pass the time can accidentally come across recipes. This reflects two media perspectives why individuals choose and consume media (Hartmann, 2009). On the one hand, there is a selective media perspective, which presupposes an active media audience. This media audience carefully selects media (contents) to fulfill certain needs (Katz et al., 1973; Rubin, 2009). A central theory within this perspective is uses and gratifications (U&G) (Ruggiero, 2000). On the other hand, from a structural media perspective, media are consumed because of various structural characteristics such as availability, access, and channel preferences, which may occur accidentally and are not always sought to fulfill needs (LaRose, 2010; Van Den Bulck, 1995). In this perspective, audiences are viewed to be more passive (Webster et al., 2006). Each perspective provides important insights into

how individuals come into contact with food media messages. However, former research tends to focus on one perspective to explain exposure to media (Cooper & Tang, 2009). With the current media landscape, researchers argue to combine both perspectives in order to get nuanced insights into how individuals are exposed to media (Cooper & Tang, 2009). In the context of food media messages, one study already highlighted the importance of combining these perspectives as adolescents showed to both carefully select and more incidentally encounter food media messages (Ngqangashe et al., 2021). In this sense, taking both perspectives into account, the first research question addresses: *how do emerging adults come in contact with food media messages? (RQ1)*.

Independently of how emerging adults come into contact with food media messages, the question arises why individuals pay attention to the message. According to the U&G perspective, individuals actively seek out food media messages to fulfill particular needs. Previous research tends to neglect the cross-media character of food media and has applied the U&G theory to specific forms of food media messages such as food posts on social media (Ladhari et al., 2019; Pember et al., 2018), cooking television (Hemmah, 2009), and mukbangs (i.e. an online eating show where individuals eat food and interact with the viewers) (Kircaburun et al., 2021). Only two studies (Ngqangashe et al., 2021; Smith et al., 2013) considered food media as a broader concept containing media messages about food across various platforms.

The most recurring gratification categories in food-related messages consisted out of entertainment, education in terms of learning how to cook and health information, social interaction, relaxation and escapism (Hemmah, 2009; Kircaburun et al., 2021; Ladhari et al., 2019; Ngqangashe et al., 2021; Pember et al., 2018; Smith et al., 2013). These gratifications are focused on the content of the message and have not paid attention to the motivations related to the platform's technological affordances. However, individuals can either choose for a medium based on the content and/or for the platform's technological affordances (Sundar & Limperos, 2013). For example, a recent study found that next to content-related motivations, news consumption is driven by affordances like customizability, increasing accessibility, and aesthetics (Lou et al., 2021). Especially in the context of food media, it is important to explore affordance-driven gratifications. Each media platform presents different technical affordances, leading to different ways to create and promote food media messages (Goodman & Jaworska, 2020), which can induce affordance-driven motivations to consume food media messages. Despite the fact that former research mainly focused on content gratifications, researchers have recommended to consider both content and affordance-driven gratifications (e.g. interaction possibilities) to accurately understand individuals media consumption (Rathnayake & Winter, 2018; Sundar & Limperos, 2013). Therefore, the second research question reads as follows:

What are the content and affordance-driven motives for actively searching food media? (RQ2)

On the other hand, Ngqangashe and colleagues (2021) showed that adolescents are also exposed more incidentally to food media messages. Although individuals can be exposed to food media messages more passively, they can still decide whether to explore it more in-depth or not (Cooper & Tang, 2009; Vraga et al., 2019). However, if and why individuals pay attention to the encountered message is not clear yet. Therefore, this study investigates both the motivations for actively searching and reasons for paying attention to incidentally consuming encountered food media: *What are the reasons for paying attention to incidentally encountered food media messages? (RQ3)*

Food media for food literacy promotion?

Besides investigating how emerging adults come into contact with food media messages and why they choose to consume these messages, this study explores how emerging adults perceive food media as barriers or opportunities for improving food literacy.

First of all, former research has tended to focus solely on the motivations why individuals seek out media messages. However, the gratifications the audience wishes to obtain (GS) are not necessarily the same as the gratifications they actually obtain (GO) from food media use (Katz et al., 1973; Palmgreen et al., 1980). First of all, researchers noted that GS, were not always obtained. For example, Perse and Rubin (1990) found that individuals who watch television for social uses, ended up being more lonely after watching television. Second, researchers found that gratifications can be obtained without initially seeking for them (Palmgreen et al., 1980). This means that gratifications can be obtained without expecting to find them, which is linked to more passive media consumption (Rokito et al., 2019). For example, incidentally coming across recipes on social media can result in obtaining information on how to prepare a meal. To conclude, GS and GO are not necessarily synonyms and must be distinguished in order to provide better insights into why emerging adults consume food media and what they perceive to obtain from it. In the context of food literacy, these GO will yield insights in both whether food media already (incidentally) promote food literacy, and where there is still potential for improving food literacy promotion via food media in the future.

However, it is important to bear in mind that not all food media messages may actually promote food literacy or other healthy food behaviors. Former research has indicated that traditional and online food media messages mainly portray unhealthier foods (Ngqangashe et al., 2018; Qutteina et al., 2019). So, depending on what food media messages display, they can also cause adverse effects such as:

promoting poor food choices (Ventura et al., 2021) and causing an increased BMI (Pope et al., 2015), persuading people to follow niche eating styles (Lupton, 2020), and leading to confusion about what to believe (Malan et al., 2020). It is therefore important to not only investigate the potential perceived positive outcomes but also reflect on the possible negative perceptions. Therefore, the final research question this study aims to answer is: *What do emerging adults perceive as positive and negative outcomes in relation to food literacy from consuming food media messages? (RQ4)*

METHOD

The Consolidated Criteria for Reporting Qualitative Research (COREQ) provided the framework for reporting the study design and the findings (Tong et al., 2007). Seven focus group discussions with photovoice technique were carried out to understand how and why emerging adults consume food media, and what the relation with food literacy is. Focus group discussions were chosen as the discussions between emerging adults about food and media can caption their dynamic viewpoints and experiences (Krueger, 2014). Using photovoice techniques in focus group discussions offer emerging adults' the opportunity to talk more conveniently about their real-life food media experiences than just asking straight away questions without any prompting technique (Krueger, 2014, p. 130). Furthermore, visual techniques such as photovoice have been proven to be effective in gathering and helping young people express their food and media experiences (Qutteina et al., 2019).

Prior to the data collection, ethical approval was granted by the Ethics Committee for the Social Sciences and Humanities of the University of Antwerp (Ref No: SHW_19_44). This paper is part of a larger project that aims to capture food media experiences and perceived influences on food-related behaviors among emerging adults (see also (Decorte et al., 2022)).

Participant selection and recruitment

Emerging adults between 18 and 25 years old were eligible to participate in one of the focus group discussions. In general, women and more educated people participate in research more often than men and less educated people (Smith, 2008). Therefore, a stratified sampling method was used to ensure a balanced distribution of gender (female and male) and socio-economic status (low and high SES). The mother's academic level was used to determine emerging adults' socio-economic status, as they themselves are often still obtaining their education and have little or no income during this life stage (Arnett, 2016; Hamilton & Hamilton, 2006).

Different approaches were used to recruit low and high socio-economic emerging adults. We reached out to local youth services and vocational schools to recruit low socio-economic emerging adults. These organizations contacted the emerging adults, informed them, and arranged a location where emerging adults felt comfortable participating in a focus group discussion. Participants with a higher socio-economic status were recruited using convenience and snowball sampling techniques such as social media announcements, flyers in public places, and word-of-mouth methods. Interested emerging adults registered themselves online. Here, they had to fill in their socio-demographic characteristics such as their gender and the mother's educational level to ensure they belonged in the right participation group.

Data collection

For each stratified subsample combination, a focus group discussion was organized in order to ensure homogeneity with sufficient variation to allow diverse experiences (Krueger, 2014). However, the focus group with the subsample of female and low socio-economic status had only three participants. Therefore, an additional focus group was carried out. In total seven focus group discussions were carried out with 37 emerging adults from November to December 2019. See Table 2. for an overview of the focus group compositions.

Table 2. Focus group compositions

Focus Group	Frequency	Mean age (SD)
High SES, mixed	6 (3 men)	22.17 (1.83)
High SES, men only	7	21.86 (1.67)
High SES, women only	6	20.83 (1.94)
Low SES, mixed	4 (1 men)	20.75 (1.71)
Low SES, men only	5	21.6 (2.07)
Low SES, women only (1)	3	20 (1)
Low SES, women only (2)	6	21.17 (1.17)
Total	**37**	**21.32 (1.68)**

The photovoice technique was used to facilitate the focus group discussions. More in particular, participants were asked to keep a short photo diary a week before the planned focus group. Emerging adults needed to take at least five random images of food media messages they encountered and five pictures of meals they prepared or ate. These photos were used as prompts to stimulate the discussions and to produce new and insightful information (Krueger, 2014, p. 130).

The focus group discussions were held at the university for emerging adults with high SES and at local youth services or vocational schools for low SES participants. We deliberately chose to hold the focus group discussions at the university and at local youth services to make participating emerging adults feel comfortable and familiar. The primary researcher led the discussions, and another researcher was present to take field notes. At the start of each focus group discussion, the researcher explained the purpose of the study and underlined that all data would be processed anonymously. All participants were fully informed at the beginning and signed a written informed consent. Next, the participants completed a short anonymous questionnaire, including items on demographics.

After that, the interview took place and lasted between 60 and 108 minutes. During the focus groups, a semi-structured interview guide was used. This interview guide was pre-tested in two pilot focus groups. At the beginning of the interview, each participant first explained which photos of food media messages they brought for discussion. Here, we asked more profound questions into why they looked up these examples of food media or what they think they get out of them in general, in order to map emerging adults' food media use and motivations. Next, we turned to the photos of what they had prepared or eaten. These examples were used as prompts to ask if food media inspired them to prepare or eat these certain meals. Further questions concerned what emerging adults perceive to obtain from food media, given special attention to food literacy components such meal planning, grocery shopping, meal preparation, and eating behavior. Afterwards, everyone was allowed to ask any remaining questions, and the researcher handed out a €15 shopping voucher for their participation.

Data analysis

The semi-structured and audio recorded group discussions were transcribed ad verbatim with the support of field notes made by the assistant moderator (Bergin, 2018). The transcribed focus groups were imported into NVivo 12 software for analysis. Two researchers took part in the coding process following a grounded theory approach (Corbin & Strauss, 1990). First, both researchers each open coded a (different) focus group discussion in order to explore the data. Subsequently, the researchers moved into axial coding to establish a preliminary codebook. Codes in the data were developed and subsequently arranged into themes. Second, one researcher selectively coded all the transcriptions using the preliminary codebook while adding new topics if necessary. Finally, the other researcher used the final codebook from the first researcher to code one more focus group to guarantee inter-coder reliability. In NVivo 12, Kappa scores were calculated on a subset (10% - one focus group) of the data (O'Connor & Joffe, 2020), and resulted in an overall inter-coder agreement of 88%. Quotes used in this article are translated into English.

RESULTS

Sample Characteristics

In the seven focus groups, twenty-one (56.8%) female and sixteen (43.2%) male participants with a mean age of 21.32 (SD = 1.68) participated. The majority of emerging adults were students (70.3%) living fulltime at their parental home (62.2%). Participants with a higher socio-economic status (54.1%) are slightly more present in the sample. An overview of the sample characteristics and participants food-related behaviors is presented in Table 3.

Table 3. Sociodemographic Characteristics of Participants

Demographics	***n***	**%**
Nationality		
Belgian	37	100
Gender		
Women	21	56.8
Men	16	43.2
Educational attainment		
Low	3	8.1
Middle	23	62.2
High	11	29.7
Mother's educational attainment		
Low	4	10.8
Middle	13	35.1
High	20	54.1
Living situation		
With parents	23	62.2
Fully independent	8	21.6
Independent during the week	6	16.2
Employment		
Student	26	70.3
Full Time	4	10.8
More than half time	3	8.1
Unemployed	3	8.1
Permanently incapacitated for work	1	2.7

Food media exposure

Emerging adults were asked to bring pictures of food media messages (explained as "any type of media message about food, except food related advertising") to the table. Most of these messages were examples of online food media captured with their phone or computer. Only a few examples of print food media messages were taken and discussed, namely cookbooks and recipe cards or magazines from supermarkets. The taken online food media messages came from various media but mostly from Instagram, Pinterest, Facebook, YouTube, or recipe websites. The pictures emerging adults brought to the table were examples of various food media formats: recipes or recipe promotions, nutritional advice, food products, restaurant recommendations, and various forms of food advertising (indicating that emerging adults could not always distinguish between traditional food-related advertising and food media messages, as defined in this study).

Participating emerging adults discussed different ways of how they came into contact with food media messages. They stated to either deliberately search for food media messages or incidentally encounter these messages. First, emerging adults mentioned that they search for food media messages on different platforms: television and online streaming services, Google and other websites, social media (Instagram, Facebook, and Pinterest), and print media (cookbooks and food-magazines). Second, all participants reported coming across high amounts of food media messages in two ways, either explicitly via family, household members, and friends, or through scrolling on social media or channel surfing on television.

In terms of incidental exposure through family, friends, and household members, participants stated that they either got tagged in or were forwarded interesting food messages or that they watched along when family members or friends were watching cooking programs on television: *"My roommate watches Bake Off (i.e., a game show), and then I started to watch along with her, and really it is entertaining" (Male, 23y, high SES).*

Another way of incidental exposure participants discussed was when they were *"just scrolling down"* on social media and encountered food media messages. This mostly happened on social network sites such as Facebook, Instagram and YouTube. This finding was also reflected in the pictures emerging adults' brought to the focus group discussions. They stated that they were more aware than usual that they encountered many messages about food without looking for them, reminding them to take a screenshot for this study. For example, one participant commented: "*One of those videos that fill up your timeline for minutes, where you scroll past, and stop to watch because something gigantic is being prepared" (Male, 23y, high SES).*

Additionally, emerging adults in this study mentioned that they perceived to see more food media messages, "*because if you click once, it comes up several times, and then you keep looking, and in turn it keeps coming" (Male, 21y, high SES)*. Another participant illustrated it as follows: *"and somehow I end up there, watching Tasty, and eventually when I see Tasty videos, it comes back every time" (female, 20y, low SES)*. These examples highlight the role of algorithms plays in the ubiquitous food media messages in emerging adults' lives.

Finally, participants mentioned to encounter food media messages on television. They revealed that when they are channel surfing on television and come across cooking television, they watch it because there is no other interesting content on television: "*Yes, if it's turned on the television, I will watch, but I won't set it up myself, although I find it interesting to watch" (Female, 19y, high SES).*

Although emerging adults in this study frequently encounter food media messages, this can lead to actively searching or following specific food media messages: "*If I come across videos and watch them, I save them. And then, when I think about what I want to prepare for today, I search in my savings to get some inspiration" (Female, 19y, low SES).*

Motives for actively searching food media messages

The findings from the focus groups discussions reveal *education*, *entertainment*, *popular food personalities,* and *convenience* as four overarching gratification themes explaining why emerging adults actively seek out food media messages. The first three categories: education, entertainment and food personalities are content-related gratifications, while the last category "convenience" is an affordance-driven gratification.

Education. The first theme that emerged from the focus group's findings and was mentioned most, is education. The theme "education motives" consists of (1) information about how to prepare a meal, (2) inspiration to prepare a meal, and (3) information about food and health.

The first subtheme from education motives is information about how to prepare a meal. Participants actively seek out food media messages to learn how a particular meal is prepared. For example, a male with low socio-economic background (23y) said: "*I search it if I really want to make something that I have no knowledge of, take for example that I want to make a curry or something, I just wouldn't know how to start*".

Additionally, a few participants indicated that they watch food media messages to learn tips and tricks to make cooking more accessible or efficient: *"… I follow that because there are often easy tips, and so on" (Female, 23y, high SES).*

The first sub-theme differs from the second. The sub-theme "information about how to prepare a meal" refers to the fact that emerging adults have the intention to search for food media posts to learn how to make a meal, while the second sub-theme focuses on "getting ideas to prepare a meal", but not necessarily to learn how to prepare it:

… I mainly watch, I mean I mainly look up something if I actually have no inspiration. Then I go to some YouTube channel, and then I see … what they have prepared, and then I choose one of those ideas… . (Male, 25y, low SES)

The participating emerging adults search for recipes mainly directly via Google, Pinterest, or cookbooks. While meal inspiration was either searched for on Facebook, Instagram and free supermarket magazines.

The last sub-theme under education is information about food and health. Half of the focus group discussions mentioned that they would seek out food media messages to learn more about food- and health-related topics. For example, a male participant (20y, high SES) stated that: *"… for me it is purely informative because I am so very interested in fermenting and then watching what other people use, so that I can implement it myself, so yes for me it's for gaining information".*

Entertainment. The second theme concerns entertainment motives. Compared to education motives, entertainment was less mentioned, but more in comparison to popular food personalities. The entertainment motives that emerged were (1) enjoyment, (2) humor, (3) food porn, and (4) relaxation and to pass time. Across all focus groups, participants discussed that they consume food media for entertainment motives. In this case, the participants had no intentions to fulfill other motivations such as educational ones: *"… that's for entertainment "Kitchen Nightmares". Sometimes he does prepare recipes, but I don't look for that" (Male, 24y, high SES).*

The first subtheme is enjoyment. Emerging adults in our study actively searched for food media messages because they *"just really like to look up cooking videos" (Male, 21y, high SES).* The majority specifically looked for enjoyment in food media messages through television and online streaming services, whilst Instagram and YouTube were less mentioned within this context.

Another subtheme was related to food media messages emerging adults consume to make them laugh. In this study, cooking programs on television or online streaming services were sought out to laugh and have fun. The mentioned cooking programs in this context focused on bringing entertainment-related content, such as MasterChef or Cupcake Wars, instead of step-by-step instructions on how to prepare a meal.

Food porn emerged as third subtheme of entertainment. The participating emerging adults reported that they would follow online food-related accounts on Instagram because it is just beautiful to watch. One emerging adult (*Female, 19y, low SES*) in our study mentioned it like: *"I follow them and they always put…, I find the pictures they take from their food, I always find them super attractive, I don't know, that always catches my eye…"*.

The final subtheme is "relaxation and to pass time". Here, participants indicated that they would seek out food media messages to relax or to pass time. For example, one female participant (21y, high SES) said: *"yes, if the lesson is boring, then I sometimes open the website to see if something new has been added and that is relaxing yes"*.

Popular food personalities. The second last theme concentrates on the personalities present in the food media messages. The participating emerging adults referred to several different types of food personalities ranging from celebrity chefs (e.g., Jamie Oliver), food influencers (e.g., Binging with Babish) to traditional celebrities (e.g., Chrissy Teigen). Participants stated that each food personality has their own exceptional characteristics and visions about food which ensured that participants feel or do not feel attracted to the personality. They would specifically seek out food media messages due to the personality's *"character, charisma, and just the way they perform, because in the end, it is less about the food and more about the person" (Male, 25y, low SES)*.

Convenience. The final theme of why emerging adults actively consume food media messages is derived from media and platform affordances. Emerging adults cited several specific platform affordances related to convenience as motives.

First of all, emerging adults in our study stated the difference between online and print outlets to search for food media content, specifically recipes. Overall online sources were preferred for looking for recipes, as they are primarily free of charge to use. The participants profiled themselves as "*very digital" (Male, 19y, high SES)* and perceived online sources as the easiest and fastest way to search for recipes: *"Nowadays everything can be searched via the mobile phone, then I find it easier to just look for spaghetti Jeroen Meus than to first leaf through a book and*

to be able to keep it open" (Female, 23y, high SES). Furthermore, online food media provide the possibility to deliver videos, pictures, and texts as recipe guidance.

Additionally, online sources provide several other affordances than print media, such as filter options, which help to access complex information in an easy way. For example, one female participant said: *"…I am a vegetarian, and they really indicate that or have specific filter options, which is super handy…(23y, high SES)"*.

Another participating emerging adult said that some online food media even provide them with a complete shopping list or tools to create their shopping list:

I watch "Dagelijkse Kost" (a TV cooking show) online. When I was just living alone, I looked up because that site is very clear. That's really self-evident. You just choose pasta or meat or veggie. And then you make your recipe selection, and then there is a video in which he explains the recipe. And a grocery list and a list of how to make it, and yes, it couldn't be more straightforward. (Man, 23y, high SES)

Only two participants sometimes preferred print media above online media: *"I find that useful sometimes. I also bake stuff now and then, and when your hands are completely full, then I don't mind holding a book compared to my mobile phone or a computer or something" (Female, 23y, high SES).*

Reasons for attending encountered food media messages

Emerging adults reported encountering large amounts of food media messages without actively seeking them out. Nevertheless, when they come across these messages spontaneously, the message catches their attention, and they engage with it. The results of the focus groups show that the participants' attention is caught because (1) the food looks tasty or is portrayed in appealing ways, (2) the content seems to be interesting, enjoyable, or fascinating, or (3) they want to pass the time. These motivations were brought up when discussing visual content (pictures or videos) on television, Facebook and Instagram.

Attractive food. Participants reported that they would watch when the pictured food looks tasty or is portrayed beautifully. One interviewee said: *"If it looks good, I will keep watching …" (Male, 23y, high SES).* However, when the portrayed food is not aligned with their food preferences, they would rather skip it. For example, a highly educated male participant (21y) mentioned:

If it is there, and I like the title, then I think yes, why not. Especially things with meat because I am a big meat eater. If there is something like vegan or vegetarian, then I click it away and report it for spam because yes, I cannot accept it.

However, a few emerging adults illustrated that although these messages about food were not aligned with their food preferences, they would still watch it. The only reason for this was that they would consume food media messages for entertainment motives:

I don't know why, I am totally not a baking lover and I don't like it either, but I always come across cake or something with chocolate in it in … and yes, yes, I like watching but not to make it myself. (Female, 19y, low SES)

Arouse interest. If the food media message arouses the interest and curiosity of the emerging adults, they mention being more likely to consume the message. For example, one participant said: *"You are also curious what it eventually will be … so yeah, you just keep looking" (Female, 19y, low SES).*

Pass time. The participants reported consuming encountered food media messages because, at that moment, they believed they had nothing better to do. One male participant illustrated: *"… I'm actually only on Facebook when I'm on the toilet, and you have nothing to do. So, I only watch those videos when I'm on the toilet" (Male, 21y, high SES)*. Another participant stated, *"I would absolutely not know why, but every time I click on it, it is when I'm bored or something" (Male, 23y, low SES).*

Perceived positive and negative outcomes related to food literacy

In terms of planning and managing food intake. Perceived outcomes of food media messages in relation to the food literacy component of "planning and managing" was the least discussed among emerging adults. However, in three of the seven focus groups, respondents indicated that food media, especially cookbooks and online food media, helped them to construct a plan to manage food intake:

… we really make a plan so that we first take a look in the cookbooks "yes, we want to eat that once and this and this and this" … Then arrange the planning, so you know what you need from the store. (Female, 21y, low SES)

In terms of selecting foods. The perceptions of emerging adults regarding the component "selecting" focused on two aspects namely obtaining food- and nutritional knowledge and expanding interest in new and cultural foods.

Every focus group discussed the role of food media to transfer knowledge about diets, and other food-related themes. Food media were perceived as an inspiration source to follow a specific diet. Participants indicated that they got information about specific diets. Some emerging adults admitted that they did follow specific diets, because they had seen or read something about it in food media messages.

However, not all suggested diets in food media meet the nutritional standards (Ngqangashe et al., 2018), and therefore it can also act as a barrier to consume a healthy diet: "*I once came across 'one meal a day' on Reddit … and I am already doing that for a while" (Male, 24y, high SES).*

The findings also revealed that emerging adults perceived their interest in new and cultural foods to be expanded through food media messages. Participants talked about the opportunity of food media messages to enrich their interest in new and cultural foods: *"… on Reddit. That's oriental cuisine, those are such things that are not common here" (Male, 23y, low SES).*

In terms of preparing meals. The most discussed perceived outcome of food media use was related to the preparing element of food literacy. According to our participants, food media recipes were used to prepare a meal, which was perceived to contribute to their food preparation skills. They either followed recipes diligently step-by-step or transformed them into their own meal creations inspired by a recipe. However, if recipes seemed to be difficult to prepare, not in line with their food preferences, and required too many or unavailable ingredients, participants argued that they would not prepare the recipe or adjust it. For example, one participant said: *"….but that was with so many ingredients that I would never make that myself" (Female, 23y, low SES).* Another participant *(21y, high SES)* stated that he would adjust the recipe if he did not have all the ingredients available at home: "*Yes, combining recipes does happen if I miss an ingredient or you think 'yes, this can be really nice in it', then yes, I dare to improvise the recipe".* Additionally, participants indicated that food media messages that display food (waste) hacks or innovative cooking techniques, inspired them to implement them in the kitchen.

In terms of eating meals. In five of the seven focus groups, emerging adults discussed food media messages as an opportunity to cook and eat together with others. For example, one female respondent (21y, low SES) indicated that she used cookbooks to plan meals and prepare recipes together with friends:

. . . then we also grab my cookbooks and then we look at "what are we going to make?" and then we go to the shop together and then we actually make it a bit of an activity to cook together based on the cookbook.

Additionally, several male participants even stated that they would only use food media recipes, if they cooked for others:

Interviewer: So, if you cook for yourself, you wouldn't cook from the cookbook ?

Respondent: … if you cook for somebody then you get more appreciation and you have a reason, yes, to try something different and to show off (Man, 23y, high SES)

Finally, in half of the focus groups discussions, and especially among the interviewed women, consuming encountered food media messages were perceived to arouse hunger or food craving, occasionally leading to eating. Additionally, the foods depicted in the messages the participants referred to mostly consisted of energy-dense high-calorie food. For example, a woman with a high socio-economic background (19y) illustrated that: "*I had seen a tasty cake on Instagram and then I felt like it and started eating cake.*" However, emerging adults also argued that the foods depicted in food media were mostly perceived as unhealthy and high in calories, which restrained them from consuming a healthy diet: *"It often encourages me to start eating unhealthier . . . because I watch a lot of those very creamy things, and yes now it also comes standard on your feed. . . " (Female, 21y, low SES).*

DISCUSSION AND IMPLICATIONS

Earlier studies have often only focused on (especially content-driven) motivations to consume food media among adolescents, did not distinguish between what individuals seek and obtain from these food media (Katz et al., 1973; Palmgreen et al., 1980), and did not link these (potential) gratifications with food literacy components. Therefore, the current study aimed to unravel how and why emerging adults come into contact with food media messages and what they perceive as opportunities and barriers regarding food literacy thereof. By bringing together what emerging adults seek in or are attracted to in food media messages, as well as what they perceive to obtain from them, our study provides new insights that can support for food literacy interventions that rely on food media messages aimed at emerging adults.

The first research question in this study sought to determine how emerging adults come into contact with food media messages. This study revealed that the participating emerging adults come into contact with food media messages in two ways: they either deliberately search for them or encounter them on television, social media, or via personal contacts. This finding supports previous research stating that food media consumption is a combination of both active and more passive exposure (Ngqangashe et al., 2021; Vaterlaus et al., 2015), reflecting two contrasting perspectives: structural and selective media choice. However, although participating emerging adults reported frequently encountering food media messages "incidentally", we should not see them as passive audiences who solely watch food media messages because of their availability. Our research findings suggest that when emerging adults encounter food media messages, they deliberately choose to consume them or not. Therefore, drawing a precise distinction

between active or passive audiences may not be desirable, confirming previous research that we need to conceptualize audiences as both active and passive or, as Cooper and Tang (2009) suggest, "*active within structures*". Accordingly, to adequately capture food media experiences and effects, future researchers are warranted to use sometimes contrasting media choice theories.

Additionally, another important finding of this study relates to the role personal contacts, especially peers, play in exposing emerging adults to food media messages. Participating emerging adults stated that they come into contact with food media messages through their peers. This finding is in accordance with former research among children and adolescents, that found that they share food media messages and experiences with their peers (Ngqangashe et al., 2021; Ragelienė & Grønhøj, 2021). Peers play an important role in the developmental life stage of emerging adults as emerging adults are sensitive to peer influences and pressure (Gardner & Steinberg, 2005). They try to fit in with their peers, live up to their expectations, and gain their peers' approval, in other words: what their peers value will shine through in what they find important themselves. Moreover, previous research showed that peers' social norms can play a role in emerging adults dietary behaviors (Pelletier et al., 2014). This suggests that the food media messages emerging adults retrieve from their peers are of value and indicate something about what their peers approve of and care about, which could reflect emerging adults' food-related behaviors. For example, suppose peers forward food media messages that portray fruits and vegetables; emerging adults may assume that peers value fruits and vegetables and will be more likely to follow that behavior. Future research should bear in mind that food media messages can be shared by peers and therefore even have a greater potential to promote food literacy. However, if the food media message does not portray desirable food-related behaviors, reverse effects can be caused. For example, a study among adolescents found that descriptive norms (i.e. beliefs about what others eat) mediate the relationship between exposure to more unhealthy food media messages and reported unhealthier food intakes (Qutteina et al., 2021), because the food-related messages often portray unhealthier foods in a social context (i.e. enjoying food with friends) (Qutteina et al., 2019). Future research should therefore also investigate if food media messages that portray healthier foods in a social way are effective to promote healthy food behaviors.

The second research question addressed why emerging adults' actively search for food media messages. Three overarching content-related motives themes: *education*, *entertainment*, and *food personalities* were discovered. These overarching gratification themes corroborate the findings of previous research (Ngqangashe et al., 2021), that found comparable motivation themes for food media use among a study population of adolescents. Although the needs of both

target populations seem to be similar in both studies, the strengths of the needs seem to differ. For example, using food media messages to learn how to prepare a recipe is much more common in emerging adulthood, as they now often live alone and independently need to prepare their own meals. Future research should be aware of these differences and make clear distinctions between the life stages of adolescents and emerging adults.

Furthermore, in contrast with the findings of Ngqangashe et al. (2021), this study found, next to content-related gratifications, one affordance-driven gratification for food media consumption, namely *convenience*. This finding highlights the importance for U&G researchers that motivations can also derive from platform affordances and should be incorporated in research when trying to capture individuals' motivations for media use, as suggested by Sundar and Limperos (2013). Online food media messages were perceived as more easy to find, affordable, and easily adjustable to personal preferences. These perceptions align with earlier research about general internet use, stating that emerging adults perceived the internet as more convenient for accessing information (Smith et al., 2015). This finding may be explained by the fact that emerging adults have grown up with and spend copious time with digital media (Vandendriessche et al., 2021). Moreover, online food media messages can come in both textual and visual content (such as images and videos). Because online food media messages come in many formats, they can provide emerging adults the possibility to choose out of a range of food media messages to fulfil their specific needs.

Concerning the third research question, it was found that although food media messages were not always actively searched for, emerging adults in this study were still able to recall why they decided to further explore the encountered food media message. The focus group discussions revealed that the participating emerging adults would pay attention to the food media message if the food looks tasty, attractive, and aligned with their food preferences. Policymakers should bear this in mind when designing health messages to promote food literacy. Following existing selective exposure theories such as the selective Exposure Self- and Affect Management model (Wilson et al., 2019), our findings suggest that individuals' values and norms, in this case, food preferences, determine the selection of food media messages, which might further strengthen their existing food preferences and food intake behaviors. However, our findings suggest new insights to this theoretical assumption as participants stated that entertainment and curiosity could overpower individual food preferences. This supports the idea of an entertainment-education strategy, where a health message is incorporated into an entertaining media message to positively influence awareness, knowledge, attitudes, and behaviors (Moyer-Gusé, 2008; Singhal et al., 2003). Because of their narrative structure, they foster involvement in the storyline and distinguish themselves from

overtly persuasive messages as they generate less resistance (Moyer-Gusé, 2008). This finding thus carefully suggests that entertainment-education food media messages can grab emerging adults' attention and surpass emerging adults' food preferences, thereby implicitly teaching them about food. However, further research is necessary to examine if these entertaining media indeed surpass emerging adults' existing food preferences, get their attention, and effectively promote food literacy.

Finally, the last research question explored how emerging adults perceive food media to play a positive or negative role towards food literacy promotion. Emerging adults in our study quoted both positive and negative experiences with food media in relation to food literacy. This finding is in agreement with previous research showing that the food media messages can both impede and facilitate food literacy (Malan et al., 2020). This result may be explained by the varying content of the food media messages, as also mentioned by our participants. Similar to our results, previous studies showed that food media messages do not always meet the standards for a healthy diet (Qutteina et al., 2019). This warns us about the potential danger of existing food media messages, as they perchance encourage unhealthier eating habits among emerging adults. Nevertheless, the focus group discussions also reveal various desirable outcomes of food media messages towards food literacy.

In terms of perceived positive outcomes, food media messages were found to be perceived as an opportunity for all food literacy core concepts. However, perceived positive outcomes of food media messages were most mentioned for the "preparation" element of food literacy. Former research have already showed that food media messages can be a successful strategy for improving food preparation skills (Surgenor et al., 2017). Additionally, in accordance with previous research, emerging adults perceive food media messages to provide them with: information about how to prepare a meal (Ngqangashe et al., 2021), inspiration for (new) recipes and meal ideas (Ngqangashe et al., 2021; Vaterlaus et al., 2015), information on how to become healthier/fitter (Malan et al., 2020; Ngqangashe et al., 2021), and interest in new and cultural foods (Tobey et al., 2019).

Taken together, these findings suggest that existing food media messages already have the power to bring certain food-related knowledge and skills to emerging adults. Further research could explore how existing food media messages bring their messages to the audiences (e.g., use of persuasive appeals) in order to reveal their techniques which could be further experimentally tested.

The qualitative approach we used in our study allowed us to gain valuable in-depth insights into emerging adults' food-related media experiences. However, this approach also comes with some limitations. First, the nature of qualitative research

does not allow us to generalize our findings. Secondly, our study might suffer from selection bias. Possibly, the emerging adults who participated in our focus group discussions, were already more interested in nutrition and food. Furthermore, the current study did not aim to make comparisons based on socio-demographic characteristics. Therefore, further quantitative follow-up research is necessary to validate the findings and investigate differences according to gender and socio-economic statuses.

CHAPTER 2

Measuring what audiences seek and find in food media content: The Food Media Content Gratifications Scale Conceptualization, Development, and Validation

Based on research conducted by Teunissen L., Decorte P., Cuykx I. (under review)

ABSTRACT

This article conceptualized, developed, and validated the Food Media Content Gratifications (FMCG) Scale: a quantitative measure to discern what people seek (Gratifications Sought; GS) and find (Gratifications Obtained; GO) in food media content. Five studies comprised exploratory and confirmatory factor analyses, measurement invariance, convergent and discriminant validity, and test-retest reliability. Results showed a reliable and valid seven-factor scale with 32 GS & 32 GO items relating to (1) *entertainment & relaxation*, (2) *social food connections & identity*, (3) *body gazing*, (4) *food porn*, and *information on* (5) *food cultures*, (6) *food & health*, and (7) *cooking convenience*. The FMCG Scale is unique in quantitively discerning GS and GO in food media content, enabling audiences to differentiate between expected and (unintentionally) fulfilled gratifications. This robust research tool helps understand audiences' psychological processes when consuming food media content, a critical part in understanding this media consumption process that impacts food decision-making.

Keywords: Food Media Content, Uses and Gratifications, Scale Development, Scale Validation, Gratifications Sought and Obtained

INTRODUCTION

Food is a core topic in our daily media use (Contois, 2020; Lewis, 2018). Its enduring omnipresence across media and content formats, like recipes in blogs and cookbooks or TV cooking game shows cannot be overlooked (Lofgren, 2013), which is demonstrated in over 200 million Instagram posts bearing *#foodporn* for example (Contois, 2020). Its impact on food, health, and media-related outcomes is also undeniable (Granheim et al., 2021), as many different stakeholders from nutrition, marketing, and media backgrounds demonstrate significant interest in food media content (Van Royen et al., 2022). Studying food media content use – defined broadly transcending media, platform, and content types – can improve comprehension of how this content is embedded in peoples' daily media use and its resulting effects. The current article aims to tackle this by putting forward a scale to measure the motivations driving food media content use, which is necessary to understand people's broader media consumption process (Krcmar & Strizhakova, 2009).

Uses and Gratifications (U&G) is a widely adopted approach in exploring motives for media use (Katz et al., 1973; Krcmar & Strizhakova, 2009; Ruggiero, 2000; Sundar & Limperos, 2013). Previous U&G studies on food media content have either focused on specific media types or platforms (e.g., Ladhari et al., 2019; Park & Goering, 2016) or exclusively utilized qualitative methods (e.g., Ngqangashe et al., 2022). While they offer valuable insights, their limited replicability and generalizability to other food media, platforms, or content types pose challenges toward the increasing convergence and transmedial nature of food media content. Prior research on non-food-related media use also emphasizes a broader perspective on media content gratifications for understanding motivations, beyond specific formats, genres, or media types (Nabi et al., 2006; Krcmar & Strizhakova, 2009). Standardized measures allow better generalizability and cross-media comparisons, unlike specific measures prone to becoming outdated (Meier and Krause, 2022). The current work aims to create and validate a quantitative measure of food media content gratifications using U&G, transcending media types, platforms, and content. This will enhance systematic assessment, comparability, and generalization in food media content gratifications research. Our broad working definition of food media content embraces its transmedial orientation (Hills, 2020) and growing convergence (Lofgren, 2013). Traditional advertising (Belch & Belch, 2021) and health campaigns are excluded, as their content is mostly pushed towards audiences (Brocato, 2010).

Food Media Content Gratifications Sought and Obtained

U&G presupposes that audiences are active in their media selection (Blumler & Katz, 1974). Some researchers argue, however, that there is not always a clear distinction between the prior needs an audience wishes to fulfill through media use, and the (un)expected outcomes achieved from media consumption (Katz et

al., 1973; Palmgreen et al., 1980). Additionally, some argue that media consumption behaviors can be habitual, less intentional, automatic, or nonconscious, without active prior media expectations (e.g., Ruggiero, 2000; Sundar & Limperos, 2013; Vraga et al., 2019). Ngqangashe et al. (2022) found that food media content consumption among adolescents is both incidental and selective, varying based on media or platforms. Examples include watching a cooking show because a family member picked it, or encountering food media content on social media because a friend sent it. This duality of incidental and selective media exposure is evident in high and low-choice media environments like social media, driven simultaneously by user preferences and algorithmic content delivery (Vraga et al., 2019).

Responding to the above concerns, U&G researchers have distinguished between Gratifications Sought (GS) and Obtained (GO) (Palmgreen & Rayburn, 1979; Palmgreen et al., 1980). GS are anticipated gratifications from media use, while GO are the actual outcomes of gratifications gained through media consumption. This perspective assumes a process-oriented path-goal approach, where audiences seek gratifications leading to media exposure. This exposure then results in those gratifications being obtained, or a discrepancy between GO and GS (Palmgreen et al., 1980). On one hand, seeking gratifications from media use, such as gaining nutritional knowledge from cooking shows, can lead to their fulfillment. On the other hand, a GS-GO discrepancy suggests that media motives may not always align with the actual gratifications received (Palmgreen et al., 1980). Gratifications can be obtained incidentally without prior expectations, associated with more passive media consumption (Rokito et al., 2019), while GO can exceed GS, linked to increased media use frequency, adoption, dependency, and satisfaction (Rokito et al., 2019). To summarize, GS and GO are distinct and must be empirically separated in cross-sectional designs to better comprehend people's motivations for consuming food media content and its perceived outcomes (Palmgreen et al., 1985).

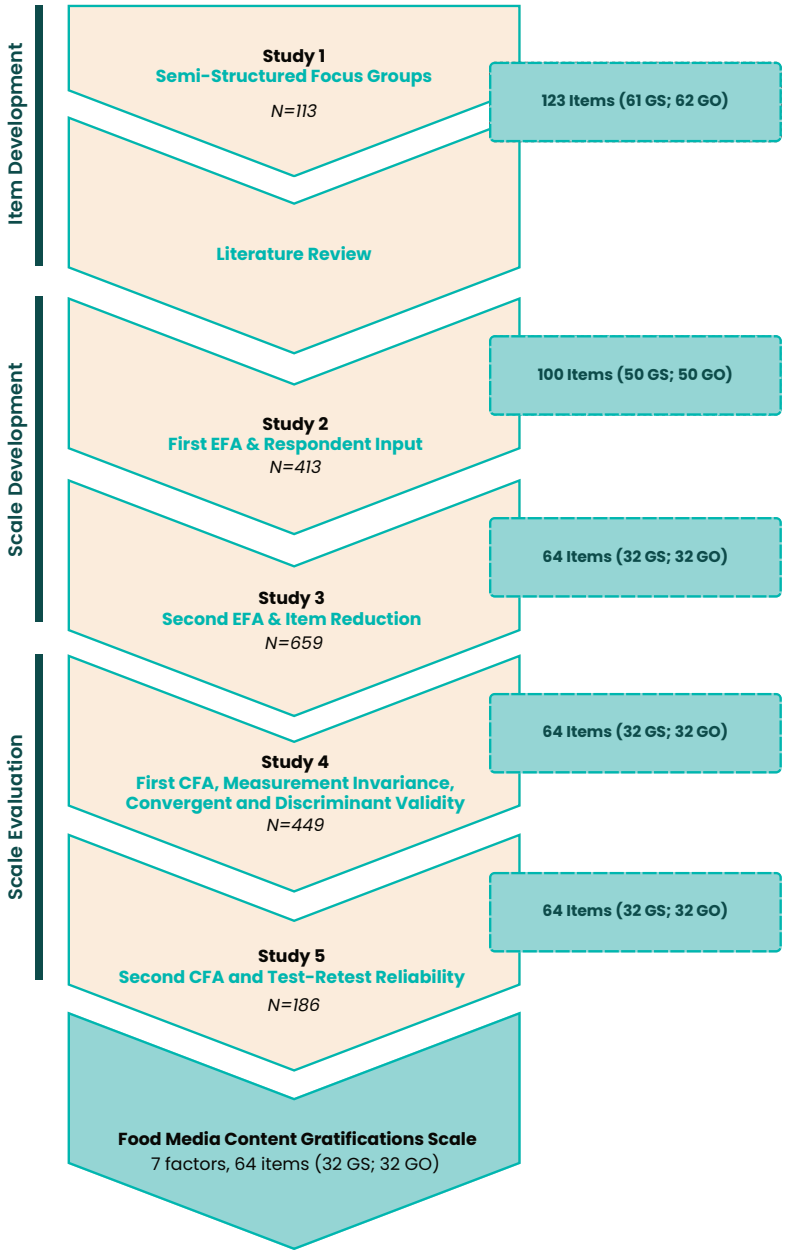
To our knowledge, the GS-GO distinction in media consumption gratifications has not been applied to food media content. Integrating this perspective may enable a nuanced analysis of food media content consumption in both high and low-choice media environments (cf. Vraga et al., 2019), where active selection and passive exposure intertwine, necessitating a GS-GO approach.

Scale Development and Validation Steps

In the current paper, we present the development and validation of the Food Media Content Gratifications (FMCG) Scale to identify and better understand the gratifications people seek and obtain through food media content. We followed three phases in this process: item development, scale development, and scale evaluation (Boateng et al., 2018). Figure 5 outlines the performed studies and summarizes main findings. Ethical approval was granted by the Ethics Committee

for the Social Sciences and Humanities at the University of Antwerp for all the separate studies (Reference Numbers: Study 1: SHW_19_45, Study 2: SHW_20_92, Study 3: SHW_20_90, Study 4: SHW_21_49, and Study 5: SHW_21_50). Additional ethical approval for Study 4 was granted by Saint Mary's University Research Ethics Board (Reference Number: REB 20-096). All supplementary tables and statistical output files are available on OSF: https://bit.ly/3EF4reO.

Figure 5. Scale Development and Validation Process with Main Results



ITEM DEVELOPMENT

Study 1: Focus Group Interviews

Inductive focus group interviews served as an exploratory, audience-centered basis in developing items. Their results provided initial insights toward potential GS and GO from food media content and have been written as standalone analyses (Cuykx, Decorte, et al., 2023; Decorte et al., 2022; Teunissen et al., 2023). Overall, entertainment, education and information, social gratifications, popular food personalities, convenience, food's attractiveness and aesthetic pleasure, and curiosity were perceived as important gratifications in consuming food media content (Cuykx, Decorte, et al., 2023; Decorte et al., 2022; Teunissen et al., 2023).

Literature Review

Next, we consulted U&G literature featuring instruments relating to general media use and food to further inform the scale's first item pool (Supplementary Table A). Items derived from general media use were adapted to the specific context of food media content (e.g., be creative *with food*).

Initial Item Conceptualization

GS and GO adopted identical items, worded differently to fit with a GS ('I want to') and GO ('I could') perspective. U&G researchers contended that "GS and GO may be measured at the same level of abstraction and empirically separated in cross-sectional designs." (Palmgreen & Rayburn, 1985, p. 339). As such, developing a scale with identical items is appropriate and allows for discerning GS-GO discrepancies (cf. Rokito et al., 2019). One hunger-related item was not identical. Previous research has highlighted that food media content can elicit cravings (Harris et al., 2009), even when people are not hungry (Passamonti et al., 2009). Conversely, Pope et al. (2015) refer to 'vicarious gluttony' when people engage with food media content vicariously, not actually undertaking eating behaviors. Accordingly, we added an item "curb my hunger" on the GO side, recognizing that food media content can instill and satisfy hunger.

To assure content validity, this item pool was evaluated for relevance and appropriateness by six senior researchers with long-standing expertise in both U&G and food media content use. This phase resulted in the first list of items, consisting of 61 GS items and 62 GO items (Supplementary Table A).

SCALE DEVELOPMENT

Study 2: First EFA and Respondent Input

Method

Data Collection

An online survey was administered in October 2020. Eligible adults residing in Canada were recruited via Prolific and received C$2.04.

Measures

Food Media Content Gratifications (FMCG) Scale. Towards the participants, we defined food media content as "media messages about food, excluding traditional advertising and health campaigns", emphasizing that they can come across these messages in many ways. Following the prior-mentioned rationale that not all food media content gratifications are sought, we first provided the list of GO ("I could") items, followed by a question asking them how they are exposed to food media content most using a Likert scale (1=*never* to 5=*always*): whether they seek it, it is a habit, someone else sends it to them, and/or they coincidentally/spontaneously come across it (Figure 6). Only respondents who indicated they "seek" food media content regularly (i.e., "frequently" or "always") received the GS item list ("I want to"). The 61 GS and 62 GO items were randomly ordered (Polit, 2014) and answered on a Likert scale (1=strongly disagree to 5=strongly agree). Afterwards, respondents received two open-ended questions where they could indicate if any GS or GO items were missing.

Figure 6. Scale Implementation in Studies 2,3,4, and 5

Statistical Analyses

The 61 GS and 62 GO items underwent separate EFAs to reduce the initial number of items using SPSS 26. We adopted maximum likelihood with a varimax rotation. The Kaiser Criterion (eigenvalues >1) was used to determine the number of factors(Kaiser, 1960), and all items with a factor loading below .5 or cross-loading above .5 were deleted (Howard, 2016). Additionally, all factors with less than three items were excluded (Costello & Osborne, 2005). The EFA results were compared to develop

a similar construct for GS and GO. Next, we analyzed participants' feedback on possible missing categories or items.

Results

Participants

The final sample contained *N*=415 participants aged between 18 and 71 (*M*=26.89, *SD*=9.17), the majority of whom identified as male (64.3%). Additionally, 48.4% had a Bachelor's degree or higher. All respondents filled in their GO from food media content, while *n*=264 completed their GS from it.

Pilot EFA

EFAs were performed separately for GS (*n*=264) and GO (*N*=415). A significant Bartlett's statistic test for GS (c^2=10375.30*, df*=1830, *p<.001)* and GO (c^2=13334,34*, df*=1891, *p<.001),* and Kaiser-Meyer-Olkin (KMO) tests with a value higher than .9 confirmed that performing EFAs was appropriate (Dziuban & Shirkey, 1974; Kaiser, 1970). The factor loadings of 15 GS and 27 GO items were <.5 or cross-loaded >.5 and were deleted (Howard, 2016). The pilot EFA for GS resulted in 45 items across seven factors and for GO in six factors with 32 items.

Differences and Similarities between GS and GO

Six factors showed significant overlap; their items were compared and only items appearing in GS and GO were retained. One factor with items related to cooking information only emerged for GS. However, information/education related to cooking arose as a main finding in Study 1 and was retained due to this practical relevance. One item from this factor was omitted, as it already appeared in another factor relating to information on food and health. The merged results of the pilot EFA from GS and GO delivered a preliminary seven-factor structure (*food connections*, *parasocial food connections*, *entertainment & relaxation*, *food & health knowledge, cooking information*, *food porn*, and *body gazing*) with 33 items.

Open-ended Answers

Five new item categories (*pass time*, *information on cooking convenience*, *diet knowledge*, *information on food cultures*, *food fact-checking*) were added based on the open-ended additions. Additionally, *body gazing* received an extra item based on the open answers: 'fantasize about an ideal body'.

Summary

The pilot EFA results combined with the open-ended answers resulted in twelve factors with 50 items. Supplementary Table B gives an overview of the provisional factors and items.

Study 3: Second EFA and Item Reduction

Method

Data Collection

We administered the resulting scale in a cross-sectional online survey with convenience sampling data collected through a worldwide research project, The Corona Cooking Survey, between November 2020 and January 2021. Like Study 2, we used the data of respondents living in Canada.

Measures

Food Media Content Gratifications (FMCG) Scale. The 50 GS and 50 GO items were measured and implemented in the same way as in Study 2.

Statistical Analyses

In line with Study 2, separate EFAs were conducted for GS and GO. These were performed to identify construct dimensions and ensure item quality for the five new categories derived from respondents' open answers in Study 2. Different from Study 2, the number of factors was determined through parallel analysis to identify a more accurate number of factors and to minimize potential over- or under-identification (Howard, 2016). Data were analyzed in SPSS 26 using the rawpar.sps syntax (O'Connor, 2000). The parallel analysis using permutations of the raw data generated 1000 datasets limited to the 95th percentile for common factor analysis. Only factors whose eigenvalues are greater than those from the random data are retained. Nearly all factors in Study 2 were slightly correlated (Supplementary Table C). Therefore, we now used an oblique rotation method, promax, which provides greater accuracy in approximating the structure of the model (Bowman & Goodboy, 2020; Fabrigar et al., 1999). All items with a factor loading below .5 were deleted (Howard, 2016).

Next, the EFA results were compared to develop a similar construct for GS and GO. Furthermore, the items were evaluated to ensure only functional items were retained and to optimize scale length (Boateng et al., 2018; Carpenter, 2018). Inter-item correlations were calculated for each factor with more than three items, aiming for values between .3-.7 to confirm the items measured the same construct, but were sufficiently distinct (Boateng et al., 2018). When two or more items scored high (>.7), the item with the highest mean and factor loading was retained. Finally, we analyzed Cronbach's α and McDonald's ω internal consistency.

Results

Participants

In total, *N*=659 eligible respondents, overrepresented by women (65.3%) and higher-educated people (52.6%), with a mean age of 30.77 (*SD*=13.18), participated. Regarding encountering food media content, *n*=239 (36.7%) indicated they "frequently" or "always" sought it actively and completed GS items.

Parallel Analysis

Parallel analyses results showed two different factor structures: one with five factors for GS, and eight for GO. We considered the latter to represent the scale structure best, as the entire sample completed GO (*N*=659). This also adds nuance to the scale, capturing more specific gratifications.

EFA

Based on a significant Bartlett's test for GS (c^2=8839.55*, df*=1225, *p<.001)* and GO (c^2=19707.71*, df*=1225, *p<.001)*, and both Kaiser-Meyer-Olkin (KMO) tests with a value >.9, the data proved suitable to perform an EFA. Items with a factor loading <.5, including eight for GS and nine for GO, were deleted. The GS EFA resulted in an eight-factor structure with 42 items, for GO in a seven-factor structure with 41 items.

Differences and Similarities between GS and GO

Six factors from the GS and GO EFA showed similarities and were merged into the GS-GO 38-item structure: (1) social food connections & identity, (2) entertainment & relaxation, information on (3) food & health, (4) food cultures, (5) and cooking convenience, and (6) body gazing. Two factors showed no similarity. One GS-only factor with two items was excluded given the minimum of three items per dimension (Carpenter, 2018). A GO-only factor contained three items regarding food porn. As food porn is a relevant theoretical concept(see literature overview) and had good internal consistency for GS (Cronbach's α .83; McDonald's ω .84) and GO (Cronbach's α & McDonald's ω: .79), we decided to include it as a factor.

Item Reduction

Four factors (*social food connections & identity*, *entertainment & relaxation*, *information on food & health*, and *information on cooking convenience*) had more than three items and were evaluated through inter-item correlations. Within *information on food and health*, four items scored high (>.7) among GS, of which two items with the highest mean and factor loading were kept. *Social food connections & identity* showed four highly correlating items among GS and GO, of which two were retained. For *entertainment and relaxation*, two items correlated highly for

GS and one was retained. Finally, *information on cooking convenience* had no problematic inter-item correlations and all items were retained.

Summary

This study resulted in a seven-factor structure: (1) entertainment & relaxation, (2) social food connections & identity, (3) body gazing, (4) food porn, information on (5) food cultures, (6) food & health, and (7) cooking convenience with 32 items (Table 4), all presenting good internal consistency for GS (Cronbach's α & McDonald's ω: .83-.91) and GO (Cronbach's α & McDonald's ω: .79-.88).

Table 4. FMCG Scale Constructs and Items

Subscale	**Items**
Entertainment & Relaxation	have fun
	pass time
	switch off my brain
	relax
	enjoy myself
Social Food Connections & Identity	interact with others
	attract attention to what I share
	share content myself
	feel good about groups I belong to
	show that I am a foodie/food person
	seek support
	show off my own food talent/knowledge
Body Gazing	compare my body to that of others
	fantasize about an ideal body
	watch people's bodies
Food Porn	fantasize about food
	gaze at appetizing food
	watch food while being hungry
Information on Food Cultures	learn about foreign foods
	find recipes from other cultures
	learn about other food cultures

Table 4. FMCG Scale Constructs and Items (continued)

Subscale	Items
Information on Food & Health	learn about diet(s)
	learn how to improve my health
	review and evaluate my diet habits
	learn about food and health
	make plans on how to change my diet
	fact check/verify food information
	find the truth about food
Information on Cooking Convenience	find quick & easy recipes
	find quick & easy inspiration
	look for useful recipes
	find quick & easy tricks to prepare food

Note. Gratifications Sought: "I actively seek out food media content because I want to…"; Gratifications Obtained: "When I consume food media content I get pleased/gratified because I can…"

SCALE EVALUATION

Study 4: First CFA, Measurement Invariance, and Convergent and Discriminant Validity

Convergent and Discriminant Validity Background

Convergent Validity

Food media content gratifications may transcend towards more general media use gratifications, as previous research has highlighted a considerable overlap between gratifications for specific and general media use (Sundar & Limperos, 2013). For example, an individual may consume food media content on social network sites (SNS) for entertainment and have similar gratifications for using SNS more generally. Sundar and Limperos (2013) suggest that there are some core gratifications for media use: entertainment, social, and information gratifications. Therefore, we expect these gratifications for using SNS (Bae, 2018) to positively correlate with the respective FMCG factors *entertainment & relaxation*, *social food connections & ident*ity, and *information on food cultures, on food & health,* and *on cooking convenience*.

Not all FMCG factors overlap with general gratifications for media use, like *food porn* and *body gazing*, which can be specific to food media content (Sundar & Limperos, 2013). For *body gazing*, prior research has proposed that media use can increase media appearance ideals internalization (Jung et al., 2022). Furthermore, appearance motivations for social media use are strongly associated with higher internalization of these ideals (Rodgers et al., 2021). Therefore, we hypothesize that food media content body gazing gratifications will correlate with higher internalization of media appearance ideals.

Additionally, mukbangs – consuming large quantities of food while live-streaming – can be considered forms of *food porn* due to the food's inaccessibility to the viewer and its more sexual and voyeuristic presentations (Donnar, 2017). Previous research has shown that people especially view mukbang videos for eating or hunger-related motivations (Kircaburun et al., 2021). We thus expect that the FMCG factor *food porn* will correlate with hunger-related motivations to watch mukbang videos.

Discriminant Validity

We considered measures assessing food motivations without the media component (e.g., food choice questionnaires) to be conceptually different and thus uncorrelated with the FMCG Scale.

Method

Data Collection

We distributed a survey through Prolific and MTurk among Canadian residents, as well as through e-mail to students from Saint Mary's University in Halifax, Canada. Participants received C$3.34 (Prolific) or C$3.25 (MTurk).

Measures

Food Media Content Gratifications (FMCG) Scale. The FMCG Scale consisted of 32 GS and 32 GO items loading on one of the seven subscales derived from Study 3 were measured and implemented in the same way as explained in Study 2.

Convergent Validity. The entertainment (α_{GS}=.887; α_{GO}=.941), socialization (α_{GS}=.800; α_{GO}=.893), and information (α_{GS}=.855; α_{GO}=.876) GS and GO factors by Bae (2018) were used to establish convergent validity for the FMCG subscales *entertainment & relaxation* (α_{GS}=.903; α_{GO}=.821), *social food connections & identity* (α_{GS}=.923; α_{GO}=.883), and *information on food cultures* (α_{GS}=.911; α_{GO}=.890), *food & health* (α_{GS}=.895; α_{GO}=.872), and *cooking convenience* (α_{GS}=.822 ; α_{GO}=.841). All items were answered on a Likert scale (1=*definitely false* to 7=*definitely true*). For *body gazing* (α_{GS}=.922; α_{GO}=.882), we used the Internalization-General subscale of the SATAQ-3 (Thompson

et al., 2004)(α=.965). The items were answered on a Likert scale (1=*totally disagree* to 5=*totally agree*). For *food porn* (α_{GS}=.867; α_{GO}=.783), we used the feelings of hunger when watching mukbang scale (α=.772) by Anjani et al. (2020). The items were answered on a Likert scale (1=*totally disagree* to 5=*totally agree*).

Discriminant Validity. We compared each FMCG construct with existing scales related to eating behavior, namely the single-item FCQ (Onwezen et al., 2019) and the short DEBQ ($\alpha_{\text{emotional eating}}$=.943; $\alpha_{\text{restrained eating}}$=.656; $\alpha_{\text{external eating}}$=.794) (Bailly et al., 2012).

Statistical Analyses

We analyzed the sociodemographic sample composition using SPSS 28, all other analyses were carried out using MPlus 8.

For the CFA, we adopted a robust maximum likelihood estimation method, as our data was not normally distributed (cf. Bowman & Goodboy, 2020) and applied model fit thresholds (Bandalos & Finney, 2018). There was no missing data in this analysis. We analyzed McDonald's ω reliability as well.

Measurement invariance was examined by conducting multiple group CFAs across gender (i.e., men and women) and age (i.e., 18-25-year-olds and those 26 or older). First, the FMCG factor structure was tested in each group separately for GS and GO. Next, three CFA models were compared to provide evidence for configural, metric, and scalar invariance for each group within GS and GO (Hair et al., 2018; Van De Schoot et al., 2012). The χ^2 and AIC of the previous model were compared to those of the following model. A non-significant change in χ^2 and a lower AIC value were considered evidence for the tested measurement invariance.

Convergent validity was evaluated in two ways. First, we analyzed whether the indicators of a specific FMCG subconstruct converge or share a high proportion of common variance (Hair et al., 2018). We calculated the average variance explained (AVE) values and composite reliability (CR) across all items associated with a particular factor of the FMCG Scale. Convergent validity was confirmed if AVE was greater than .5, CR was larger than .7, and the CR value exceeded the corresponding AVE value (Hair et al., 2018). Second, we assessed the degree to which conceptually similar measures correlate with the FMCG Scale. We considered correlation coefficients between .1- .3 to be small, .3-.5 to be medium, and .5 or greater to be large (Cohen, 1988).

Discriminant validity was also assessed in two ways. First, we evaluated the extent to which different FMCG factors were truly distinct from each other (Hair et al., 2018). Discriminant validity was proven if the AVE for each factor exceeded its squared

correlation with all other factors (Fornell & Larcker, 1981). Second, we assessed whether FMCG constructs differ sufficiently from conceptually different constructs (Campbell & Fiske, 1959), meaning that the correlation may not be significantly larger than .7 (Cheung & Wang, 2017).

Results

Participants

Our sample consisted of *N*=449 respondents with a mean age of 33.3 (*SD*=10.9). Within the sample, 56.3% were women, and most (50.3%) had earned a Bachelor's degree. All respondents filled in their GO from food media content, while *n*=241 completed their GS from it.

CFA

For GO, the CFA indicated good model fit according to $\chi^2(443)=898.607$, $p<.001$, CFI=.929, TLI=.921, RMSEA=.048 (90% CI=.043, .052), SRMR=.056. For GS, the CFA also demonstrated good model fit ($\chi^2(443)=765.876$, $p<.001$, CFI=.929, TLI=.920, RMSEA=.055 (90% CI=.048, .061), SRMR=.063). The standardized factor loadings of GO (between .519 and .890) and GS (between .592 and .939), provided evidence for internal structure. Correlation residuals were minimal , indicating good local fit, with a few exceptions (26 of 528 [4.92%] GO $r>.10$; 54 of 528 [10.23%] GS $r>.10$; 1 of 528 [.19%] GS $r>.20$). McDonald's ω reliability results for GO factors varied between .787 and .892, for GS factors between .826 and .925, indicating adequate reliability.

Measurement Invariance

The FMCG seven-factor structure showed a good model fit for GO and GS when tested separately among men, women, and those older than 26 (Supplementary Table D). For 18–25-year-olds, the GO model fit was adequate but for GS, the results were less favorable, likely due to small sample size (*n*=58). The χ^2- difference tests were non-significant for models 1 and 2 (GS: $\Delta\chi^2(25)=13.76$, $p=.97$; GO: $\Delta\chi^2(25)=28.88$, $p=.27$), and models 2 and 3 (GS: $\Delta\chi^2(32)=23.16$, $p=.87$; GO: $\Delta\chi^2(32)=29.95$ $p=.57$) for GS and GO and across age, indicating configural, metric, and scalar invariance. For gender, the χ^2- difference tests were non-significant ($p>.05$) for models 1 and 2 (GS: $\Delta\chi^2(25)=27.13$, $p=.35$; GO: $\Delta\chi^2(25)=23.72$, $p=.54$), but significant for models 2 and 3 (GS: $\Delta\chi^2(32)=66.91$, $p<.001$; GO: $\Delta\chi^2(32)=59.43$, $p<.05$) for GS and GO, supporting configural and metric invariance.

Convergent Validity

AVE values for GS and GO factors were all greater than .5, except for one GO factor: *entertainment & relaxation* (.48). However, the CR values for all GS and GO factors are above .70, and therefore the GO factor *entertainment & relaxation* is retained. Additionally, all CR values of the GS and GO variables exceeded the AVE values,

confirming convergent validity (Table 5). Convergent validity was also assessed by calculating the correlations between the FMCG factors and other related constructs (Table 6). For GS, five of seven factors were significantly correlated with another measure. *Information on food cultures* and *on cooking convenience* were not significantly correlated. Of the significant correlations between GS and other constructs, four factors were considered small (.1-.3), and four large (>.5). The GO factors and other scales were all significantly correlated. One factor was considered small (.1-.3), four medium (.3-.5), and one large (>.5). These results support convergent validity for GS and GO.

Discriminant Validity

Discriminant validity was supported for GS and GO, as the AVE for each FMCG construct exceeded the squared correlation between constructs (Table 5). For discriminant validity between the FMCG Scale and other constructs (Table 6), most correlations between FMGC factors (GS and GO) and the FCQ or the DEBQ were non-significant. Moreover, the significant correlations for GS and GO were small to medium (between .1-.5), indicating discriminant validity.

Table 5. Study 4 CR, AVE, and Squared Construct Correlations

Gratifications Sought (N=241)	**CR**	**AVE**	**Squared Construct Correlations**					
			1	2	3	4	5	6
1. Entertainment & Relaxation	.90	.65						
2. Social Food Connections & Identity	.93	.64	.24					
3. Body Gazing	.93	.80	.05	.46				
4. Food Porn	.87	.69	.45	.28	.18			
5. Information on Food Cultures	.91	.78	.25	.04	.00	.10		
6. Information on Food & Health	.90	.57	.05	.17	.27	.12	.06	
7. Information on Cooking Convenience	.83	.54	.06	.01	.00	.01	.14	.07
Gratifications Obtained (N=449)								
1. Entertainment & Relaxation	.82	.48	/					
2. Social Food Connections & Identity	.88	.52	.32	/				
3. Body Gazing	.89	.72	.05	.31	/			
4. Food Porn	.79	.55	.42	.26	.20	/		
5. Information on Food Cultures	.89	.73	.36	.08	.01	.26	/	
6. Information on Food & Health	.87	.50	.20	.21	.27	.22	.18	/
7. Information on Cooking Convenience	.84	.57	.32	.04	.00	.18	.36	.18

Table 6. Study 4 Convergent & Discriminant Validity Correlations with Other Constructs – Standardized Estimate (Standard Error), p-value

	Other Constructs	GS/GO	Entertainment & Relaxation	Social Food Connections & Identity	Body Gazing	Food Porn	Information on Food Cultures	Information on Food & Health	Information on Cooking Convenience
Convergent Validity									
(Bae, 2018)	Entertainment	GS	$n_{missing}$ GS=13, GO=25 .27 (.07)***						
		GO	.47 (.04)***						
	Socialization	GS		$n_{missing}$ GS=13, GO=25 .6 (.05)***					
		GO		.41 (.05)***					
	Information	GS					$n_{missing}$=25 .08 (.08), .29	$n_{missing}$ GS=13, GO=25 .18 (.07)**	$n_{missing}$ GS=13, GO=25 .14 (.08),.07
		GO					.29 (.05)***	.33 (.05)***	.36 (.05)***
(Thompson et al., 2004)	Internalization-General	GS			$n_{missing}$=0 .55 (.05)***				
		GO			.6 (.03)***				
(Anjani et al., 2020)	Hunger	GS				$n_{missing}$ GS=160, GO=341 .51 (.11)***			
		GO				.52 (.09)***			

Table 6. Study 4 Convergent & Discriminant Validity Correlations with Other Constructs – Standardized Estimate (Standard Error), p-value (continued)

	Other Constructs	GS/GO	Entertainment & Relaxation	Social Food Connections & Identity	Body Gazing	Food Porn	Information on Food Cultures	Information on Food & Health	Information on Cooking Convenience
Discriminant Validity $n_{missing}$=0									
FCQ (Onwezen et al., 2019)	Healthy	GS	-.16 (.08), .05	.05 (.08), .57	-.06 (.08), .43	-.17 (.08)*	.13 (.08), .12	.19 (.08)*	.12 (.08), .17
		GO	-.05 (.08), .58	-.02 (.08), .85	-.21 (.07)***	-.07 (.09), .47	.21 (.08)**	.19 (.08)*	.04 (.09), .63
	Mood	GS	.15 (.07)*	.33 (.07)***	.30 (.07)***	.29 (.07)***	.06 (.07), .45	.21 (.07)***	-.12 (.08), .11
		GO	.15 (.07), .05	.36 (.07)***	.31 (.06)***	.29 (.08)***	.01 (.07), .88	.19 (.07)**	-.19 (.07)**
	Convenient	GS	-.08 (.07), .29	-.05 (.07), .48	-.10 (.07), .12	-.10 (.07), .14	.03 (.07), .64	.11 (.07), .11	.07 (.07), .38
		GO	-.09 (.07), .2	-.07 (.07), .27	-.15 (.06)*	-.07 (.08), .40	.00 (.07), .99	.10 (.07), .16	.00 (.07), .97
	Pleasurable	GS	.23 (.06)***	.06 (.06), .39	-.07 (.06), .27	.12 (.06), .06	.26 (.06)***	-.10 (.06), .10	.13 (.07), .05
		GO	.35 (.06)***	.07 (.06), .25	.02 (.06), .70	.05 (.07), .50	.22 (.06)***	-.09 (.06), .14	.19 (.07)***
	Natural	GS	.14 (.09), .13	.14 (.09), .13	-.00 (.09), .98	.13 (.09), .15	.04 (.09), .66	-.14 (.09), .11	-.18 (.09), .06
		GO	.02 (.09), .8	.16 (.09), .07	.00 (.08), .97	.03 (.10), .74	-.01 (.09), .89	-.14 (.09), .11	-.14 (.09), .12
	Affordable	GS	.02 (.07), .83	-.09 (.07), .17	-.11 (.07), .10	.00 (.07), .98	.14 (.07), .05	.05 (.07), .45	.14 (.07), .05
		GO	.05 (.07), .45	-.12 (.07), .06	-.12 (.06)*	.01 (.08), .95	.17 (.07)**	.12 (.07), .08	.26 (.07)***
	Weight Control	GS	.04 (.09), .65	.13 (.09), .14	.30 (.08)***	-.05 (.09), .59	-.08 (.09), .38	.22 (.07)**	.07 (.09), .47
		GO	.12 (.09), .16	.12 (.08), .16	.37 (.07)***	-.08 (.10), .42	-.12 (.09), .16	.15 (.09), .09	-.01 (.09), .92

Table 6. Study 4 Convergent & Discriminant Validity Correlations with Other Constructs – Standardized Estimate (Standard Error), p-value (continued)

	Other Constructs	GS/GO	Entertainment & Relaxation	Social Food Connections & Identity	Body Gazing	Food Porn	Information on Food Cultures	Information on Food & Health	Information on Cooking Convenience
	Familiar	GS	-.01 (.07), .93	.07 (.07), .28	.22 (.06)***	.11 (.07), .11	-.21 (.07)***	.08 (.07), .25	-.09 (.07), .21
		GO	-.08 (.07), .24	.12 (.07), .08	.16 (.06)**	.06 (.08), .46	-.20 (.07)***	.03 (.07), .65	-.07 (.07), .30
	Environment	GS	-.1 (.09), .3	-.01 (.09), .93	.07 (.09), .46	.01 (.09), .94	-.03 (.10), .75	.10 (.09), .27	.08 (.10), .40
		GO	.04 (.1), .66	.12 (.09), .19	.15 (.08), .07	.05 (.10), .66	-.05 (.10), .62	.17 (.09), .06	.14 (.10), .13
	Animal Friendly	GS	.05 (.09), .57	-.03 (.09), .7	-.06 (.08), .47	.07 (.09), .45	-.07 (.09), .39	.03 (.07), .73	-.02 (.09), .80
		GO	-.19 (.09)*	-.14 (.08), .09	-.05 (.08), .49	.00 (.10), .98	-.09 (.09), .30	-.06 (.09), .5	-.28 (.08)***
	Fairly Traded	GS	.1 (.09), .27	.15 (.09), .09	.02 (.09), .78	-.12 (.09), .18	.14 (.09), .12	-.04 (.09), .68	-.13 (.09), .18
		GO	.13 (.09), .16	.08 (.09), .35	-.10 (.08), .19	-.07 (.10), .49	.07 (.09), .43	-.07 (.09), .42	.13 (.09), .17
DEBQ (Bailly et al., 2012)	Restrained	GS	-.02 (.09), .79	-.07 (.09), .42	.08 (.09), .40	.08 (.09), .41	-.05 (.09), .59	.21 (.09)*4	.02 (.10), .84
		GO	-.24 (.09)**	-.18 (.09)*	.04 (.09), .62	.04 (.10), .73	.03 (.09), .79	.21 (.09)*	.05 (.10), .63
	External	GS	.14 (.07), .05	.09 (.07), .22	.16 (.07)*	.34 (.07)***	.09 (.07), .21	.21 (.07)***	.22 (.07)***
		GO	.08 (.07), .3	.18 (.07)**	.20 (.06)***	.33 (.08)***	.15 (.07)*	.28 (.07)***	.25 (.07)***
	Emotional	GS	.07 (.07), .35	-.02 (.07), .81	.07 (.07), .27	.13 (.07), .07	.06 (.07), .37	.20 (.07)**	.18 (.07)**
		GO	.08 (.07), .28	.04 (.07), .6	.11 (.06), .10	.15 (.08), .05	.11 (.07), .12	.24 (.07)***	.20 (.07)***

Note. nGS=241, NGO=449, ***p<.001, ** p<.01, *p<.05

Study 5: Second CFA and Test-Retest Reliability

Method

Data Collection

To examine the FMCG Scale's reliability at different times, we conducted a test-retest through a two-part study with a two-week interval (Polit, 2014). Canadian residents were recruited via Prolific, completed two questionnaires during July-August 2021, and were rewarded with C$6.48. To avoid frustration for the second part, respondents were told there were technical problems with the first.

Measures

Food Media Content Gratifications (FMCG) Scale. The 32 GS and 32 GO items were assessed in the same way as previous studies in this article.

Statistical Analyses

To further confirm our proposed factor structure, we conducted a second CFA in the same way as in Study 4. Additionally, test-retest reliability was analyzed using single measurement, absolute agreement, two-way mixed intraclass coefficients (Berchtold, 2016; Koo & Li, 2016). Intraclass coefficients between .5 and .75 indicate moderate reliability, values exceeding .75 indicate good to excellent reliability (Koo & Li, 2016). Additionally, internal consistency was assessed via Cronbach's α and McDonald's ω.

Results

Participants

The first part of the test-retest consisted of *N*=220 participants, the second part of *N*=204 . The analyses only included participants who completed both parts (*n*=199). Participants whose responses to sociodemographic questions did not match across both surveys were omitted (*n*=13). The final sample consisted of *N*=186 with a mean age of 32.52 (*SD*=10.43). The majority of the sample were men (55.4%) and obtained higher education (67.3%). All respondents filled in their GO from food media content, while *n*=40 completed their GS.

CFA

The CFA data for both GO test ($\chi 2$ (443)=659.39, p<.001; *RMSEA*=.05, *CFI*=.91, *TLI*=.90, *SRMR*=.06) and retest ($\chi 2$ (443)=702.59, p<.001; *RMSEA*=.06, *CFI*=.91, *TLI*=.90, *SRMR*=.07) indicated good model fit . For GS, however, the CFA results suggested poor model fit (Test GS: $\chi 2$ (443)=1218.15, p<.001; *RMSEA*=.21, *CFI*=.45, *TLI*=.38, *SRMR*=.13; Retest GS: $\chi 2$ (443)=1221.83, p<.001; *RMSEA*=.21, *CFI*=.56, *TLI*=.51, *SRMR*=.11), most likely due to the small sample size (GS *n*=40). Concerning standardized factor loadings providing evidence

for internal structure, the test and retest GO items scored between .505-.933, except for the *entertainment and relaxation* GO test item 'switch off my brain' with .399. GS test and retest items were between .508-.985, except the GS test *information on food cultures* item 'learn about foreign foods' with .348 and the GS retest *information on food and health* items 'make plans on how to change my diet' and 'find the truth about food', with .4 and .422 respectively. For both test and retest GO items, the correlation results were minimal, indicating good local fit. For test and retest GS, higher correlation residuals were more prevalent, indicating poorer local fit.

Test-Retest Reliability

The test-retest results show (Table 7) intraclass coefficients between .46-.88 for GS and between .54-.73 for GO, indicating moderate to good reliability over time for GS and GO factors.

Internal consistency

The McDonald's ω and Cronbach's α results (Table 7) for GS test (both .67-.94) and retest (both .79-.99) factors were good except McDonald's ω for one item (*information on food cultures*, *w* =.57). For GO the test (both .62-.90) and retest (both .79-.89) factors showed good internal consistency.

Table 7. Study 5 Test-Retest Reliability & Internal Reliability

Gratifications Sought (N=40)	**Cronbach's α**		**McDonald's ω**		**Test-Retest Reliability**	
	T1	**T2**	**T1**	**T2**	**ICC**	**95% CI**
Entertainment & Relaxation	.90	.88	.89	.91	.88	.79-.94
Social Food Connections & Identity	.90	.94	.90	.95	.72	.53-.84
Body Gazing	.91	.97	.95	.99	.64	.41-.79
Food Porn	.87	.86	.87	.89	.80	.65-.89
Information on Food Cultures	.67	.82	.57	.83	.46	.18-.69
Information on Food & Health	.89	.80	.89	.80	.48	.20-.69
Information on Cooking Convenience	.85	.86	.87	.89	.78	.62-.88
Gratifications Obtained (N=186)						
Entertainment & Relaxation	.73	.85	.62	.86	.59	.49-.68
Social Food Connections & Identity	.84	.88	.80	.88	.73	.66-.79
Body Gazing	.89	.89	.85	.89	.60	.50-.68

Table 7. Study 5 Test-Retest Reliability & Internal Reliability (continued)

Gratifications Obtained (N=186)	**Cronbach's α**		**McDonald's ω**		**Test-Retest Reliability**	
	T1	**T2**	**T1**	**T2**	**ICC**	**95% CI**
Food Porn	.77	.79	.67	.80	.71	.61-.78
Information on Food Cultures	.88	.87	.82	.87	.54	.44-.64
Information on Food & Health	.86	.88	.80	.88	.64	.55-.72
Information on Cooking Convenience	.90	.88	.86	.89	.59	.49-.68

DISCUSSION

The current work outlines the conceptualization, development, and validation of the FMCG Scale in its approach to measure what people seek (GS) and/or find (GO) in food media content. Results across five studies, delivered a valid and reliable seven-factor scale solution with 32 GS items & 32 GO items relating to (1) *entertainment & relaxation*, (2) *social food connections & identity*, (3) *body gazing*, (4) *food porn*, and *information on* (5) *food cultures*, (6) *food & health*, and (7) *cooking convenience*.

The factors emerging in the current FMCG scale delineate gratifications that are general and familiar from previous U&G research on one hand, and specific to the context of food media content on the other. Entertainment, social interaction, and information-seeking are examples of gratifications that have been found across time and media types (Sundar & Limperos, 2013), and are reflected in our factors *entertainment & relaxation, social food connections & identity*, and *information* on *food cultures*, *food & health*, and *cooking convenience*. This reflects the omnipresence of food media content in the media landscape (Lewis, 2018): it has become a daily source of entertainment, social connection, and information for media users. At the same time, the focus of the information gratifications, as well as *body gazing* and *food porn*, highlights the important nuances food brings to existing and new media gratifications. As such, our study contribute that new gratifications also arise from this specific food topic. In sum, the FMCG scale reinforces some widely established media gratifications, but also adds new ones specific to food that, considering its omnipresence in media (Leer & Povlsen, 2016; Lewis, 2018), are relevant to consider in people's daily media consumption process and psychology.

Limitations and Future Research

The design of our studies entailed some limitations. First, we relied on convenience sampling of people likely interested in food media content and exclusively included participants residing in Canada to focus on English-speaking participants.

Future studies should collect more diverse samples regarding socio-economic backgrounds, nationalities, and languages, to enhance the validation of the scale and investigate individual differences pertaining to food media content gratifications. Lastly, this work did not consider nomological or criterion validity, such as predictive validity, which remains to be conducted in the future. For example, whether the FMCG Scale can predict satisfaction with or continuance intention of the food media content shown, as adopted in Bae for social network sites (2018).

Prior research has warned against self-report measures in U&G research (Krcmar & Strizhakova, 2009). However, understanding media choices from a U&G perspective offers insight into how and why people are motivated to make the decisions they do, which are both crucial elements to conceptually and holistically capture the totality of the media consumption process (Nabi et al., 2006). We argue that gratifications are key to consider, but also recognize value in other perspectives and approaches that can go beyond self-report of media experiences in future research of food media content. Departing from what audiences themselves believe to characterize their food media consumption allows for research that is more user-centered.

We acknowledge that our current conceptualization of GS may be restricted to specific food media content-seeking decisions. GS can take on different forms of media choices (e.g., clicking a forwarded link, opening a media platform knowing food media content might be encountered without particularly seeking it). Perhaps in future research, the GS question can be formulated differently to include alternative decision-making scenarios (e.g., Why do you *continue* viewing food media content?).

The transmediality and convergence (Hills, 2020; Lofgren, 2013) of food media content encouraged us to develop a scale that could be applied across media types, platforms, and content types. However, we welcome future research to consider our scale applied to particular food media content contexts as well, to further understand gratifications linked to specific food-related content, media types, or platforms (Sundar & Limperos, 2013). This may reveal new gratifications based on media-specific affordances such as navigability, interactivity, and modality (Sundar & Limperos, 2013). Additionally, future research could include media personalities in food media content, as media personalities can evoke gratifications for the viewer (Rubin & McHugh, 1987; Sokolova & Perez, 2021), which has been demonstrated in food media content as well (Decorte et al., 2022; Ngqangashe et al., 2022). In general, we welcome future research to utilize our proposed scale among more nuanced food media content contexts, types, and people, to uncover how it might be applicable and how gratifications may differ as well.

Implications

We believe that the FMCG scale as a novel measure to assess food media content gratifications will be useful for both academics and practitioners (e.g., marketers and/or health workers) interested in how people interact with mediated food, which has been shown to impact their food-related decision making (Granheim et al., 2021; Pope et al., 2015).

Adopting a GS-GO conceptualization (Palmgreen et al., 1980) allows us to assess the gap between GS and GO, showing which gratifications are under- or overgratified, which has been linked to recurrent use and satisfaction of media (Rokito et al., 2019). In the context of food media content, this can identify ways in which food media content can improve to keep audiences engaged.

By adopting this distinction, we also address concerns that U&G research often does not distinguish between what is expected and obtained from media (Katz et al., 1973; Palmgreen et al., 1980). Additionally, in response to U&G concerns about how active people consume media, our work considers that media use can be varyingly active, ranging from intentionally searching food media content to consuming it through spontaneous encounters. Therefore, the scale can assess gratifications that are consciously planned or obtained unplanned with the same instrument. This is a critical evolution, since a significant portion of media use relies on habits or other less intentional media behavior (Ruggiero, 2000; Sundar & Limperos, 2013; Vraga et al., 2019). The FMCG Scale reflects a more realistic representation of current media use and gratifications, in a media landscape where food media content is omnipresent (e.g., Kirkwood, 2018).

As a conceptual contribution, the FMCG Scale is the first to quantitively apply gratifications specifically to food media content broadly. Until now, U&G studies of food media content have been mainly qualitative (e.g., Ngqangashe et al., 2022) or focused on one specific medium or platform (e.g., Ladhari et al., 2019; Park & Goering, 2016) The FMCG Scale transcends media, platforms, and content types and thus allows future work to systematically assess these motivations and increase comparability and generalization of food media content gratification research.

CHAPTER 3

Food Media Content Gratifications among Emerging Adults

Based on research conducted by L. Teunissen and P. Decorte

ABSTRACT

The current chapter will explore the food media content gratifications specific to emerging adults, building upon the foundation laid in the preceding chapter, where we developed and validated the FMCG scale as a valuable tool for assessing these gratifications. This chapter serves as a brief report summarizing the results of three cross-sectional surveys, offering insights into emerging adults' food media content use and reflecting on the significance of these findings in understanding their food media consumption behaviors more precisely.

Keywords: Food Media Content, Uses and Gratifications, Gratifications Sought and Obtained, Gratification Discrepancy, Emerging Adults

INTRODUCTION

Understanding food media content use can deliver useful insights for marketers and health promotors in creating content that effectively targets and impacts their audiences. Media motivations are a key element to consider in understanding the larger process of media use (Krcmar & Strizhakova , 2009; Nabi et al., 2006). Uses and Gratifications (U&G) research posits that these media choices are determined by individuals' specific needs, values, and beliefs, influenced by individual and contextual factors (Katz et al., 1973; Palmgreen et al., 1985).

Within this framework, emerging adulthood has been recognized as a distinct demographic with its own needs, which can lead to distinct media gratifications (Coyne et al., 2013, 2016). Research by Coyne et al. (2016) demonstrated that emerging adults utilize media out of certain key needs specific to their developmental stage, such as autonomy, identity, and intimacy needs. Applying this understanding to food media content, it is likely that emerging adults have their own distinct needs and gratifications when engaging with food-related media content as well. Just as they seek specific media to fulfill autonomy, intimacy, and identity needs, they may also seek food media content that satisfies their desires for culinary exploration, personal autonomy in dietary choices, or the expression of their food-related identities, for instance. Moreover, they may use food media content as a way to connect with others, explore new cuisines, or even engage in culinary creativity. Given the existing distinct patterns of emerging adult media gratifications, it is likely that emerging adults will score differently on the FMCG scale we presented in the previous chapter compared to the general results that do not discern age groups.

Furthermore, it is essential to acknowledge that male and female emerging adults may exhibit distinct motivations when engaging with food media content. Existing research has consistently identified gender differences in individuals' motivations for participating in various media-related activities (e.g., Chen et al., 2015; Croes & Bartels, 2021; Paul & Shim, 2008). For example, Croes & Bartels (2021) discovered that female and male emerging adults are driven by different factors when following influencers, indicating a need for a nuanced understanding of their media preferences. Furthermore, prior studies have shed light on gender disparities in various food-related behaviors. Women tend to demonstrate higher levels of competence in food preparation, nutrition knowledge, and food safety practices compared to men (e.g., Taillie, 2018; Abbot et al., 2009; Yahia et al., 2016). When considering these findings in the context of food media content gratifications, it becomes apparent that male and female emerging adults may have divergent gratification patterns, making it crucial to delve into this area further for a comprehensive understanding.

When exploring people's engagement with food media content, it is also crucial to differentiate between their expectations and actual experiences. Often, what initially draws individuals to food media may not align with what they ultimately encounter (Palmgreen & Rayburn, 1979). Rokito et al. (2019), extending the work by Palmgreen and Rayburn (1979), highlight the importance of examining how different aspects of food media fulfill, under-fulfill, or exceed people's sought-after experiences. This discrepancy between expectations and reality will be analyzed for each factor within the scale. When food media content GO exceed what individuals seek, it leads to over-gratification, which has been associated with increased frequency of use, higher adoption rates, greater dependency, and heightened satisfaction (Rokito et al., 2019). Specific effects of under-gratifications have yet to be explored, but they likely indicate areas where (food) media content can improve towards (over-)gratification, to incite the favorable effects detailed above. Understanding these dynamics can lead to more targeted and effective food media content, with the gained knowledge of what gratifications to focus on more for this specific age demographic.

The FMCG scale was developed (Chapter Two) to capture people's general food media content gratifications, making it applicable across various media types and platforms. In the context of emerging adults, social media, and Instagram in particular, are some specific media platforms that warrant additional food media content use insights. Previous research has highlighted that this age group engages with food media content primarily through social media platforms, notably Instagram (e.g., Bramston et al., 2020; Vaterlaus et al., 2015). This trend is hardly surprising, given the substantial increase in highly visual food media content since the emergence of social media (e.g., Bevelander et al., 2013; Coates et al., 2019; Zak & Hasprova, 2019), and emerging adults being highly present on these platforms (e.g., Auxier & Anderson, 2021). Considering these factors, this report not only presents an overview of the general food media content gratifications among emerging adults, but also delves into the specific food media content gratifications they seek and obtain from social media platforms, and especially from Instagram.

In sum, emerging adults have specific (media) needs and gratifications, seeking various purposes from media content, including food-related media. Understanding and addressing these unique preferences can provide valuable insights for marketers, researchers, and health professionals, contributing to a more effective and tailored approach to food media content for this demographic. Additionally, exploring gratification discrepancies can reveal the aspects of food media content that resonate most with emerging adults, guiding content creators in crafting compelling and relevant experiences. In this chapter, we will explore these food media content gratifications and discrepancies among emerging adults by sharing results from different studies adopting the FMCG Scale we detailed earlier. The

results presented will include findings from Study 3 in that chapter, as well as two other studies exploring the scale results for social media and Instagram, specifically.

METHOD

Data Collection

The current chapter comprises three cross-sectional survey studies that focused on examining the food media content gratifications among emerging adults. All three studies utilized convenience samples of Flemish emerging adults, who were recruited through social media promotions. Study A's data collection on general food media content gratifications was part of a global research project called the #CoronaCookingSurvey, conducted between November 2020 and January 2021. Study B was conducted in the Spring of 2021 and focused on food media content gratifications from social media, with study eligibility limited to emerging adults who used social media. Lastly, Study C, equally conducted in the Spring of 2021, concentrated on food media content gratifications on Instagram, and only active Instagram users among emerging adults were eligible to participate.

Measures

The food media content gratifications (FMCG) scale was used to assess emerging adults' food media content gratifications sought (GS) and obtained (GO) (see Chapter X). First, the list of GO ('I could') items was provided, followed by a question asking them how they are exposed to food media content most, using a 5-point Likert scale (1=never to 5=always): whether they seek it, it is a habit, someone else sends it to them, and/or they coincidentally/spontaneously come across it. Only when respondents indicated to seek food media content (i.e., 'frequently' or 'always'), the respondents receive the GS ('I want to') item list. The 32 GS and 32 GO items were randomly ordered and answered on a 5-point Likert scale (1=strongly disagree to 5=strongly agree). Table 8 presents an overview of the internal consistency (Cronbach's α) for the FMCG factors in each of the three studies. The results indicate strong internal consistency for both GS and GO across all three studies.

Figure 7. Visualization of the Different Studies Adopting the FMCG Scale among Emerging Adults

While the three studies shared a common FMCG scale implementation approach, the conceptualization of food media content was adapted to fit the context of the separate studies. In Study A, we defined food media content as "media messages about food, excluding traditional advertising and health campaigns". In Study B, we narrowed the focus, towards food media content on social media platforms, and in Study C, we focused on food media content on Instagram. This differentiation allowed us to explore emerging adults' food media content gratifications across various contexts.

Table 8. Cronbach's α of FMCG Factors Per Study

	Study A General		**Study B Social Media**		**Study C Instagram**	
	GS	**GO**	**GS**	**GO**	**GS**	**GO**
N	116	246	107	322	79	244
Entertainment & Relaxation	.809	.787	.741	.726	.894	.822
Social Food Connections & Identity	.852	.839	.804	.760	.930	.858
Body Gazing	.935	.905	.919	.912	.885	.895
Food Porn	.869	.865	.816	.743	.861	.805
Information on Food Cultures	.930	.912	.959	.892	.848	.837
Information on Food & Health	.887	.901	.887	.863	.929	.879
Information on Cooking Convenience	.864	.917	.937	.881	.921	.913

In Study A and B we also assessed the specific media types through which emerging adults come across food media content most frequently. Participants in both studies indicated on a 6-point Likert Scale (1=I don't use this medium, 2=never, 3=rarely, 4=sometimes, 5=frequently, to 6=all the time) to what extent they have encountered or used a specific media type to access food media content. In Study A, the assessed media types included Cookbooks, Other Print Media (such as recipe cards and magazines), TV Shows (including online streaming services), Websites or Blogs, Facebook, Instagram, Pinterest, Reddit, and YouTube. In contrast, Study B focused solely on the exposure to food media content through social media platforms, including Facebook, Instagram, Pinterest, Reddit, TikTok, and Twitter, as well as YouTube.

Data Analysis

Descriptive statistics were performed using SPSS 28 to explore emerging adults' food media content gratifications among the three studies. Moreover, repeated measures ANOVAs were conducted to see whether the gratification factors per study significantly differed from each other. Next, the sample in Study B concerning food media content gratifications on social media allowed us to discern between different emerging adults more distinctly. Specifically, we conducted independent samples t-tests, suitable for our smaller sample sizes (Siegel & Castellan, 1988), to explore gratification differences between genders (people who identified themselves as "X" were excluded for this analysis). Furthermore, for the discrepancy analyses we adapted the methodology of Palmgreen and Rayburn (1979) and Rokito et al. (2019) and computed a discrepancy score per gratification factor per study by determining the mean difference between participants' averaged responses to GO and GS. Because this calculation requires both GS and GO to be completed, this analysis could only be performed among regular seekers of food media content in the three studies. We viewed a positive discrepancy score indicating over-gratification, indicating that participants obtained more gratifications than they sought from the food media content. Conversely, a negative discrepancy score signified under-gratification, suggesting that participants obtained less gratifications from the food media content than they initially sought. In addition to the methodology of Palmgreen and Rayburn (1979) and Rokito et al. (2019) repeated measures ANOVAs were performed to discover if the discrepancy scores were significant, reinforcing whether they were effectively under- or overgratified.

RESULTS

Sample Characteristics

In the first study on general food media content *N*=246 emerging adults took part, in the second on social media *N*=312 participated, and a total of *N*=244 emerging adults filled out the third study focusing on Instagram. Across the three

studies, women (62.5-83.6%) and highly educated (58-74%) emerging adults were overrepresented. Table 9 provides an overview of participants' demographics from these three studies.

Table 9. Socio-Demographic Characteristics of the Samples – M (SD) or n (%)

	Study A: General	**Study B: Social Media**	**Study C: Instagram**
N	246	312	244
Age	21.41 (2.11)	21.87 (1.94)	21.89 (1.69)
Gender			
Female	203 (82.5%)	195 (62.5%)	204 (83.6%)
Male	43 (17.5%)	115 (36.9%)	40 (16.4%)
X	/	2 (0.6%)	/
Education			
Elementary School Degree	0	12 (3.8%)	0
High School Degree	97 (39.4%)	127 (40.7%)	61 (25%)
Bachelor's Degree	108 (43.9%)	119 (38.1%)	128 (52.5%)
Master's Degree	41 (16.7%)	53 (17%)	55 (22.5%)
Doctorate	0	1 (.3%)	0
SES			
I don't know	1 (0,4%)	39 (12.5%)	0
Low	9 (3.7%)	12 (3.8%)	10 (4.1%)
Middle	54 (22%)	79 (25.3%)	56 (23%)
High	182 (74%)	182 (58.4%)	178 (73%)
Cooking Frequency*			
Breakfast	/	3.32 (1.52)	3.45 (1.54)
Lunch	/	3.90 (1.14)	3.63 (1.14)
Dinner	/	4.16 (1.24)	3.75 (1.21)

Note. *Cooking frequency was measured on 5 point-Likert Scale ranging from 1=(almost) never to 5=(almost) always.

How Do Emerging Adults Come into Contact with Food Media Content?

Across the three studies, emerging adults primarily reported exposure to food media content in two ways: through coincidental exposure or intentional seeking (Table 10). To a lesser extent compared to intentional seeking and incidental encounters, emerging adults across the three studies reported being exposed to food media content due to habit or because others sent it to them.

In Study A and B we also investigated the specific media through which emerging adults most often encounter food media content, including both intentional and

incidental exposure. In Study A, participants revealed that they were most frequently exposed to food media content through websites, Instagram, and YouTube. Likewise, Study B showed that Instagram was the most commonly reported social media platform for emerging adults to come into contact with food media content, followed by YouTube and Facebook.

Table 10. Emerging Adults' Exposure to Food Media Content – M (SD)

	Study A General	**Study B Social Media**	**Study C Instagram**
N	246	312	244
Look for it yourself	3.11 (1.23)	2.81 (1.20)	2.81 (1.14)
Habit	2.30 (1.11)	2.38 (1.14)	2.35 (.98)
Sent by someone else	2.48 (1.00)	2.75 (1.03)	2.98 (1.11)
Coincidentally or spontaneous	3.19 (1.01)	3.72 (.99)	3.56 (.89)
Cookbooks	3.13 (1.46)	/	/
Other Print Media (e.g., recipe cards, magazines)	2.86 (1.41)	/	/
TV Shows (including online streaming services)	3.09 (1.28)	/	/
Websites or Blogs	3.59 (1.41)	/	/
Facebook	3.22 (1.28)	3.90 (1.21)	/
Instagram	3.46 (1.66)	4.35 (1.38)	/
Pinterest	2.40 (1.58)	2.44 (1.70)	/
Reddit	1.70 (1.01)	1.29 (.66)	/
YouTube	3.19 (1.34)	3.44 (1.32)	/
TikTok	/	2.86 (1.78)	/
Twitter	/	1.78 (1.06)	/

Note. The ways in which emerging adults are exposed to food media content was measured from 1 (never) to 5 (always). Food media content exposure within specific media types was measured on 6 point-Likert Scale: 1=I don't use this medium, 2= never, 3=rarely, 4=sometimes, 5=frequently, to 6=all the time.

What do emerging adults seek and obtain from food media content?
Table 11 depicts the mean scores for each food media content gratification factor in all three studies. Across these studies, it is evident that *information on cooking convenience* is both the gratification most sought and obtained among emerging adults. This means that when consuming food media content in general, on social media, and on Instagram specifically, emerging adults seem to mostly seek and find quick and easy recipes, inspiration, and cooking tricks.

Overall, it seems that besides information on cooking convenience, other GS from food media content among emerging adults include other information, like food from other cultures and for nutritional health. *Entertainment & relaxation* and *food porn* are GS more from social media and Instagram, in particular. In terms of GO, we see similar results, where emerging adults mainly obtain different kinds of information and also (aesthetic) pleasure through *entertainment & relaxation* and *food porn*.

Table 11. Gratifications Sought & Obtained from Food Media Content - M (SD)

	Study A General		**Study B Social Media**		**Study C Instagram**	
	GS	GO	GS	GO	GS	GO
N	116	246	107	322	79	244
1. Entertainment & Relaxation	3.14 (.84)[4,5,6]	2.98 (.77)[3,4,5]	3.27 (.71)[4,6]	3.07 (.77)[6,3]	3.74 (.89)[6]	3.43 (.82)[4]
2. Social Food Connections & Identity	2.31 (.81)[3]	2.41 (.73)	2.52 (.81)[2]	2.32 (.69)	2.89 (1.04)[5]	2.45 (.78)
3. Body Gazing	2.39 (1.17)[2]	2.86 (1.14)[1,4,5,6]	2.52 (1.20)[3]	2.93 (1.26)[1]	2.32 (.97)	2.95 (1.18)[7,5]
4. Food Porn	2.84 (1.10)[1,6]	2.98 (1.05)[1,3,5,6]	3.24 (1.08)[1,5]	3.40 (.99)[5]	3.42 (.98)[5,6]	3.46 (.95)[1]
5. Information on Food Cultures	3.37 (1.08)[1,6]	2.98 (1.04)[1,3,4]	3.64 (.98)[4,6]	3.37 (1.05)[4]	3.27 (.92)[2,4,6]	3.2 (.92)[7,3]
6. Information on Food & Health	3.11 (.86)[1,4,5]	2.79 (.85)[3,4]	3.67 (.76)[1,5]	3.16 (.87)[1]	3.52 (.93)[1,4,5]	3.08 (.87)[3,6]
7. Information on Cooking Convenience	4.00 (.67)	3.35 (.98)	4.26 (.73)	3.66 (.94)	4.38 (.65)	3.74 (.94)

Note. Measured from 1 (totally disagree) to 7 (totally agree). Gratification results per factor, per sought/obtained in a study (vertically within the same column) that are not significantly different from each other are marked with their corresponding factor number (left column).

Discrepancies between GS and GO

We calculated a GS-GO discrepancy score per gratification factor per study to see which gratifications, in which media content, emerging adults perceive to be fulfilled, over-fulfilled, or under-fulfilled (Table 12). Across the three studies, the gratifications *social food connections & identity*, *body gazing*, *food porn*, and *information on food cultures* seem over-gratified, indicating that emerging adults obtain these gratifications more than they seek them out. This thus seems to apply for food media content in general, on social media, and on Instagram. Of these, *body gazing* seems to be the most over-gratified across studies, followed by *food porn*, indicating that emerging adults mainly obtain these gratifications from their food media content experiences. Similarly, across studies, *information on cooking convenience* seems to be under-gratified among emerging adult seekers: they do not perceive to obtain this as much as they seek it out. The remaining gratifications, *entertainment & relaxation* and *information on food & health*, have more diverging discrepancy scores in the different studies. However, their smaller discrepancy scores, both negative and positive, seem to indicate that these gratifications are simply "gratified", but not over or under-gratified.

Table 12. Food Media Content GS-GO Discrepancy Results among Regular Seekers - M (SD)

	Study A: General *n*=116				**Study B: Social Media *n*=107**				**Study C: Instagram *n*=79**			
	GS	GO	Discr.	*F*(1, 115)=	GS	GO	Discr.	*F*(1, 106)=	GS	GO	Discr.	*F*(1, 78)=
Entertainment & Relaxation	3.14 (.84)	3.21 (.63)	.07	1.27	3.27 (.71)	3.37 (.67)	.1**	5.28	3.74 (.89)	3.74 (.82)	0	.000
Social Food Connections & Identity	2.31 (.81)	2.60 (.69)	.29**	32.93	2.52 (.81)	2.63 (.66)	.1*	6.07	2.89 (1.04)	2.93 (.84)	.04	.46
Body Gazing	2.39 (1.17)	3.01 (1.14)	.62**	59.92	2.52 (1.20)	3.16 (1.18)	.64**	58.75	2.32 (.97)	3.3 (1.13)	.98**	64.76
Food Porn	2.84 (1.10)	3.28 (.97)	.44**	43.60	3.24 (1.08)	3.72 (.80)	.48**	42.38	3.42 (.98)	3.73 (.78)	.31**	17.51
Information on Food Cultures	3.37 (1.08)	3.41 (.94)	.04	.28	3.64 (.98)	3.67 (.93)	.03	.26	3.27 (.92)	3.36 (.79)	.09	1.63
Information on Food & Health	3.11 (.86)	3.10 (.78)	-.01	.08	3.67 (.76)	3.62 (.65)	-.05	.95	3.52 (.93)	3.55 (.77)	.03	.57
Information on Cooking Convenience	4.00 (.67)	3.87 (.63)	-.13*	6.67	4.26 (.73)	4.13 (.67)	-.13*	6.46	4.38 (.65)	4.31 (.64)	-.07	1.91

Note. * p<.05, ** p<.001

Differences in Social Food Media Content Gratifications Between Women and Men

The gender differences regarding GS from food media content on social media from Study B are largely non-significant, likely due to the small and skewed sample sizes (Table 13). Information on cooking convenience, however, was sought significantly more by women than by men. All GO factors, on the other hand, showed significant differences between genders. Women perceived to obtain every social food media content gratification significantly more than men did.

Table 13. Gender Differences for Gratifications Sought and Obtained from Social Food Media Content (Study B) – M (SD)

	Gratifications Sought			**Gratifications Obtained**		
	Female	Male	T-test Difference	Female	Male	T-test Difference
N	92	15		195	115	
Entertainment & Relaxation	3.27 (.71)	3.27 (.75)	t(105)=.004, p=.997	3.27 (.62)	2.75 (.89)	t(179.814)=5.411, p<.001
Social Food Connections & Identity	2.54 (.79)	2.39 (.97)	t(105)=.668, p=.506	2.47 (.63)	2.06 (.71)	t(308)=5.269, p<.001
Body Gazing	2.45 (1.19)	2.91 (1.26)	t(105)=-1.376, p=.172	3.26 (1.20)	2.37 (1.18)	t(308)=6.377, p<.001
Food Porn	3.29 (1.07)	2.93 (1.16)	t(105)=1.171, p=.244	3.71 (.77)	2.90 (1.09)	t(18.923)=6.966, p<.001
Information on Food Cultures	3.64 (.99)	3.60 (.93)	t(105)=.165, p=.870	3.60 (.91)	2.99 (1.14)	t(199.826)=4.952, p<.001
Information on Food & Health	3.67 (.75)	3.69 (.81)	t(105)=-.097, p=.923	3.46 (.68)	2.66 (.92)	t(187.529)=8.137, p<.001
Information on Cooking Convenience	4.35 (.63)	3.68 (1.05)	t(105)=3.437, p<.001	4.03 (.57)	3.04 (1.09)	t(152.240)=9.109, p<.001

DISCUSSION & CONCLUSION

This report summarizes the findings on how emerging adults encounter food media content and their sought and obtained gratifications from it, utilizing the developed and validated Food Media Content Gratification Scale.

Results from the three separate studies consistently highlight that emerging adults primarily experience exposure to food media content in two main ways: through coincidental encounters or intentional searches. Moreover, the prevalence of food media content exposure is predominantly through online sources, with Instagram emerging as the most prominent platform in both studies A and B. This aligns with previous findings (Ngqangashe et al., 2021) as well as our own (see Chapter 1: Focus group discussions), indicating that food media content exposure can occur selectively or spontaneously and that online food media content is heavily present in emerging adults' lives.

Regarding intentional and incidental food media content exposure, it is crucial to recognize that these processes may not be mutually exclusive but rather intertwined in a feedback loop (Cooper & Tang, 2009; S. Park & Lee, 2023; Thorson, 2020), especially with regard to online food media content exposure. Previous research has demonstrated this interconnected nature in the context of news exposure on social media, where intentional news-seeking behavior and subsequent incidental encounters with news are entangled, leading to a reinforcement of exposure (Thorson, 2020). Hence, the substantial incidental exposure to food media content among emerging adults could also be influenced by their prior selective searches or the attention they have devoted to such content. This feedback loop of intentional and incidental exposure underscores the complexity of how emerging adults engage with food media content, challenging the conventional dichotomy of active versus passive media consumption and highlighting the need for a more nuanced understanding of their media behaviors.

We analyzed what emerging adults across the three studies perceive to seek from (GS) and find in (GO) food media content in general, on social media, and on Instagram. Information on cooking convenience emerged as the most sought, most obtained, but largely under-gratified gratification for emerging adults across all three studies. This finding corroborates the crucial role of convenience in the context of emerging adults' food choices. Emerging adults namely frequently face time-related barriers, financial limitations, and limited access to cooking materials, making convenience a prominent factor guiding their food choices (Colatruglio & Slater, 2016; Malan et al., 2020; K. Molenaar, 2021). That convenience remains mostly under-gratified in these studies, shows that there is still room for food media content to address this further. Besides this, the results from other gratifications are more

divided between studies and whether they are sought or obtained. Gratifications towards other information concerning food, like information on food cultures or information on food & health, seem to be "just right" gratified across our studies. This stresses the importance of media – food media content more specifically – as a source of food information among emerging adults, which has been argued in previous research as a more turned to source in this life phase (e.g., Caraher et al., 2000; Malan et al., 2020). This holds important implications for food marketers and health promotors to include more food information that relates to these gratifications when communicating towards emerging adults. In other words, do not be shy in providing food information to emerging adults, but make it consistently convenient.

Our results also demonstrate that the link between emerging adults' high social media use (e.g., Auxier & Anderson, 2021) and the prevalence of highly aesthetic food depictions on social media (Bevelander et al., 2013; Coates et al., 2019; Zak & Hasprova, 2020). It shines through in this age group's gratification of *food porn* in food media content: they seek these aesthetics out in food media content or perceive to obtain this in their food media content use. It is also overgratified, meaning that they are acutely aware of this abundance of food porn.

Additionally, as argued, certain core gratifications, like entertainment and information, exist for media use in general (e.g., Sundar & Limperos, 2013). Our findings demonstrate that these more general gratifications also exist among emerging adults and are prevalent across media contexts.

The GS-GO discrepancy scores shed more light on whether emerging adults find what they seek in food media content in the three studies we analyzed. Several gratifications are over-gratified in all studies, meaning that they find more gratifications than they initially sought out for food media content in general, on social media, and on Instagram, with body gazing and food porn being most strongly over-gratified. Lambert et al. (2019) similarly found that appearances, of food and bodies in this report, instigate engagement with food media content and information among emerging adults. Having a fit body, related to the *body gazing* gratification, is also a healthy food choice determinator (Valente et al., 2020). Reinforcing *body gazing* as a gratification can thus be usefully linked to sharing food and health information for this age group. Only information on cooking convenience seems to be under-gratified in all three studies, though these results show an interesting relationship with the general food media content gratification results in discussed in the previous paragraph. There, it was clear that emerging adults mainly seek and obtain information on cooking convenience as a gratification of food media content, and that for food media content in general, on social media, and on Instagram. However, the GS-GO discrepancy results show that even though

this gratification seems to be obtained most, it is not obtained enough among emerging adults who regularly seek out food media content. This is an interesting finding that highlights the value of studying GS-GO discrepancies: it shows us that this is a primary gratification, but one that can be played out more in food media content for emerging adults. The existing literature details certain media effects of media use over-gratification on attitudes and behaviors, like more frequent use, higher adoption, more dependency, and increased satisfaction (cf. Rokito et al., 2019). As such, future research with more in-depth analyses and predictive power can help comprehend the potential impact of under-gratification and over-gratification of food media content on future media use and media effects among emerging adults.

Across all three studies, it is noteworthy that gratifications linked to seeking information were more prominently reflected as Gratification Sought (GS) compared to those related to diversion, such as body gazing, food porn, and social food connections and identity. However, these diversion-related gratifications were found to be more frequently obtained, indicating an over-gratification pattern. This observation aligns well with the premise put forth by Rubin (1983), suggesting that instrumental media use, characterized by active and purpose-driven consumption, tends to align with seeking informational gratifications. Conversely, the concept of ritualized media use, marked by less intentional and goal-oriented consumption, is often associated with diversion-related gratifications.

The sample in Study B allowed for an investigation of some additional differences between emerging adults based on gender on social media. In those results, it became clear that women and food media content seekers obtain more gratifications from food media content on social media than, respectively, men and non-regular food media content seekers. The gender differences align with previous research highlighting that for food preparation (e.g., Taillie, 2018), food literacy (e.g., Azevedo Perry et al., 2017), and certain social media use (e.g., Auxier & Anderson, 2021), women score higher than men – at a younger age in the case of food literacy (e.g., Azevedo Perry et al., 2017). This evidence may provide some context that emerging adult women may be more involved with food media content and thus have more GO from such content on social media. Future research should continue to further look into how food media content gratifications may not only differ according to gender, but also across various other individual characteristics such as socio-economic status or food literacy level.

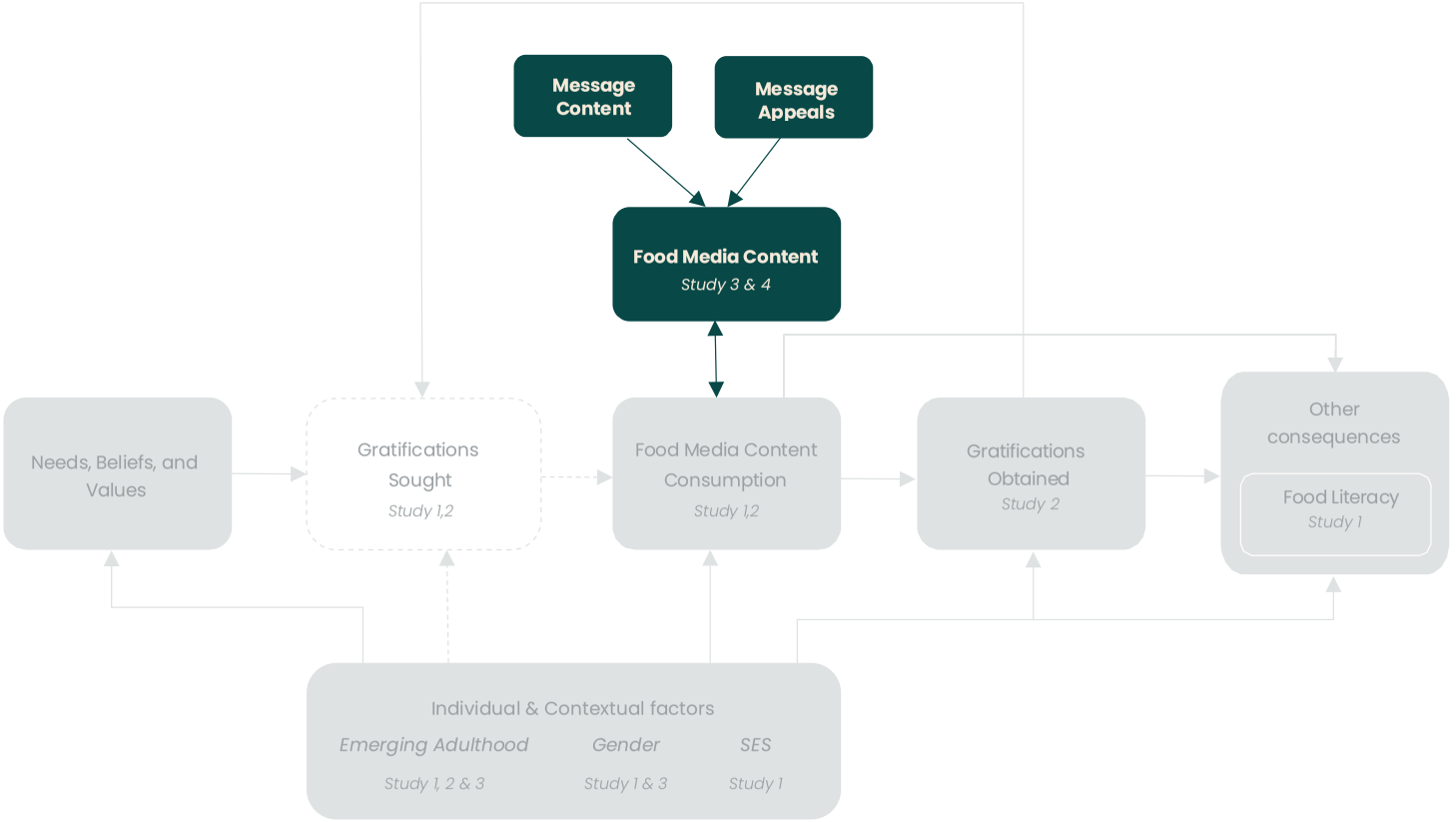
The research brief entails some limitations associated with the included studies, similar to the limitations specific to the FMCG Scale discussed in Chapter Two. Firstly, all three studies utilized convenience sampling, resulting in limited sample sizes and an overrepresentation of female emerging adults from higher socio-

economic backgrounds. This may limit the generalizability of the findings to a broader population of emerging adults. Furthermore, the convenience sampling approaches likely entail a self-selection bias towards people who were already somewhat interested in food media content and thus reporting on that media use.

PART 2

Analyzing food media messages

Figure 8. Dissertations' Theoretical Framework applied to Part Two



CHAPTER 4

Behavioral Change Techniques In Influencers' Social Media Messages

Based on Teunissen, L., & Van Royen, K., (Forthcoming). *Behavioral Change Techniques In Influencers' Social Media Messages*. De Bruijn, G. & Vandebosch, H. (Eds.) *Health, media, and communication*. Berlin, Boston: De Gruyter -Mouton.

ABSTRACT

Influencers aim to design messages that attract and resonate with their audiences' interests and help them build an authentic and expert identity. They are believed to be successful exactly because they know their target audience inside out and know how to create content that charters engagement. Health promotors often collaborate with influencers. This allows their health messages to reach a wider audience. However, contrary to influencers, when health promotors design messages, they primarily focus on behavioral change theory and techniques (BCTs). The current chapter aims to explore if BCTs are also observable in the messages of influencers, and how they are implemented. First, it starts with providing an overview of how health promotors and influencers typically design messages. Next, it presents a case study that investigates the presence of BCTs in food influencers' messages. Lastly, the findings from the case study are compared with the literature overview, and research and practical implications for health promotors are discussed.

Keywords: Influencers, Behavior Change Techniques, Content Analysis

INTRODUCTION

While health promotors primarily aim to promote health and strive to prevent diseases, social media influencers (referred to as *influencers*, hereafter), often do not intentionally seek to promote health behaviors. Regardless of the different targeted outcomes, they both aim to influence people's knowledge, attitudes, and behaviors. To achieve this goal, health promotors and influencers design messages, be it from different perspectives.

Influencers position themselves as authentic experts who create an intimate bond with their followers (Hudders et al., 2021). They aim to design messages that attract and resonate with their audiences' interests and help them build an authentic and expert identity (Hudders et al., 2021; Leung et al., 2022). Influencers are thought to be successful exactly because they know their target audience inside out, and know how to create content that charter engagement. Contrary to influencers, who are social media originalists, health promotors are developers of strategies that aim to enable people to improve health. They too, are now increasingly turning to social media to deliver health messages (Ul-Ain et al., 2022). When health promotors aim to design effective health promotion messages, they primarily rely on behavioral change theory and techniques (BCTs) (French et al., 2012). For example, by using influencers as a credible source to spread health-related messages. The theory-driven design of health messages is also important, since health interventions incorporating BCTs have been demonstrated to be more effective than interventions that do not use them (Young et al., 2019). So, although influencers and health promoters have different starting points to design messages, both seem to have complementary expertise to effectively reach people and promote behavior change (Van Royen et al., 2022).

In the context of messages from influencers, previous research has mainly focused on the content types, content attributes, and platform features studied from a marketing or strategic communication perspective (Hudders et al., 2021; Vrontis et al., 2021). However, to our knowledge, former research has not yet investigated influencers' messages from a health promotors' point of view, meaning by observing the presence of BCTs. As highlighted before, influencers do not necessarily take BCTs into account, but previous research has found that BCTs can be observable in other commercial content such as in physical activity, lifestyle, food- and nutrition-related apps (e.g., Simões et al., 2018). While these apps are not always explicitly grounded in theories of health behavior or developed by health promotors, research observed the presence of one to multiple BCTs (e.g., Conroy et al., 2014). Following these previous findings, it may be that although influencers may not consciously use BCTs to design messages, BCTs can be observed in the messages of influencers.

The current book chapter aims to explore if BCTs are observable in the messages of influencers, and how these are implemented. The chapter starts with providing an overview of how health promotors and influencers typically design messages. Afterwards, an illustrative case study is presented that investigate if and how BCTs are present in food influencers' messages on Instagram. Subsequently, the findings of the case study will be compared with the current literature about influencers' message design, along with implications for research and practice.

BEHAVIORAL CHANGE TECHNIQUES IN SOCIAL MEDIA HEALTH INTERVENTIONS

Health promotors usually follow a systematic approach to inform the development and design of interventions. There exist various planning frameworks (e.g., Intervention Mapping Protocol, UK Medical Research Council's guidance, Behavior Change Wheel) (Bartholomew et al., 1998; Craig et al., 2008; Michie, Van Stralen, et al., 2011), which make use of a theory-driven approach and traditional behavior change theories to develop evidence-based health interventions. One critical step in planning a health intervention is identifying and understanding the health problem and target group. Behavior change theory helps to explain why individuals and communities behave the way they do by providing a number of factors that affect an individual's ability and willingness to adopt and maintain a certain behavior (Michie, Van Stralen, et al., 2011). Evidence can then inform which behaviors are to be changed among which target group and which potential BCTs are likely to be effective in altering specific determinants underlying these behaviors (French et al., 2012). These BCTs can be incorporated into health messages. A BCT is "an observable and replicable component of an intervention designed to redirect behavior" (Michie et al., 2013). BCTs are irreducible, meaning they are the "smallest identifiable components that in themselves have the potential to change behavior" (Michie et al., 2018). Examples are goal setting, modeling, or providing feedback (Michie et al., 2013). Interventions founded in behavior change theory are more often reported with significant outcomes and are proven to have a greater impact (Webb et al., 2010; Young et al., 2019).

The application of BCTs in the context of social media

Social media are increasingly used for specific health-related behavioral interventions (Ul-Ain et al., 2022). Simeon et al. (2020) reviewed reports of social media interventions to change health behaviors in adults and identified the top 15 BCTs applied across interactive social media. Most applied BCTs included: social support (unspecified which type), instruction on how to perform a behavior, credible source, information about health consequences, goal setting (behavior), practical social support, emotional support, self-monitoring of behavior, problem-solving, feedback on behavior, demonstration of the behavior, social comparison, prompts/

cues, restructuring the social environment, and self-monitoring of outcome(s) of behavior. For example, Looyestyn et al. (2018) implemented the BCT "goal setting" in a beginners' running intervention for adults in a closed Facebook group through the encouragement of participants to set short-term (session goals) and long-term goals (at the end of the program) by offering information and motivational materials. "Social support" in this intervention was put into practice by messages from the group facilitator asking participants to post photos and prompting them to answer questions and interact with others (Looyestyn et al., 2018). Nevertheless, social media interventions often do not specify how BCTs are operationalized (Simeon et al., 2020).

Message design: Translating the BCTs into messages

Theories of behavior change provide the necessary grounding in the processes to motivate healthy behaviors. However, message design theory is needed to translate the abstract psychological processes behind BCTs into concrete and effective health communication messages (Cho, 2011).

Health promotors use several persuasive message design principles to ensure the message is suited for their target audience. Also, here, a theory-based approach is primarily used, relying on persuasive communication theories. Health promotors need to decide on the source or endorser of the message, the message arguments, message framing, style, and type of emotional appeals (e.g., fear, humor) (Corcoran, 2010). For example, an important theory often used to define message arguments and select the message source or endorser, is the Elaboration Likelihood Model (ELM) of Persuasion (Petty et al., 1981). This persuasion theory explains how people process messages differently — and how these processes change attitudes and behavior. ELM suggests how best to persuade someone, which has consequences on designing a message (Petty et al., 1981). Even though theory-based development is important for producing effective health messages, the other part is knowing the target group in order to develop messages that align with their values (Maibach & Parrott, 1995).

In context of the source or endorser of the message, which is also known to be an important BCT, health promotors themselves can spread health-related messages or could work with other persons or organizations, such as influencers. Increasingly, health promotors have been seeking ways to collaborate with influencers to spread health-related messages on social media. As influencers usually have a large following of individuals who trust and engage with the influencers' content, they can be able to reach a wider audience (Haenlein et al., 2020). However, influencers often do not intentionally seek to promote healthy behaviors but position themselves as authentic experts who create an intimate bond with their followers to establish engagement and influence their followers' behaviors and opinions (Hudders et

al., 2021). The role of the influencer within these collaborations can differ greatly depending on their level of involvement. They can be the content creator, meaning they are responsible for creating the content that will be shared, or they can simply be a messenger, responsible for sharing the message to their followers, without being involved in the production of the content. No matter what their role is, in the end, the influencer still has the freedom and control of what they tell and how they share their story on social media (Leung et al., 2022).

MESSAGE DESIGN STRATEGIES BY SOCIAL MEDIA INFLUENCERS

Influencers profile themselves uniquely by choosing specific types of "content" (i.e., a term used in influencer marketing and social media communication research domains to refer to the message shared on social media, whether it is a text, photo, video,...) to share and develop their own narrative and visual style (Enke & Borchers, 2021). In this way, influencers build distinct personal brands attracting like-minded people who are engaged by the content and communication style of the influencer (Leung et al., 2022). Additionally, through frequent interactions with their followers and experimenting with various contents, influencers learn and know what their followers do and do not appreciate (Leung et al., 2022). Moreover, influencers design and tailor their messages to attract and resonate with the interests of their current and potential new followers. This is important as influencers, who share similar interests and use the same language as their audience, will build a stronger relationship with their followers (Kim & Kim, 2020). Additionally, bringing ordinary personal stories in line with the same interests and language of the influencer, keeps users loyal to consume more content from the influencer (Kim & Kim, 2020).

When influencers create and share content, they aim to tell their stories on social media to increase the total engagement on their accounts and to increase their personal appeal to elevate perceived similarity, familiarity, and sympathy (Pilgrim & Bohnet-Joschko, 2019). In order to reach these goals, influencers design their messages taking information (i.e., content types), design (i.e., content attributes), and technology (i.e., platform features) into account.

Content Types

Influencers create different types of content (e.g., how-to videos, hauls, product recommendations) in different areas of interest (e.g., food, fitness, beauty, fashion) to share on one or multiple platforms (e.g., Facebook, Instagram, YouTube) (Hudders et al., 2021). Regarding the different types of content, García-Rapp (2017) presents four categories used by influencers on YouTube. The four categories range from commercial to community content. The first category is called *"content-orientated"*. This category refers to content types (e.g., tutorials) where influencers position themselves as experts by sharing their know-how on selected content (García-

Rapp, 2017; Pilgrim & Bohnet-Joschko, 2019). For example, food influencers will mostly share food-related content, such as recipes, to showcase their expertise in food. Influencers sometimes also share their credentials, diplomas, and certificates to demonstrate that they are educated and possess the knowledge to share reliable information (Ranpariya et al., 2020). Showcasing this expertise to an influencer's audience makes followers believe that the influencer is an honest opinion leader (Ki & Kim, 2019). Additionally, content portraying expertise in combination with the influencer's face is likely to receive the largest number of likes (Feng et al., 2021). Next, García-Rapp (2017) distinguishes the "*market-orientated*" content category where influencers aim to persuade their audience with their messages. These contents explicitly go around specific products or services, such as product reviews or hauls where the influencer shares recent purchases. Thirdly, influencers can create and share *"relational-orientated"* messages. In these messages (e.g., vlogs), the influencer presents him/herself as an ordinary, relatable person, giving exclusive insights into his/her private life (García-Rapp, 2017). Finally, the last content category García-Rapp (2017) describes is the *"motivational-orientated"* content, where influencers advise on general life-related questions (e.g., self-help guides).

Content Attributes

Creativity, Uniqueness & Originality

Influencers are often called "content creators" who aim to design original, relevant, and novel content for their followers (Leung et al., 2022). Thousands of messages circulate on social media, so the message of the influencer needs to stand out; therefore, influencers design creative and original content to catch people's attention (Burke-Garcia, 2019). The perceived originality and uniqueness of a message strengthen the authenticity and credibility of the influencer among their actual and potential followers, which in turn leads to followers' behavioral intentions such as the intention to follow the influencers' advice (Casaló et al., 2020). This finding is also confirmed in the research of Cheung et al. (2022) who suggest that creativity and design quality are necessary to foster parasocial relationships and wishful identification. Furthermore, former research highlighted the importance of quality (e.g., content quality and creativity) over quantity (e.g., number of posts). Content volume is found to be negatively associated with influencer engagement metrics, which suggests that producing large volumes of content may fail to be creative and original (Tafesse & Wood, 2021).

Additionally, influencers make their posts in a way that is visually appealing. This is crucial as it is the use of creative visuals (e.g., photos and videos) that catches the followers' attention (Burke-Garcia, 2019). Ki and Kim (2019) found that visually appealing content is important in motivating individuals to like and follow the influencers. However, the findings of Ki et al. (2020) indicate that influencers' visually

attractive content does not make the followers feel closer to or similar to the influencer, but the persona's inspiring character does. Furthermore, later research showed that visually aesthetic content does not elicit trust in the influencer (Ki et al., 2022). So, visually appealing content is necessary for influencers to make their messages stand out from the myriad of available messages, but other aspects of the message might be more important to reach other goals (intimacy, trust) (Hudders et al., 2021).

Interaction Cues

Influencers use call-to-action techniques to initiate direct interactions and engagement with their followers (Enke & Borchers, 2021). Call-to-action techniques include asking followers questions, tagging other profiles, and commenting and engaging with their posts (Burns et al., 2021). These techniques ensure that followers engage more profoundly with the content than just "liking" and make followers feel more valued and involved (Burns et al., 2021; Cheung et al., 2022; Pilgrim & Bohnet-Joschko, 2019). Additionally, Ki and Kim (2019) found that interactive content is positively associated with developing a positive attitude towards the influencer.

First-person persuasive narratives

The content influencers create is also often referred to as persuasive narratives, where influencers present content (photo or video with textual caption) as a story (Feng et al., 2021). Influencers often tell their stories from a first-person perspective and share personal stories to create a sense of authenticity (Georgakopoulou, 2022; Hudders et al., 2021). Such personal stories document the life experiences of influencers and are frequently combined with the promotion of products (Page, 2022). Additionally, influencers often share a shot of themselves (selfies), which supports bringing their story from a first-person perspective (Feng et al., 2021). Bringing a story in a first-person perspective has been found to exert audience engagement, trust in the influencer, and relatability (Atiq et al., 2022; Chong & Swapna, 2020).

Ad disclosures

The messages influencers share can be commercial or non-commercial social media posts (García-Rapp, 2017). However, these messages can often blend, making it difficult for people to recognize if the message is a form of advertising (Boerman & Van Reijmersdal, 2016). Therefore, regulatory organizations have insisted that influencers disclose their commercial messages. The disclosures influencers incorporate in their messages can range from more implicit (e.g., sp, ad) to explicit ones (e.g., paid ad, sponsored, advertising) (Lee & Kim, 2020). Additionally, social media platforms now have built-in standardized disclosure formats (Boerman, 2020). Integrating advertising disclosures enables social media users to recognize the message as advertising (Evans et al., 2017; Kim & Kim, 2021). Additionally, Boerman

(2020) found that a disclosure and ad recognition do not damage the parasocial relationship with the influencer. The findings of Boerman (2020) also suggest that people are more inclined to share, like, or comment on the post when they recognize it as advertising. This finding contrasts with other findings that found that sponsorship disclosures lead to fewer likes and comments (Evans et al., 2017; Hendriks et al., 2020). The "congruence effect" may explain the increase in likes and comments (Kim & Kim, 2021), suggesting that it is essential for influencers to collaborate with brands that fit the influencer's profile to increase engagement when using ad disclosures.

Platform features

Influencers share messages on various social media platforms to reach an audience as large as possible (Haenlein et al., 2020). In addition, influencers use hashtags (i.e., keywords or strings of words, starting with a hash (#) (Erz et al., 2018)) to make their messages searchable and to broadcast their content (Page, 2012; Scott, 2018). However, one research showed that hashtags decrease the likelihood that a post gets likes because influencers may use trending hashtags which are irrelevant hashtags for their content (Zou et al., 2021). Thus, influencers must use relevant hashtags to engage the audience. Concerning the use of different social media platforms, it is essential to understand that each platform distinguishes itself from another, based on the platforms' different technological features regarding creating, modifying, and disseminating content (Tan, 2018).

The content influencers create can be formatted in written text, pictures, videos, or combined formats and can be recorded in advance or live, depending on the platform's features (Enke & Borchers, 2021). For example, on TikTok, an influencer can only upload videos with a caption, while on Instagram, they can share both images and videos (Haenlein et al., 2020). Additionally, social media platforms have different audiences (e.g., Facebook has an older user population than Instagram (PEW Research Center, 2021)) with different usage motives (e.g., entertainment vs. information seeking) (Sundermann & Raabe, 2019). For example, Facebook is more often used to get in touch with friends and family, while Twitter is a news source (Haenlein et al., 2020). Because social media platforms differ in features and audiences, influencers communicate their content in different ways across platforms so that the audience is willing to engage with the message (Burke-Garcia, 2019; Haenlein et al., 2020).

BEHAVIORAL CHANGE TECHNIQUES IN FOOD INFLUENCERS INSTAGRAM POSTINGS

As provided in the literature overview abovementioned, previous research has analyzed the content strategies by influencers from a marketing or strategic

communication point of view. However, research has not yet explored the messages of influencers from a health promotors' point of view, for instance, by observing the presence and implementation of BCTs, while this has been successfully done in previous research for commercial apps (e.g., Conroy et al., 2014). Exploring whether and which BCTs influencers apply "intuitively" can guide health promoters in how to apply BCTs in practice in a social media context and how these can be translated in a collaboration with influencers in a way that the influencer's authentic communication style will not be harmed. Therefore, we have undertaken a study to explore if BCTs can be observed in Instagram messages of food influencers.

A quantitative content analysis of Instagram messages posted by three Flemish popular food influencers (i.e., influencers who focus primarily on food-related topics (Goodman & Jaworska, 2020)) was performed. Three food influencers were selected based on a pilot study among Belgian emerging adults (N= 286). The pilot study was conducted during COVID-19, so participants were asked to list their favorite food-related persona before and since COVID-19. From the given responses, organizations (e.g., Tasty) and celebrity chefs (e.g., Jamie Oliver) were excluded. The three most mentioned food influencers (i.e., Chloekookt: approx. 77.000 followers, Kokerellen: approx. 36.000 followers , and Healthyhabits.celien: approx. 100.000 followers) before and since COVID-19 where chosen. Those three food influencers are all three Flemish micro (10.000 to 100.000 followers) influencers (Campbell & Farrell, 2020). The Instagram postings, which included the caption and the visual (image or video), of the three food influencers were coded during eight consecutive weeks (15 February 2021 until 11 April 2021).

The content analysis focused on the presence of BCTs. We used the CALO-RE taxonomy of behavior change techniques from Michie, Ashford, et al. (2011) as a starting point. This taxonomy is developed to identify potentially effective behavior change techniques that aim to increase healthy eating and physical activity (Michie, Ashford, et al., 2011). From this taxonomy, we excluded four BCTs that were less applicable to the context of social media and influencers (namely: agree behavioral contract, use of follow-up prompts, motivational interviewing, and general communication skills training). Additionally, we added two more BCTs (direct experience: encouraging a process whereby knowledge is created through experience, and individualization: providing the opportunity to have personal questions answered) retrieved from Kok et al. (2015).

The BCTs were summarized in a systematic coding tool using the Qualtrics software. Here, the presence or absence (1= present, 0= absent) of BCTs in either the caption or visual (image or video) was assessed. Before carrying out the content analysis, the codebook was first tested and refined. In terms of refinements, we added examples of BCTs in the context of influencers in the coding manual to facilitate

the coding process for the coders. Additionally, next to "present" or "absent," we added "doubt" as an extra option in order to discuss this doubt afterward with a second coder to establish consensus.

SPSS version 26 was used to conduct descriptive statistics to explore the presence of BCTs in the Instagram messages of the three chosen influencers.

The three influencers posted 113 Instagram messages between 15 February 2021 and 11 April 2021. Of the 113 coded Instagram messages, all messages incorporated at least one or a maximum of ten BCTs. On average, we observed 4.8 (*SD*=1.80) BCTs per social media message. As shown in Table 14, 23 of the 38 possible BCTs were observed in the coded social media messages. Additionally, Table 15 provides examples of how the three food influencers apply the BCTs.

The two most commonly observed (more than 75%) BCTs are "provide information about others' approval" and "provide instructions on how to perform the behavior". First, regarding providing information about others' approval, the food influencers mainly referred to how other followers already approved the influencers' behavior or opinion,. For example, by referring to how followers liked a recipe that went viral on TikTok or how a recipe that an influencer previously made was already favored among other followers. Additionally, next to explaining how other people think of certain behaviors and opinions, the food influencers shared their own opinion too. The observed food influencers often described what they favor, for example, which food products they recommend, or which recipe is their favorite. Second, food influencers commonly incorporate instructions on how to perform the behavior. One reason for this, is because food influencers often include recipes either with step-by-step instructions or information about where the followers can access the explained recipe in their messages. Additionally, food influencers also present giveaways or stimulate followers to purchase their or others' products. In this case, the influencers also explicitly described how followers could participate or buy certain products.

Other BCTs that were frequently observed (more than 30%) included "provide information on where and when to perform a behavior," "provide normative information about others' behavior," "teach to use prompts/cues," and "prompt practice." First, providing information on where and when to perform a behavior mainly consisted of telling their followers for which occasion they could make a particular recipe or use the given tips. For example, this is the perfect recipe to make on a cold and rainy day. Second, providing normative information about others' behavior was observed by referring to what other people and they themselves eat, for example, "*My favorite spring breakfast is yogurt bowls with all kinds of toppings* 🥣." Finally, the BCTs "teach to use prompts/cues" and "prompt practice" was applied

in the same way in the messages. Two of the three food influencers used these two BCTs by encouraging the followers to create their own prompt/cue by saving the recipe or the message content for later. Instagram has a built-in function to save messages in a separate folder, allowing individuals to access their saved messages later, thereby being reminded of the behavior.

Finally, four BCTs were less frequently observed (more than 20%). First, food influencers provided information on the consequences of behavior for the individual. When influencers' messages were about recipes, they referred to the delicious taste of the recipes as a reward, for example: *"You will enjoy!"*. Next, food influencers provided prompts to manage the potential stress of the followers when they should make a recipe or follow nutritional advice, for example, "*Don't worry, it is not that difficult*." Third, the BCT "Individualization" was observed in the messages. Food influencers position themselves as reachable persons who explicitly give their followers the opportunity to ask questions or show their behaviors and opinions to the influencer. Finally, food influencers encourage their followers to perform a specific behavior, such as preparing a recipe, for example, "*You neeeed to try this recipe!*".

In sum, this illustrative case aimed to observe the prevalence and incorporation of BCTs in the messages of food influencers. Although this case has a limited sample, we could observe BCTs in the messages of food influencers. The BCTs are implemented either explicitly in the caption/visual or through the platform features (e.g., save button). Additionally, the food influencers from this case study incorporated the BCTs with their own twist in order to remain authentic.

Table 14. Prevalence of BCTs in food influencers Instagram Postings (N=113)

BCTs	Frequency	%
Provide information about others' approval *(including the approval of the influencer)*	92	81.42
Provide instruction on how to perform the behavior	87	76.99
Provide information on where and when to perform a behavior	42	37.17
Provide normative information about others' behavior *(including the behavior of the influencer)*	40	35.40
Teach to use prompts/cues	39	34.51
Prompt Practice	39	34.51
Provide information on consequences of behavior to the individual	26	23.01
Stress management/emotional control training	26	23.01

Table 14. Prevalence of BCTs in food influencers Instagram Postings (N=113) (continued)

BCTs	Frequency	%
Individualization	26	23.01
Goal Setting *(Behavior)*	22	19.47
Provide information on consequences of behavior in general	21	18.58
Stimulate anticipation of future rewards	19	16.81
Model/demonstrate the behavior	17	15.04
Goal Setting *(Outcome)*	13	11.50
Barrier identification/problem solving	13	11.50
Set graded tasks	8	7.08
Time management	4	3.54
Facilitate social comparison	3	2.65
Direct experience	3	2.65
Prompt focus on past success	1	0.88
Plan social support/social change	1	0.88
Prompt anticipated regret	1	0.88
Fear arousal	1	0.88

Table 15. Examples of BCTs Application by Food Influencers

10 Most Observed BCTs	Example of application by food influencers
Provide information about others' approval *(including the approval of the influencer)*	This is my version of the famous 'baked feta pasta' that went viral on TikTok. The recipe has already been approved by many of you 🙂👌🏻
Provide instruction on how to perform the behavior	👆 Click via the link in the bio or surf to www.kokellen.be. Preparation: 1. Mash the ripe banana and mix with the egg and milk. 2. Then add the flour and baking powder. Mix to a batter, there may still be a few chunks in it due to the mashed banana. 3. Mix the blueberries through the batter. 4. If necessary, grease the waffle iron and bake the waffles until golden brown. (about 5 minutes) 5. Remove the waffles from the waffle iron. 6. Serve with a spoonful of vanilla yogurt and some fresh blueberries, if desired.
Provide information on where and when to perform a behavior	Perfect to serve as a snack on a cozy Mexican Dinner Night 🌞 🐰 3 tips to get through Easter well!
Provide normative information about others' behavior *(including the behavior of the influencer)*	A while back I shared that I ate homemade surimi salad for lunch and I was asked massively where the recipe could be found. I made this delicious CHIAPUDDING, a delicious breakfast, snack or dessert. Earlier this week I received a message from a dear follower that she had made this recipe but was not a fan of bok choy and therefore used broccoli.

Table 15. Examples of BCTs Application by Food Influencers (continued)

10 Most Observed BCTs	Example of application by food influencers
Teach to use prompts/cues	Save this recipe to the right below the photo to save it for later.
Prompt practice	Don't forget to save it for later & if you like this video make sure to leave a ❤️!
Provide information on consequences of behavior to the individual	The only way you'll find out if they're good? 🙈 You will have to make them! 😜 Dieting does not equal being healthy. In fact, it harms your health. Focus on improving your health instead of getting slimmer. 🥰💛
Stress management/ emotional control training	It looks fancy, but it's oh-so-simple to make!
Individualization	And are you in doubt about an adjustment? Then I will of course be happy to help you! Just comment under the blog post with a comment, I answer it daily. P.S. did you make this delicious veggie recipe? Don't forget to tag me @healthyhabitscelien.be.
Goal setting *(behavior)*	Don't wait too longgggg babyyyy cause it's going to change your life. Don't forget to take care of yourself today? Here I give 3 tips on how to take care of yourself, even if you are very busy! 💛

IMPLICATIONS FOR RESEARCH AND PRACTICE

In this chapter, we explored the message design of influencers from a health promotors' perspective, meaning whether influencers use intuitively BCTs in their messages. Based on our overview of the message design practices of influencers and health promotors, and the illustrative case study of food influencers, we carefully draw the following implications for researchers and health promotors.

In the first place, we can raise the question if BCTs are that different from influencer content strategies studied by marketing and communication scholars. Based on the abovementioned literature overview, we can conclude that influencers bring personal narratives to showcase their expertise and create an authentic identity. Furthermore, influencers build an intimate bond with their followers by virtually interacting with them and creating the impression that the influencers are approachable to their followers. These communication strategies are also reflected in the observed BCTs. In terms of the BCT *individualization*, we observed that food influencers use this BCT since they position themselves as reachable persons, allowing followers to ask or answer questions. This finding is in accord with the influencers' typical use of *interaction cues*. Next, the BCT *provide instruction on how to perform the behavior* was found in the messages of influencers, for example by demonstrating or explaining how to prepare a recipe. This finding can be reflected in what scholars refer to as influencers sharing *content-related messages* (García-Rapp, 2017), in order to showcase their specific expertise and know-how. Furthermore, we observed that food influencers *provide information about their approval of the promoted behavior* and *normative information about their own behaviors*, which is in accord with what scholars referred to as bringing *first-person narratives*. From these examples, we can suggest that influencers' strategies are perhaps not that different from BCTs, albeit labeled differently. However, future research could look into other domains (e.g., lifestyle or fitness) and types of influencers (e.g., mega vs. micro-influencers), whether they use the same or other BCTs, and whether they implement them differently.

Regarding the implementation of BCTs on social media, health promotors should keep in mind the platform features, as they provide opportunities to apply BCTs in specific ways. Namely, in the case study, we observed that food influencers applied several of the BCTs by using specific platform features. For example, in our case study, we observed that food influencers use Instagram's "save button" as a prompting environment cue. Previous research has highlighted that environmental prompting cues have been demonstrated to be effective in changing dietary behaviors (Arno & Thomas, 2016). Similarly, Simeon et al. (2020) identified that "social or virtual rewards (by design)" are implemented by platform features such as collect smiles, congratulations, badges, virtual gifts, or stars. However, future research is

necessary to investigate how integrated social media features serve as an effective BCT.

Finally, we suggest that health promotors and influencers should collaborate and embrace each one's unique expertise to create effective messages. It is important that health promoters clearly state what should be promoted and assess whether the message aligns with health recommendations and the ethical values of the health promotion sector. Furthermore, since influencers have day-to-day interactions with their followers and therefore also know intuitively what their audiences like and dislike (Leung et al., 2022), it is crucial that they have creative freedom to design their messages in order to guarantee their authenticity (Vanninen et al., 2022). Especially, as this chapter reveals that influencers intuitively apply BCTs. Conversely, there are also undesirable (e.g., promoting unhealthy eating or excessive alcohol consumption) and non-evidence-based messages of influencers circulating on social media. These messages can hold negative consequences and lead to unhealthy and risk-taking behaviors, especially since these messages may hold BCTs. This calls for another reason to enforce more regulation for influencers, to invest in educating influencers about their role in influencing people's behaviors, and make evidence-based health information and resources easily accessible and understandable.

CONCLUSION

The main aim of the chapter was to explore if BCTs are also observable in the messages of influencers, and how they are implemented. The chapter first provided an overview of how health promotors and influencers design messages. Subsequently, this chapter looked to influencers messages from a health promotors perspective, by observing the presence of BCTs. This illustrative case study, performed among food influencers, showed the opportunities of working with influencers to promote health-related behaviors, as they intuitively use BCTs. Health promotors should intensify and optimize their collaboration with influencers by (1) providing clear instructions of what health message should be promoted and (2) giving influencers the creative freedom to create health messages. On the other side, there may also be a potential danger of the communication of influencers as the messages may promote undesirable and risk-taking behaviors. Therefore, it is crucial to provide easy access to evidence-based health information and resources. Finally, the utilization of BCTs by influencers provides a valuable example of how BCTs can be creatively applied in social media by health promotors, for example by using the platform features.

CHAPTER 5

How are Food Influencers' Recipes Promoting Food Literacy? Investigating Nutritional Content, Food Literacy, and Communication Techniques in Instagram Recipes

Based on research conducted by Teunissen L., Van Royen K., Goemans I., Verhaegen J., Pabian S., De Backer C., Vandebosch H., and Matthys C. (2024). How are Food Influencers' Recipes Promoting Food Literacy? Investigating Nutritional Content, Food Literacy, and Communication Techniques in Instagram Recipes. *British Food Journal.* https://doi.org/10.1108/BFJ-05-2023-0399

ABSTRACT

At least 15 million #recipe posts circulate on Instagram, often created by food influencers. These influencers uniquely profile themselves by promoting their recipes in their own designs and using persuasive communication techniques to capture their followers' attention. However, depending on the nutritional value of recipes and the provided food literacy information, food influencers' recipes may promote or distort a healthy relationship with food among their followers. As online recipes are recognized as a possible way to promote food literacy, especially among emerging adults, investigating what food influencers share and how they promote these recipes may reveal promising strategies to promote food literacy. Therefore, the current research presents a content and nutritional analysis to explore what popular food influencers among emerging adults portray in their Instagram recipe posts (N=166) in terms of (1) references to food literacy, (2) nutritional value, (3) rational and emotional appeals, and (4) the relation between the nutritional value and rational/emotional appeals. Findings reveal that food influencers rarely embed references to food literacy in their recipe posts, especially regarding meal planning, food selection, meal consumption, and evaluating food-related information. Only in 28.9% of the posts information was given on how to prepare a recipe. Second, 220 recipes were included in the 166 recipe posts, of which the majority (65%) were main course meals that met at least six of the eleven nutrient criteria for a healthy main meal (67.2%). Finally, food influencers promote their recipe posts as positive narratives, focusing on the tastiness (66%) and convenience (40.9%) of meals. Health promotors should note the potential role of food influencers and seek ways to collaborate to provide information on how food literacy cues can be embedded in their communications and provide insights into how influencers' recipes can be optimized.

Keywords: content analysis, food influencers, Instagram, food literacy, nutritional content, recipes

INTRODUCTION

Food literacy, which has been argued to be a prerequisite for healthy dietary behaviors, refers to the interrelated combination of knowledge, skills, self-efficacy, and behaviors on various essential elements of healthy eating, such as food planning and managing, selection of food items, food preparation, eating, and evaluating information about food (Boedt et al., 2021; Slater et al., 2018; Vidgen & Gallegos, 2014). Food literacy encompasses a more comprehensive approach to food education, which has been debated to be more efficient than nutrient-centered education practices (Smith, 2009; Vidgen, 2016c). As higher food literacy is associated with a higher frequency of fruit and vegetable consumption (Poelman et al., 2018; Qutteina et al., 2021), lower consumption of snacks and sugar-sweetened beverages (Poelman et al., 2018; Qutteina et al., 2021), and lower self-report ratings of long-term illness and bad health status (Palumbo et al., 2019), it is important to focus on improving people's food literacy, and especially those of emerging adults (18- to 25-year-olds), who are the most in need for food literacy interventions (Slater et al., 2018). Within this specific demographic, recipe-related content from food influencers (i.e., food celebrities who focus primarily on food-related topics; Goodman & Jaworska, 2020) has been found to be popular (Bramston et al., 2020, Teunissen et al., 2023). However, the extent to which this recipe-related content from food influencers reflects the different aspects of food literacy remains unclear.

Recipe-related content from food influencers is often visually attractive, presents the information in an easy-to-follow way, and mentions ingredients that are affordable and accessible, which is extremely appealing for emerging adults (Decorte et al., 2022, Rogers et al., 2022). Furthermore, food influencers have been recognised as experts in successfully communicating about food and building relationships with younger audiences, given their ability to selectively choose content and communication techniques (e.g., using a positive and humorous tone; Rogers et al., 2022). Given the acknowledged expertise of food influencers in effectively communicating food-related content to younger audiences, along with the pronounced appeal of their recipes, their recipe-related content presents a promising opportunity to reach emerging adults, potentially enhancing their food literacy. However, this potential is only realized if food influencers' recipes portray nutritious meals and relevant food literacy information.

Recipe-related content can display the basic instructions and ingredients needed to prepare a meal or can go beyond and provide additional information regarding meal planning, food selection, preparation, and consumption (Herrera, 2021). Previous research has focused on the examination of specific facets of food literacy, such as food safety (Melville et al., 2023, Geppert et al., 2019, Barrett and Feng, 2020, Borda et al., 2014), or the nutritional value of recipes from various media sources

(Ngqangashe et al., 2018, Schneider et al., 2013, Camargo et al., 2022, Cheng et al., 2021). However, to our knowledge, an investigation into food influencers' recipes in terms of observing all various aspects of food literacy together as well as examining the nutritional value has not yet been done. Furthermore, specific communication appeals also determine how food influencers convey their recipe messages to their audience (Rogers et al., 2022). Past research has investigated the presence of emotional (i.e., focus on creating a positive emotional association) and rational appeals (i.e., focus on product benefits) in food advertisements (Hebden et al., 2011, Page and Brewster, 2007). However, the question arises as to whether these recipe appeals are observable in food influencers' recipe posts.

Recipe-related content cannot be reduced to merely its content or appeals, as the two components are intricately intertwined, therefore both aspects should be investigated to get a comprehensive understanding of which food influencers' recipe-related content emerging adults are exposed to, and how these may be suitable to promote food literacy. Accordingly, the present study aims to investigate the Instagram recipe posts of food influencers in terms of (1) the references to food literacy, (2) the nutritional value, (3) the presence of rational and emotional appeals, and (4) the relation between the nutritional value and rational/emotional appeals.

References to Food Literacy Aspects

Recipes are a popular means of communicating instructions about preparing a meal. Additionally, they can provide information regarding different food literacy aspects (e.g., how to replace a recipe's ingredient) (Herrera, 2021). Past research has investigated the presence of food safety practices, which is a specific element of food literacy, in recipe-related content from various media sources (e.g., YouTube videos, and cooking programs) (Melville et al., 2023, Geppert et al., 2019, Barrett & Feng, 2020, Borda et al., 2014). The findings indicated a limited presence of food safety practices in these contents (Melville et al., 2023, Geppert et al., 2019, Barrett and Feng, 2020, Borda et al., 2014). Despite this exploration, there is a notable gap in research regarding the investigation of other dimensions of food literacy within recipe-related content.

However, previous research has mainly focused on investigating how emerging adults perceive social media recipes (Decorte et al., 2022; Steils & Obaidalahe, 2020; Wang et al., 2022), there is a gap in understanding how recipes on social media provide information about various food literacy aspects. Instead, former research has mainly focused on how emerging adults perceive recipes on social media, from which we can also deduce how recipes contribute to food literacy (Decorte et al., 2022; Steils & Obaidalahe, 2020; Vaterlaus et al., 2015; Wang et al., 2022). Here, the research found that emerging adults perceive recipes on social media to be an important source of education related to various food literacy components (i.e.,

planning and managing, selecting, preparing, eating, and evaluating information). In terms of *planning and managing* meals, recipes on social media can be saved and served as meal ideas for later. For instance, Wang et al. (2022) found that emerging adults save interesting recipes on TikTok and use this function to revisit the recipes for food ideas in order to plan meals. With regard to the food literacy component *selecting*, previous research has indicated that emerging adults perceive social media recipes to teach them about new food products and gain information on where to access these foods (Vaterlaus et al., 2015). Furthermore, most research has found that recipes on social media figure as an education source regarding the *preparing* component of food literacy. Namely, recipes on social media are perceived by emerging adults as daily meal inspiration (Wang et al., 2022). The recipes are also recognized as a learning source for food preparation techniques, how to substitute ingredients, how to create healthier dishes, how to prepare meals more efficiently, and how to experiment with everyday food recipes (Decorte et al., 2022; Steils & Obaidalahe, 2020; Wang et al., 2022). Additionally, one research focused on how individuals construct food literacy on social media. Steils and Obaidalahe (2020) found that individuals construct food literacy by commenting on social media recipes. For instance, by providing feedback on the strengths and flaws of recipe's ingredients or procedures, along with concrete adaptation suggestions (Steils & Obaidalahe, 2020). The research of Steils and Obaidalahe (2020) has only considered how individuals themselves contribute to food literacy via commenting on recipes, but did not study how the recipe itself provides information regarding the various food literacy components. In particular, little attention has been paid to if food influencers communicate about different food literacy aspects in their recipes on Instagram. Therefore, the first research question (RQ1) is: *To what extent do food influencers communicate about various food literacy aspects in their recipes on Instagram?*

The Nutritional Value of Influencers' Recipes

Furthermore, despite the growing popularity of food influencers on Instagram, there has been limited research evaluating the nutritional value of the recipes they promote. Previous studies have assessed the nutritional quality of recipes from various sources, including cooking television shows, recipe websites, and social media platforms such as YouTube and Pinterest (Camargo et al., 2022; Cheng et al., 2021; Howard et al., 2012; Ngqangashe, De Backer, Matthys, et al., 2018; Schneider et al., 2013). First, studies have shown that meals prepared in TV cooking shows were likely to exceed the recommended intake of saturated fats and sodium while containing an inadequate portion of fruits and vegetables (Jones et al., 2013; Ngqangashe, De Backer, Matthys, et al., 2018; Silva et al., 2010). Similarly, a study of cookbooks found that most recipes were high in saturated fats, sodium, and carbohydrates (Howard et al., 2012). Recipes from websites and food blogs were also found to be excessive in saturated fats and sodium, but online vegetarian and seafood recipes were

found to be better (Dickinson et al., 2018; Schneider et al., 2013; Trattner et al., 2017). Only a limited amount of research has evaluated the nutritional quality of recipes from social media platforms. Camargo et al. (2022) found that Brazilian YouTube cooking channels mostly share recipes for snacks, desserts, and homemade fast foods, which contain a high portion of ultra-processed ingredients. Another research from Cheng et al. (2021) found that recipes from Pinterest contained more frequently seafood, poultry, or vegetables and less meat, however, recipes with higher fat and sugar content resulted in more shares and comments. However, little attention has been paid to the nutritional value of recipes specifically of food influencers on Instagram. To address this gap, the second research question (RQ2) is: *What is the nutritional value of food influencers' recipes on Instagram?*

Rational and Emotional Appeals

Food influencers have a unique advantage in building strong relationships with their followers, which is especially beneficial in promoting recipes. Namely, influencers interact daily with their followers; therefore, they know intuitively their followers' interests and which language their audience suits best, allowing influencers to build a stronger relationship with their followers (Kim & Kim, 2020; Leung et al., 2022). Specifically, in the context of food advertising, researchers often observe the presence of both emotional (i.e., focus on creating a positive emotional association) and rational appeals (i.e., focus on product benefits) (Hebden et al., 2011; Page & Brewster, 2007). This distinction is also valuable for social media recipes, as recipes can be seen, similar to food advertisements, as a way of promoting food-related behaviors and attitudes (Garaus & Lalicic, 2021). Accordingly, rational appeals focus on the recipe aspects or benefits (e.g., easy to cook), and emotional appeals focus on how the recipe elicits positive feelings (e.g., fun to prepare). However, the question arises whether these recipe appeals are observable in food influencers' posts. Therefore, the current paper will also investigate (RQ3): *To what extent do food influencers use rational and emotional appeals in their recipes on Instagram?*

The relation between the nutritional value and appeals

Former research has found that specific rational and emotional appeals promote more or less healthy foods in advertisements (Hebden et al., 2011; Page & Brewster, 2007). In the context of recipes, one study indicated that recipes categorized under healthy meals were more often described as healthy, less exciting, and less social than regular dinner recipes on allrecipes.com (Turnwald et al., 2022). Another study found that sweet recipes elicit more positive reactions on social media compared with more healthy recipes (Steils and Obaidalahe, 2020). However, in the context of recipes from influencers, studies have yet to explore the differences in used appeals between less and more healthy recipes. Therefore, the final research question of this paper aims to explore (RQ4): *To what extent does the use of rational and emotional appeals differ between more and less healthy recipes on Instagram?*

METHOD

Selection of Food Influencers and Recipes

Seven food influencers were selected based on a pilot study among Belgian emerging adults. This pilot study was part of a cross-sectional survey called the Corona Cooking Survey conducted between April 17th and June 25th, 2020(De Backer & Jacobstraat). In total, *N*=556 emerging adults participated in the pilot study. They consisted mainly of women (89.2%) with a mean age of 22.92 (*SD*= 1.83) and were mostly (80.1%) higher educated (Bachelor's degree or higher). If they had one, emerging adults were asked to list their top food-related influential persona before and since the first COVID-19 lockdown in Belgium (which started on March 18th, 2020). From the given answers ($n_{\text{before COVID-19}}$= 316 and $n_{\text{sinceCOVID-19}}$= 286), we excluded organizations (i.e., supermarkets and brands) and food influencers that did not actively share recipes on Instagram. We selected the seven most often mentioned food influencers before and since COVID-19. The seven influencers that were most often mentioned ranged from mega (>1 million followers) to micro (10.000 - 100.000 followers) influencers (Campbell & Farrell, 2020), both national and international individuals.

During seven weeks between February 15th, 2021, and April 4th, 2021, the posts of the selected food influencers were coded. Only the posts with step-by-step explained recipes or references to recipes (i.e., the full recipe is available on the food influencer's blog) were included. Table 16 presents an overview of the selected food influencers and the number of posted recipes during the study period.

Table 16. Representation of Selected Food Influencers

Food influencer	Followers on Instagram	Country of origin	Number of posts about recipes	Number of main course recipes
Celien Rombouts (@Healthyhabits.Celien)	102 000	Belgium	10	9
Chloe Lauwers (@Chloekookt)	74 000	Belgium	8	8
Ellen Van Gool (@Kokerellen)	34 700	Belgium	35	35
Jamie Oliver (@Jamieoliver)	9.2 mil	UK	51	93

Table 16. Representation of Selected Food Influencers (continued)

Food influencer	Followers on Instagram	Country of origin	Number of posts about recipes	Number of main course recipes
Sandra Bekkari (@Sandrabekkari)	131 000	Belgium	7	8
Sofie Dumont (@Sofiedumontchef)	126 000	Belgium	42	42
Yotam Ottolenghi (@Ottolenghi)	2.1 mil	Israel & UK	13	21

[a] the number of recipes posted between the 15th of February 2021 and the 4th of April 2021

Coding Instrument

References to Food Literacy

The references to food literacy aspects in food influencers' recipe posts were analyzed via an in-house developed systematic coding tool. First, the various definitions of food literacy and their underlying components were identified in the literature (Begley et al., 2019; Boedt et al., 2021; Slater et al., 2018; Vidgen & Gallegos, 2014). Based on these studies, we created a coding tool of 34 items covering various food literacy elements: planning and managing, selecting, preparing, eating, and evaluating information (Table 17). To ensure content validity, two experts in health and nutrition were recruited and asked to review the developed coding tool to assess whether it comprehensively encompassed all pertinent dimensions of food literacy.

Nutritional Content of Included Recipes

The nutritional content of the recipes was calculated using the Nubel Meal Planning 2020 database (Nubel, 2020). If the nutrient content of a recipe's ingredient was unavailable in the Nubel Meal Planning 2020 database, the ingredients were manually added using the product package information or via the open-access Dutch Nutrient Database (Nederlands Voedingsstoffenbestand (NEVO),(2021)). For each recipe, the total energy (kcal), fat (g), saturated fatty acids (g), carbohydrates (g), sugar (i.e., mono and disaccharides) (g), fiber (g), protein (g), and salt (g) were calculated. Next to the nutrient criteria, the presence of specific food groups was also evaluated, namely the amount of fruit and vegetables (g) (including fresh, frozen, and canned fruits and vegetables), the number of starchy carbohydrates portions (i.e., potatoes, bread, rice, pasta, and cereals), and the number of protein or dairy foods portions (i.e., meat, fish, egg, beans, and other non-dairy sources of

protein) (Benelam & Stanner, 2015). The nutritional variables are presented according to the recipe's suggested portion size (i.e., number of servings). Raw ingredients were used for the analyses, and optional ingredients and garnishes were excluded. When recipes had not specified the required amount of an ingredient, the ingredient was excluded. Except for salt, pepper, oils, and fats with no specific amounts, a standard amount of a pinch (0.4g) of salt and pepper or one tablespoon (10g) for oil and fats was used. All fluids, such as milk, oil, and butter, were converted to grams for standardization.

The recipes were evaluated against the nutrient criteria developed for a main meal by Benelam and Stanner (2015), presented in Table 18. These criteria are based on the UK Food Standards Agency (FSA) guidelines and have been successful in evaluating the nutrient content of recipes (Ngqangashe et al., 2018). The nutrient criteria apply for a single main meal (lunch or evening) for adults that assume that a main meal provides approximately 30% of daily energy and nutrient requirements (Benelam & Stanner, 2015). Therefore, desserts, snacks, beverages, and other not main meal dishes were excluded from the comparative analyses.

Emotional and Rational Appeals

Previous studies have developed coding instruments to identify emotional and rational appeals in food advertisements (Hebden et al., 2011; Page & Brewster, 2007). However, no such instrument has been developed to observe appeals in recipes. To address this gap, we used and refined the coding tool proposed by Hebden et al. (2011). We evaluated their suggested appeals and included only those that applied to a recipe context. Following the coding instrument from Hebden et al. (2011), we categorized emotional appeals as those that focus on psychological, social, and symbolic needs, including fun/happiness, hunger/thirst satisfaction, coolness/hipness, romance, celebration, and familiarity. We categorized rational appeals as those highlighting functional recipe benefits, including convenience, economy, palatability, quality/best, novelty/uniqueness, health, and culture. Table 21 provides an overview and descriptions of the included rational and emotional appeals.

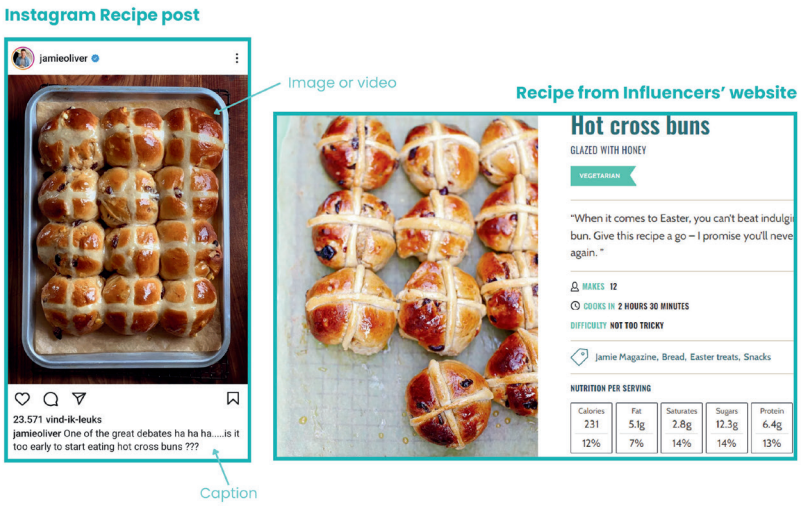
Coding Procedure

First, the coding process for food literacy references and appeals was carried out by a single researcher across all Instagram recipe posts. To ensure consistency, the Qualtrics software was employed for the operationalization of the coding tool in detecting references to food literacy and recognizing rational or emotional appeals. The coding captured the presence (1) or absence (0) of these elements, either within the caption or within the visual components (images or videos) of the Instagram posts. Coding reliability was evaluated using Cohen's Kappa statistic. A randomly selected subset comprising 10% of the complete dataset was independently coded by two separate coders. The Cohen's Kappa yielded a value ranging from 0.83 to 1

for the food literacy references and between 0.77 to 1 for the rational and emotional appeals; these values indicated an almost perfect level of agreement achieved for both food literacy references and emotional/rational aspects.

Second, the nutritional analysis of the recipes was executed by two registered dietitians. We included and analyzed both the recipes fully explained in the Instagram post and the posts, which included a reference to the recipe accessible on the influencer's website. If one Instagram post consisted of multiple recipes, all included recipes were nutritionally evaluated. An example of a coded Instagram recipe post along with an indication of the coded elements is displayed in Figure 9.

Figure 9. Example of Elements Coded from Instagram Recipe Posts



Statistical Analysis

Statistical analyses were conducted using SPSS version 26. Descriptive statistics were performed to explore the presence of references to food literacy components and the persuasive rational and emotional appeals. For the nutritional analysis of the recipes, we first checked the assumptions of normality using the Shapiro-Wilk test, which was violated. Therefore, non-parametric tests (i.e., Mann-Whitney-U and Kruskal-Wallis) were performed to compare the nutrient value of the recipe according to the main protein source (i.e., meat, seafood, vegetarian). Additionally, for each nutrient, a categorical variable was created to indicate whether the nutritional value of a recipe meets the nutrient criteria for a main meal from Benelam and Stanner (2015). Descriptive statistics were calculated to investigate to which extent the main course recipes met the nutrient criteria. Additionally, chi-squared tests were used to compare the recipes that met the recommendations between their main protein source. The threshold for significance was p=0.05

and was adjusted for the comparison analyses using the Bonferroni correction (0.05/3 = p<0.02) to avoid Type I error rate due to multi-testing (Field, 2013).

To explore if the rational and emotional appeals were related to the nutritional value of the recipes, we performed chi-square tests among the Instagram posts that contained only one recipe. To perform this analysis, we divided the recipes into two groups: those that met a maximum of six (i.e., a lower amount of criteria) of the eleven criteria and those that met at least seven (i.e., a higher amount of criteria). Finally, although the scope of the paper is not to compare the different influencers, we performed additional chi-square tests to compare the results between the food influencers to avoid the non-independence of observations and incorrect conclusions because a single influencer could drive the results.

RESULTS

In total, the seven food influencers published 166 recipe posts on Instagram, which included 220 recipes. In one single recipe post, a minimum of one to a maximum of eight recipes were included (*M = 1.38, SD = 1.14)*. From the 166 Instagram posts, 40 (24.1%) were fully explained recipes in the post itself, 111 (66.9%) were promotions for a recipe and included a reference to the recipe accessible on an external website, and 15 (9.0%) recipes included both. All posts included a caption, 45 (27.1%) a video, 117 (70.5%) an image, and 4 (2.4%) both an image and video.

References to Food Literacy

In 71 (42.8%) of the 166 messages, no reference to any food literacy aspect was observed. The other 95 (57.2%) messages contained a minimum of one (34.3%) to a maximum of eight (0.6%) food literacy references. The number of references to food literacy aspects was similar according to the food influencer, χ^2 (48) = 60.2, p=0.1. Although the references to food literacy remain limited (Table 17), most focused on food literacy's *preparing* and *eating* components.

Table 17. Prevalence of Food Literacy Components (N=166)

Was there information provided about…		**Frequency**	**%**
Plan	how you can manage your budget to buy food?	1	0.6
	how you can plan meals ahead?	5	3.0
	how you can prepare meals ahead?	3	1.8
	how you can make a week menu?	2	1.2
	how you can make a grocery shopping list?	4	2.4
Select	how you should select foods in the supermarket?	4	2.4
	how you can judge the quality of food?	2	1.2
	the nutritional composition of foods?	2	1.2
	where the depicted foods come from?	4	2.4
	where you can buy the depicted foods?	7	4.2
	cooking/culinary jargon?	3	1.8
Prepare	how to prepare food safely?	6	3.6
	how to store food safely?	3	1.8
	cleaning procedures?	6	3.6
	how you can prepare a meal?	48	28.9
	how you can adapt the recipe?	25	15.1
	solutions when something goes wrong?	2	1.2
	how you can prepare a recipe quicker?	3	1.8
	what other (instead of the proposed) kitchen equipment/tools you can use?	4	2.4
	how to reduce food waste?	6	3.6
Eat	the importance to eat together or was their an encouragement to eat with others?	17	10.2
	how food can have an impact on personal wellbeing?	31	18.7
	how to place a meal in broader food patterns or diets?	1	0.6
	to eat sufficient/more vegetables	4	2.4
	to eat sufficient/more fruits	0	0

Table 17. Prevalence of Food Literacy Components (N=166) (continued)

Was there information provided about…		Frequency	%
	to eat sufficient/more wholegrains	2	1.2
	to eat sufficient/more nuts and seeds	0	0
	to eat sufficient/more legumes	0	0
	to eat less salt	1	0.6
	to drink sufficient/more water	0	0
Evaluating Information	where you can find nutrition information?	0	0
	what different food-related logos mean (e.g., Fairtrade logo)?	0	0
	a reference to a scientific publication	0	0
	a reference to a government website	0	0

Nutritional Value of Recipes

In the *N*=166 Instagram posts, there were 220 recipes included. From the recipes, 65% were main course meals (e.g., baked ricotta pasta and farmhouse roasted chicken), and 33% were desserts (e.g., gingerbread cheesecake and classic chocolate brownies). There were four (1.8%) recipes about other types of meals (i.e., beverages and spreads). The nutrient value of the recipes according to the meal type (i.e., main meal and desserts) can be found on OSF: https://bit.ly/3Bb3lUO. Table 18 presents the nutrient value of the main course recipes according to the recipe's main protein source (i.e., meat, seafood, vegetarian). Most (46.9%) of the main course recipes (n=143) featured meat as the main protein source, 35.7% were vegetarian, and 17.5% included seafood. Regarding the central protein source of the main course recipes, meat recipes had a higher content of saturated fatty acids (U=489, z = -3.1, p=0.01) and proteins (U=438, z = -3.5, p=0.00) than seafood recipes. Vegetarian recipes contained a significantly lower amount of proteins (U=287, z = -7.72, p=0.00), the portion of protein or dairy (U=1197, z = -2.9, p=0.01), and salt (U=1237, z = -2.6, p=0.01) compared to meat recipes. Furthermore, vegetarian recipes contained fewer proteins than seafood recipes (U=280, z = -4, p=0.00).

The main course recipes (n=136) were compared against the nutrient criteria of Benelam and Stanner (2015). Table 19 shows the percentage of all main course recipes according to their main protein source, which met the nutrient criteria. None of the recipes met all or none of the proposed nutrient criteria. Here, 49.7% of the overall recipes met six of the eleven criteria (meat recipes = 58.2%, seafood recipes = 32%, and vegetarian recipes = 47%). However, more main course recipes (50.3%) met at least seven of the eleven nutrient criteria (meat recipes = 41.8%, seafood recipes = 68%, and vegetarian recipes = 53%). Additionally, the amount

of met nutrient criteria (low: a maximum of six criteria; high: a minimum of seven criteria) significantly differed according to the food influencer, χ^2 (6) = 24.2, p=0.00. The recipes from Yotam Ottolenghi, χ^2 (1) = 12.67, p=0.00, and Sofie Dumont, χ^2 (1) = 6.45, p=0.01, met significantly a lower amount of criteria (a maximum of six criteria). Instead, the recipes from Jamie Oliver met significantly a higher amount of criteria (at least seven of the eleven criteria), χ^2 (1) = 4.41, p=0.04.

Table 20 shows the proportion of each meal type recipe that met each nutrient-specific recommendation. For the total energy (kcal), 69 (48.3%) main course recipes met the suggested criteria of a maximum of 600 kcal per serving portion. No significant difference in the proportion of meat, seafood, and vegetarian recipes that met the recommendation for total energy was found, χ^2 (2) = 1.41, p=0.49. The number of carbohydrates (min 75g) per serving was only met for 15 (10.5%) main course recipes. The recipes that met the criteria for carbohydrates did not significantly differ according to the protein source (meat, seafood, and vegetarian) of the recipe, χ^2 (2) = 2.29, p=0.32. Almost all (82.5%) main course recipes matched the protein criteria (min 17g). For the number of recipes that met the proteins criteria, a significant difference was found between meat, seafood, and vegetarian recipes, χ^2 (2) = 31.17, P<0.001. Vegetarian recipes met the recommended proteins fewer than meat, χ^2 (1) = 18.49, P<0.001. From the 143 main course recipes, 135 recipes met the criteria for sugars (max 27g). There was no significant difference between the meat, seafood, and vegetarian recipes that met the total amount of sugars, χ^2 (2) = 1.99, p=0.37. Regarding total fats, only 34.3% of main course recipes fell within the recommendations. However, no significant differences were found between meat, seafood, and vegetarian recipes χ^2 (2) = 1.96, p=0.38. Likewise, in terms of saturated fatty acids, only 31.5% of the main course recipes met the criteria, and no differences were found between meat, seafood, and vegetarian recipes χ^2 (2) = 4.32, p=0.12. The criteria for fiber (min 7.2g) was met by 35.7% of the main course recipes, and no differences were found between meat, seafood, and vegetarian recipes χ^2 (2) = 3.69, p=0.16. Most of the main course recipes (59.4%) fulfilled the criteria for salt, and there were no differences between the proportion of meat, seafood, and vegetarian recipes that met the criteria χ^2 (2) = 5.43, p=0.07. Finally, for the specific food groups, most recipes met the criteria for fruits and vegetables (67.1%), the portion of starch (76.9%), and the portion of protein or dairy (96.5%). For all the specific food groups, no differences were found between the number of recipes that met the criteria according to the protein source (meat, seafood, and vegetarian), for fruits and vegetables, χ^2 (2) = 2.73, p=0.26 for the portion of starchy carbohydrates, (2) = 0.40, p=0.82, for the portion of protein or dairy, χ^2 (2) = 9.35, p=0.03.

Table 18. Descriptive Analysis of Main Course Recipes from Food Influencers – Median (interquartile range)

	Nutrient Criteria	***Overall*** *(n=143)*	***Meat*** (*n*=67)	***Seafood*** (*n*=25)	***Vegetarian*** (*n*=51)
Serving Weight (g)	/	455 (283.5-583.1)	465.8 (264-581.6)	473 (337.7-595.9)	435.7 (312.5-588)
Total energy (kcal)	*Max 600 kcal*	606.2 (452.4-721.1)	617.3 (515.8-793.4)	611.8 (400.1-660.8)	588.9 (406.3-721.1)
Carbohydrate (g)	*Min 75g*	42.15 (23-57.4)	37.4 (27.7-55.1)	37.5 (18.7-57)	47.3 (21.1-70.2)
Protein (g)	*Min 17g*	32 (20.3-42.9)	42.5 (32.1-55.6)	32.7 (22.2-33.9)	18.7 (2.4-27.6)
Total sugars (g)	*Max 27g*	10 (6.0-16.1)	9.3 (5.6-17.4)	8.1 (5.4-13.7)	11.4 (6.5-17.6)
Total fat (g)	*Max 21g*	28.4 (17-42.5)	31.6 (19.4-47.2)	27.7 (13.2-40.3)	27.2 (16.8-45.4)
Saturated fatty acids (g)	*Max 6g*	8.5 (4.9-15.5)	11.5 (5.4-19.5)	6.2 (3.3-8)	8.8 (4.8-17.8)
Fiber (g)	*Min 7.2g*	6.1 (3.7-9.1)	6 (3.6-8.9)	4.7 (3.4-7.5)	7.0 (4.8-11.2)
Salt (g)	*Max 1.8g*	1.5 (0.8-3)	1.9 (1.1-3.5)	1.3 (0.7-2.)	1.3 (0.7-2.4)
Fruit and vegetables (g)	*Min 120g*	164.5 (90.1-273)	164.5 (80-262)	154.3 (34.3-266.2)	173.0 (114.2-311)
Starchy portion	*Min 1*	1 (1-1)	1 (0-1)	1 (1-1)	1 (1-1)
Protein or Dairy portion	*Min 1*	2 (1-3)	2 (1-3)	2 (2-3)	2 (1-2)

Table 19. Frequency of Main Course Recipes Within the Nutrient Criteria of Benelam and Stanner (2015) – N(%)

Number of nutrient criteria fulfilled	**Main Course *N*(%)**			
	Overall (*N*=143)	***Meat*** (*n*=67)	***Seafood*** (*n*=25)	***Vegetarian*** (*n*=51)
0	0	0	0	0
1	0	0	0	0
2	0	0	0	0
3	7 (4.9)	3 (4.5)	0	4 (7.8)
4	18 (12.6)	10 (14.9)	5 (20)	3 (5.9)
5	22 (15.4)	11 (16.4)	3 (12)	8 (15.7)
6	24 (16.8)	15 (22.4)	0	9 (17.6)
7	38 (26.6)	15 (22.4)	10 (40)	13 (25.5)
8	16 (11.2)	5 (7.5)	5 (20)	6 (11.8)
9	10 (7)	4 (6)	0	6 (11.8)
10	8 (5.6)	4 (6)	2 (8)	2 (3.9)
11	0	0	0	0

Table 20. Frequency of Main Course Recipes Within the Recommendations (Benelam and Stanner (2015)) Per Nutrient Or Food Group – N(%)

	Criteria	**Main Course *N*(%)**			
		Overall (*N*=143)	***Meat*** (*n*=67)	***Seafood*** (*n*=25)	***Vegetarian*** (*n*=51)
Total energy (kcal)	*Max 600 kcal*	69 (48.3)	30 (44.8)	11 (44)	28 (54.9)
Carbohydrate (g)	*Min 75g*	15 (10.5)	5 (7.5)	2 (8)	8 (15.7)
Protein (g)	*Min 17g*	118 (82.5)	65 (97)	23 (92)	30 (58.8)
Total sugars (g)	*Max 27g*	135 (94.4)	63 (94)	25 (100)	47 (92.2)
Total fat (g)	*Max 21g*	49 (34.3)	19 (28.4)	10 (40)	20 (49.2)
Saturated fatty acids (g)	*Max 6g*	45 (31.5)	17 (25.4)	12 (48)	16 (31.4)
Fiber (g)	*Min 7.2g*	51 (35.7)	22 (32.8)	6 (24)	23 (45.1)
Salt (g)	*Max 1.8g*	85 (59.4)	33 (49.3)	17 (68)	35 (68.6)
Fruit and vegetables (g)	*Min 120g*	96 (67.1)	44 (65.7)	14 (56)	38 (74.5)
Starchy portion	*Min 1*	110 (76.9)	50 (74.6)	20 (80)	40 (78.4)
Protein or Dairy portion	*Min 1*	138 (96.5)	67 (100)	25 (100)	46 (90.2)

Rational and Emotional Appeals

Almost all Instagram posts (*N*=166) featured at least one rational (83.7%) or emotional (63.9%) appeal. Only in 10 (6.1%) recipe posts was no rational or emotional appeal observed. In 93 (55.9%) of the 166 recipe posts, two or more rational appeals were included, while emotional appeals occurred in 35 (21.9%) cases. Additionally, the amount of incorporated rational, χ^2 (36) = 42.4, p=0.2, and emotional appeals, χ^2 (30) = 640.8, p=0.1, in the recipe posts did not significantly differ according to the food influencer. Table 21 shows the prevalence of rational and emotional appeals in food influencers' recipe posts. In terms of rational appeals, the most detected appeal were palatability (*taste)* (66.3%), convenience (easy) (29.5%), and quality (27.1%). Regarding emotional appeals, the three most observed emotional appeals were *hunger/thirst satisfaction* (25.3%), *familiarity* (24.1%), and *fun/happiness* (21.7%).

Table 21. Prevalence of Rational and Emotional Appeals in Influencer's Recipe Posts on Instagram (N=166)

Rational Appeals	Describe or depict the recipe as	Frequency	%
Convenience			
Easy to prepare	easy to prepare	49	29.5
Quick to prepare	quick or fast to prepare	19	11.4
Economical	value for money	0	0
Palatability			
Taste	tasting	110	66.3
Smell	smelling good	12	7.2
Quality / Best	quality, the best, nothing better	45	27.1
Novelty / Uniqueness	new, different, modern, unique	39	23.5
Health	healthy or nutritious	16	9.6
Culture	something cultural, from other countries or food cultures	16	9.6
Emotional appeals			
Fun/Happiness	"fun," "happiness," or similar expressions	36	21.7
Hunger/thirst satisfaction	Hunger, craving, or thirst relief	42	25.3
Coolness/hipness	"cool," "hip," "trendy," or similar expressions	3	1.8
Romance	romance or romantic affection	8	4.8
Celebration	celebrations or parties such as birthdays	28	16.9
Familiarity	Familiarity, such as references to grandmother's kitchen, family recipes	40	24.1

Relationship Between the Nutritional Value of Recipes and the Use of Rational and Emotional Appeals

The Instagram posts that only contained or promoted one main course recipe (*n*=86) were used to explore if the communication characteristics were related to the nutritional value of the recipes. From the included posts, 54.7% contained recipes

that met a low amount of nutrient criteria (a maximum of six criteria), and 45.3% consisted of recipes with a higher amount of met nutrient criteria. The findings of the chi-square tests (Table 22) do not show any significant relationships between the amount of met nutrient criteria and appeals.

Table 22. Relationship between the Nutritional Value of Recipes and the use of Rational and Emotional Appeals – N(%)

N=81	**Met a maximum of six nutrient criteria** (*n*=47)	**Met a minimum of seven nutrient criteria** (*n*=39)	**Chi-square tests results**
Rational and Emotional appeals			
Rational appeals	39 (45.3)	34 (39.5)	χ^2 (1) = 0.29, *P*=0.59
Easy to prepare	17 (19.8)	11 (12.8)	χ^2 (1) = 0.62, *P*=0.43
Quick to prepare	8 (9.3)	5 (5.8)	χ^2 (1) = 0.29, *P*=0.59
Economical	0 (0)	0 (0)	/
Taste	34 (39.5)	31 (36)	χ^2 (1) = 0.59, *P*=0.44
Smell	5 (5.8)	3 (3.5)	χ^2 (1) = 0.22, *P*=0.64
Quality/best	15 (17.4)	12 (14)	χ^2 (1) = 0.01, *P*=0.90
Novelty/uniqueness	9 (10.5)	12 (14)	χ^2 (1) = 1.56, *P*=0.21
Health	7 (8.1)	1 (1.2)	χ^2 (1) = 3.84, *P*=0.50
Culture	7 (8.1)	5 (5.8)	χ^2 (1) = 0.08, *P*=0.78
Emotional appeals	29 (33.7)	26 (30.2)	χ^2 (1) = 0.23, *P*=0.63
Fun/happiness	14 (16.3)	11 (12.8)	χ^2 (1) = 0.03, *P*=0.87
Hunger/thirst satisfaction	10 (11.6)	16 (18.6)	χ^2 (1) = 3.94, *P*=0.05
Coolness/hipness	1 (1.2)	1 (1.2)	χ^2 (1) = 0.02, *P*=0.89
Romance	1 (1.2)	2 (2.3)	χ^2 (1) = 0.57, *P*=0.45
Celebration	6 (7)	3 (3.5)	χ^2 (1) = 0.59, *P*=0.44
Familiarity	14 (16.3)	9 (10.5)	χ^2 (1) = 0.49, *P*=0.48

DISCUSSION

By conducting a quantitative and nutritional content analysis, this study provides valuable insights into what food influencers display in their recipes and how they communicate or promote them.

The first aim sought to understand if and which references to components of food literacy food influencers make in their recipe posts. The included food influencers of this study barely referenced food literacy aspects in the Instagram recipe posts itself. Most references focused on food literacy's preparation element: influencers explained how to prepare a recipe or replace an ingredient. Additional information, such as tips or tricks about selecting the ingredients in the store or incorporating the recipe in a meal plan, was almost not observed. One particular explanation is that we only investigated recipe-related content. However, food influencers also share other types of content (e.g., shopping hauls or "what I eat in a day videos"), which could provide more or other references to food literacy aspects. Furthermore, we found that food influencers mainly promote the recipe in their Instagram posting and refer to their external website to access the full recipe. Further research could investigate if the external website of food influencers provides more information regarding food literacy than Instagram posts. Regarding the practical implications of this study, the results points towards a unique opportunity for both food influencers and health organizations to distinguish themselves by expanding their Instagram recipe content to encompass a wide array of food literacy aspects. This expansion may include providing guidance on meal planning, ingredient selection, and various other facets related to food literacy, thereby offering their audience with more tips and tricks regarding the daily practicalities related to food.

The second aim was to investigate the nutritional content of the recipes included in the Instagram posts of the food influencers. The main course recipes were evaluated against the nutrient criteria of Benelam and Stanner (2015). Our findings demonstrate that the recipes from our sample met six of the eleven criteria on average, which suggests that the recipes from our sample do not score undesirable overall regarding UK nutrient guidelines. This finding is in contrast to previous research, which found that recipes from other media sources (e.g., social media platforms, cooking television, or websites) usually do not meet the nutritional standards (Camargo et al., 2022; Cheng et al., 2021; Ngqangashe et al., 2018; Schneider et al., 2013). However, these studies used different methods to assess the nutritional value of the recipes, and therefore results are not evident to compare (Camargo et al., 2022; Cheng et al., 2021; Howard et al., 2012; Ngqangashe et al., 2018; Schneider et al., 2013).

The included recipes were likely to exceed the criteria of total energy and total fats (including saturated fatty acids) and underdone the criteria of carbohydrates and fiber. Moreover, vegetarian recipes were most likely not to meet the criteria of proteins. In practice, food influencers can boost their recipes or, in other words, make their recipe score better if they specifically take those criteria into account. This might involve incorporating an array of carbohydrates and fiber-rich ingredients, such as whole grains, legumes, fruits, and vegetables, to align with the required nutritional standards. For vegetarian recipes, the emphasis should be on integrating protein-rich plant-based sources like tofu, tempeh, legumes, nuts, and seeds to meet the protein criteria. Health promotors and organizations should also be aware of the nutrient criteria influencers often do not meet. They could communicate to individuals how to make an influencer's recipe healthier or make efforts to communicate these insights to the influencers themselves.

Regarding the third aim, we explored if food influencers used rational and emotional appeals in their recipe Instagram posts. Rational appeals were more frequently observed than emotional appeals. This finding is congruent with previous research regarding food product advertisements on television (Page & Brewster, 2007). Most of the time, the observed Instagram posts contained two or more rational and/or emotional appeals. Future research should investigate the impact of using several rational and emotional appeals or combinations in Instagram recipe posts to investigate effective strategies.

In terms of rational appeals, the most observed appeal was *taste*. This result matches those observed in earlier studies on food product advertising (Jenkin et al., 2014; Page & Brewster, 2007). The second most found appeal was *easy to prepare*, however, this appeal was observed in less than 30% of the posts. This finding is in contrast with previous research relating to food advertisements. For instance, convenience appeals, such as *easy to prepare,* were more frequently observed than taste appeals (Hebden et al., 2011). Additionally, the rational appeal *health* was almost not present in the Instagram posts. From this finding, we can deduce that the included food influencers from this study focus on a recipe's tastiness instead of its healthiness. This finding also reflects previous research that showed that individuals mostly comment on social media recipes taste and convenience related themes instead of health-related topics (Cheng et al., 2021). Thereby suggesting that taste and convenience appeals are more important recipe characteristics for individuals than health, and therefore essential appeals to incorporate to promote recipes (Tobey et al., 2019). We therefore encourage food influencers and health organizations to apply these appeals in their messages.

Finally, the last aim explored whether the number of criteria a recipe met was related to the use of emotional or rational appeals. Contradictory to previous studies on

food advertisements (Jenkin et al., 2014) or recipes from allrecipes.com (Turnwald et al., 2022), our study found no significant relations between the recipe's met nutrient criteria and the use of emotional and rational appeals. Our sample size to conduct these analyses was rather small. Therefore, future research is necessary to investigate this relation on a larger scale. Additionally, previous research has also exposed the relationship between engagement metrics (i.e., likes and comments) and the healthiness of a recipe (Cheng et al., 2021). However, in the context of recipe posts from food influencers, no study has investigated this particular link, and it could be an additional focus for future researchers.

No instruments existed to observe the references to food literacy and the presence of rational and emotional appeals in influencers' recipes. Given this lack, we developed a coding instrument that can be a valuable starting point for other researchers. Future research could use or develop the coding instrument and further refine and validate the instruments. Furthermore, researchers could use machine learning and keyword algorithms combined with human coding to analyze large amounts of social media data.

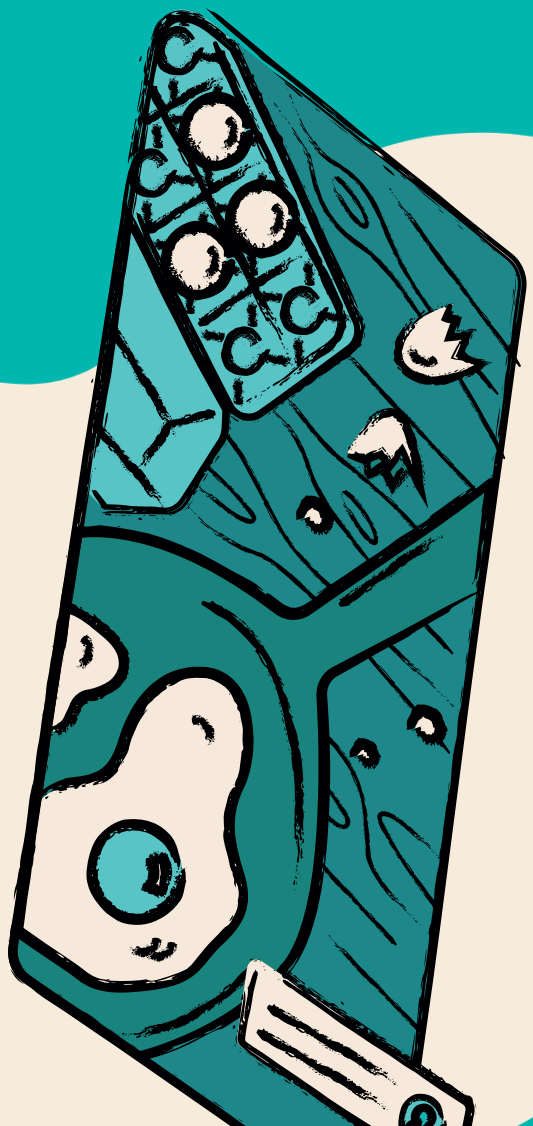
The design of our study entailed some limitations. First, the food influencers used in the current study were based on a pilot study conducted by mainly higher-educated female emerging adults. Therefore, the choice of food influencers might not be a valid representation of popular food influencers for other groups, for example, lower educated or male emerging adults. This consideration is particularly relevant given that previous research has indicated potential variations in motivations for following influencers based on factors like gender and education (Croes & Bartels, 2021). Additionally, the food influencers in this study did not focus on promoting specific diets or dietary patterns (e.g., a gluten-free diet). However, former research has indicated that some food influencers are likely to promote specific diets or eating patterns (Sabbagh et al., 2020), which may yield other results. Future research should incorporate a more diverse range of food influencers popular among different groups to explore differences in what recipes are shared and how they are promoted. Next, we investigated the Instagram posts from food influencers for seven consecutive weeks, which Kim et al. (2018) showed as a reliable way to sample social media content. However, in our case, this might not be a representative sample for a more extended period since recipes are often periodic or seasonal dependent. For example, summer recipes may be relatively lighter meals such as salads, while more savory meals with, for example, game meat products are used in the winter. Therefore, as suggested by Bouvier and Rasmussen (2022), studies should evaluate the sampling method on a case-by-case basis. In the case of online food messages, future research could consider using a constructed week sampling method (i.e., stratified sampling method based on the day of the week rather than a consecutive week sampling method. Finally, the nutritional value of the recipes

only indicates to which kind of recipes individuals are exposed and does not say anything about their actual behaviour. Individuals can alter the recipes by adding, omitting, or changing the ingredients, thereby changing the nutritional value of a recipe. Additionally, only raw ingredients were used for the nutritional analysis, so the nutritional value of the recipes does not take the preparation method or the shrinking factor (i.e., the portion of foods you use) into account.

Taken together, to our knowledge, this is the first study to focus on what influencers' recipes portray in combination with exploring how these recipes are being promoted. Combining these two aspects, this study reveals that, on the one hand, the recipes presented by food influencers met at least six of the eleven nutrient criteria for a healthy main meal. However, food influencers should provide more information regarding meal planning, selection, and consumption to stimulate food literacy. On the other hand, this study provides insights into the successful communication techniques of influencers to promote recipes, namely by focusing on the tastiness and convenience of meals. It is important for health promotors and organizations to note that social media recipes do not exist alone without being attached to how they are promoted. In light of this, Van Royen et al. (2022) urge for "*more cooperation among different stakeholders' unique expertise*". This means that influencers know how to communicate successfully towards audiences, and health promotors have the expertise concerning which health messages should be conveyed. As such, health promotors should explore ways to work together with food influencers to incorporate food literacy education into their communications

and improve the nutritional value of the recipes shared by influencers.

GENERAL DISCUSSION & CONCLUSION



The present dissertation was driven to understand the selection of and exposure to food media messages, the characteristics of these food messages, and their relation to emerging adults' food literacy. In this concluding chapter, the various findings and insights derived from the different studies will be synthesized. Next, I will discuss this dissertation's theoretical and methodological contributions, limitations, and recommendations for future research. Furthermore, the practical implications of this research relevant to different stakeholders will be acknowledged.

1 Key Findings and Reflections

1.1 Part One: Exploring emerging adults' food media experiences in relation to food literacy

In the first Part of this dissertation, the primary objective was to explore emerging adults' food media experiences in relation to food literacy. To achieve this, we explored which food media messages emerging adults encounter, their motivations for engaging with such content, and what they perceive to obtain from these messages in relation to food literacy.

Key finding 1: Emerging adults are exposed to various food media messages, and online food media messages the most

The findings of the empirical chapters of Part One showed that emerging adults come in contact with a diverse range of food media messages, spanning across traditional media types like cookbooks and television cooking shows, as well as online media types such as websites and social media platforms. However, the findings indicated a greater exposure to online food media messages compared to those from traditional sources, with a preference for online food media messages due to their technological advantages. Online food media messages leverage features like quick search capabilities, automatic generation of shopping lists, and the ability to share videos, pictures, and texts, which emerging adults particularly favored. This finding is consistent with Kirkwood's (2018), which implies that online food media messages supplement or reinvent traditional food media messages.

These technological features inherent in online food media messages enhance the efficiency and convenience of managing and performing food-related activities (Granheim et al., 2021). This convenience aspect holds particular importance for emerging adults, as it is not only a food choice motivator (Colatruglio & Slater, 2016; Kapetanaki et al., 2014; Malan et al., 2020; Marquis, 2005; Molenaar et al., 2021)but also motivates their selection of food media messages (as demonstrated in Chapters 1-3). Given the importance of convenience and the significant online presence of emerging adults (Coyne et al., 2013; Perrin, 2015; Vandendriessche et al., 2021), future research should prioritize the exploration of online food media messages, aligning with the emerging field of digital food studies (Contois & Kish, 2022; Leer & Krogager,

2021; Lewis, 2020a), which underscores the growing significance of studying the intersection of this combined field of food and digital media studies.

***Key finding 2*: Emerging adults intentionally and incidentally come into contact with food media messages**

Across the first three empirical chapters, the findings systematically showed that emerging adults encounter food media messages both *intentionally* and *incidentally*. This finding of intentional and incidental exposure to food media messages is in accordance with Ngqangashe et al. (2021), who found the same among adolescents.

This duality may lie in the fact that, on the one hand, emerging adults sometimes have specific motivations (GS) to actively seek out food media messages, such as finding quick and easy recipes *(Key finding 3)*. On the other hand, emerging adults may also have non-specific predetermined motivations to consume food media, stumbling upon these messages, and their decision to consume these messages becomes more spontaneous and responsive to the immediate context *(Key finding 4)*. This finding highlights the importance of the applied GS-GO distinction adopted in the current dissertation, as audiences are active in varying degrees (Rubin, 1993; Thorson & Wells, 2016) and may not have predetermined GS towards food media messages. As such, the GS-GO distinction adopted in the current dissertation allows for a nuanced conceptualization of active audiences in varying degrees and where gratifications related to food media messages can be obtained without initially seeking them. This conceptualization enriches existing U&G research, highlighting future research to empirically distinguish GS and GO, which offers a more thorough understanding of the range of active ways in which audiences can interact with media messages.

Nevertheless, with regard to online food media content exposure, these two forms of exposure may not be mutually exclusive but rather intertwined in a feedback loop (Cooper & Tang, 2009; Park & Lee, 2023; Thorson, 2020). For instance, as Thorson (2020) highlights in the context of news consumption, intentional news-seeking behavior and the news-seeking behavior of people's friends/followers can lead to subsequent incidental encounters with news (driven by algorithms), creating a feedback loop where more intentional engagement with news on a platform results in more incidental exposure. In the context of food media messages, this means that emerging adults' past media behavior, actively searching food media messages, is used to shape the array of content made visible in the future, which means more exposure to food media messages. Future research in the domain of food communication should carefully consider and further investigate the intertwined processes of intentional and incidental exposure to food media messages and

strive for theoretical and empirical integration within media exposure frameworks to enhance our understanding of media behavior.

Key finding 3: During intentional exposure to food media messages, emerging adults seek both content-related and affordance-related gratifications

The findings of Part One show that emerging adults actively seek both content-related and affordance-related gratifications in food media messages. Regarding content-related motivations, the findings indicate that emerging adults engage with food media messages for diverse reasons associated with information and entertainment. This suggests that their consumption of food media messages is not solely driven by an intentional search for information; rather, they also seek to find entertainment and relaxation benefits. This discovery underscores the importance for future intervention studies to adopt an entertainment-education approach (Moyer-Gusé, 2008; Singhal et al., 2003). Namely, it may be beneficial to use a strategy where food literacy information is woven into an entertaining food media message in order to promote food literacy among emerging adults who might not actively seek information in food media messages. Building on the insights from Chapter One, this could involve incorporating elements of humor, food porn, and employing a favorable food personality.

When emerging adults are looking for information in food media messages, information about cooking convenience emerges as the most sought-after gratification (Chapter 3). This indicates that emerging adults have a strong inclination towards quick and easy recipes and cooking tips. Such a preference aligns with the life phase of emerging adults, who frequently face time-related barriers (Colatruglio & Slater, 2016; Kapetanaki et al., 2014; Malan et al., 2020), lack of food preparation knowledge and skills (Byrd-Bredbenner, 2004; Kapetanaki et al., 2014; Surgenor et al., 2017), financial limitations (Arnett, 2014), and limited access to cooking materials (Malan et al., 2020), making convenience a prominent factor guiding their food choices (Colatruglio & Slater, 2016; Kapetanaki et al., 2014; Malan et al., 2020; Marquis, 2005; Molenaar et al., 2021). Moreover, Chapter One expands this knowledge, showing that convenience is also an important affordance-related gratification for seeking out specific food media messages. For instance, functions like search options, saving tools, automatic grocery lists, and filtering tools were important reasons to search for online food media messages, particularly when seeking recipes and food-related information. The research conducted by Ngqangashe et al. (2018) also found that online food media messages were most used for information and inspiration motives among adolescents. Our study suggests that one possible explanation for this lies in the convenient characteristics offered by online food media messages. Furthermore, previous research has found convenience to be a strong motivator for continuance intention with media (Gallego et al., 2016; Gan & Li, 2018).

As such, the findings underscore the pivotal role of convenience in the lives of emerging adults, influencing both their food and media preferences. Therefore, it is crucial to consider the role of convenience in subsequent research in various disciplines. For intervention studies, it is important to ensure that both the media (e.g., saving tools, filter options, and easy to comprehend) and food literacy (e.g., quick and easy recipes, budget-friendly ingredients, and time-saving meal planning tips) aspects are perceived as convenient among the target group. Additionally, for researchers in the domain of food communication studies, it is important to recognize that convenience can be a significant media motivator, necessitating further investigation into whether and how convenience may serve as a key predictor for the intention to continue using food media messages.

Furthermore, it highlights the interconnected nature of content- and affordance-related gratifications. For instance, an emerging adult seeking quick meal preparation ideas (cooking convenience gratification) may opt for a recipe website due to its user-friendly features that offer clear and easily followable recipe steps (affordance-related gratification). Rather than viewing these two types of gratifications as separate entities (Rathnayake & Winter, 2018; Sundar & Limperos, 2013), our findings suggest that emerging adults often experience both simultaneously. This integration of content and affordance-driven gratifications provides a nuanced understanding of how emerging adults engage with food media messages across various media channels.

Key finding 4*: *The role of visual appeal and peer recommendations in incidental exposure to food media messages

When it comes to emerging adults' incidental exposure to food media messages, the findings of Part One indicate that such exposure typically occurs through structural elements (e.g., feeds-based algorithms) or through peers and family members. This aligns with prior research, which has highlighted that exposure to media content is the result of a complex interplay between various factors, including social contacts and algorithms (Cooper & Tang, 2009; Thorson, 2020; Thorson & Wells, 2016).

The results of Chapter One help to explain why emerging adults pay attention to food media messages while "*scrolling down.*" One of the reasons is due to the visually appealing presentations and engaging content of food media messages. This finding corroborates previous research that has indicated that the aesthetic appeal and specific visual cues in food media messages may determine the popularity of a message, along with affecting perceptions, attitudes, and behavioral outcomes (Peng & Jemmott, 2018; Vermeir & Roose, 2020). Moreover, following the assumptions of the healthy food promotion model, integrating these food cues is especially important for the promotion of healthy foods and food literacy-promoting

behaviors (Folkvord & Hermans, 2020). Altogether, this highlights the importance of prioritizing visually appealing and engaging food media messages. However, it is crucial for future research to delve deeper into understanding how various other factors tied to the source (such as source credibility cues), content (like photo/video perspective), social cues (including the number of likes), and personal traits impact and potentially interact in shaping the engagement with incidentally encountered food media messages.

However, Chapter One also sheds light on the role of emerging adults' existing food preferences in paying attention to food media messages. On the one hand, the findings of Chapter One show that existing food preferences needed to align with the depicted food media message if they wanted to consume it. This discovery aligns with established theories on selective exposure, such as the Selective Exposure Self- and Affect Management Model (Wilson et al., 2019). The model emphasizes that exposure to messages that fit with one's existing food preferences and behaviors can reinforce those preferences and food intake behaviors. Therefore, caution is warranted for emerging adults exhibiting non-supportive food behaviors, as they may be susceptible to spiraling further into negative patterns. This finding again emphasizes the importance of understanding the interplay between intentional and incidental exposure, particularly regarding potential implications for health promotion and the reinforcement of existing behaviors. On the other hand, we also found in Chapter One that entertainment and curiosity could overpower individual food preferences, again highlighting the importance of further researching the possibilities of entertainment-education strategies.

Furthermore, Chapter One also showed the important role peers play in getting emerging adults exposed to food media messages. Emerging adults mentioned being either tagged or sent interesting food media messages by their peers, aligning with prior research on children and adolescents who also share food media messages and experiences with peers (Ngqangashe et al., 2021; Rageliené & Grønhøj, 2021). This discovery underscores the crucial influence peers have in facilitating exposure to food-related media messages among emerging adults. As peer influence is significant during the developmental stage of emerging adulthood, with individuals seeking to conform to their peers' expectations and gain approval, peers' social norms can also affect emerging adults' dietary behaviors (Pelletier et al., 2014). This implies that the food media messages forwarded by peer adults hold intrinsic value, offering insights into their peers' preferences and priorities, which could reflect and impact emerging adults' food-related behaviors. While sharing food media messages through peers presents an opportunity to enhance food literacy, caution is needed, as messages portraying undesirable behaviors could have reverse effects. Future research should examine whether peer-generated

or -forwarded food literacy-promoting media messages are more successful in fostering food literacy and healthy eating habits.

Key finding 5: Exposure to food media messages (key findings 1-4) is perceived by emerging adults to boost or boycott their food literacy

The findings from the first Part also shed light on what emerging adults perceive to obtain from consuming food media messages. Notably, we discovered that emerging adults derive both information and entertainment- or diversion-related gratifications from consuming food media messages. This duality in gratifications holds significance in the context of food literacy, as it can both contribute to its enhancement among emerging adults and also lead to barriers.

On the one hand, the findings show that emerging adults perceive certain gratifications contributing to food literacy development. Firstly, we found in Chapter Three that emerging adults perceive to obtain information-related gratifications related to food cultures, food and health, and cooking convenience. These perceived information-related gratifications have the potential to cascade into various aspects of food literacy, specifically influencing meal selection, preparation, and consumption. For instance, discovering recipes from different food cultures through food media messages can lead to selecting diverse and culturally rich ingredients for meal composition. These findings align with Chapter One, where it became evident that existing food media messages were perceived to positively influence food literacy, especially in terms of selecting, preparing, and consuming meals. However, findings from Chapter Three indicate that emerging adults are still not finding enough information about cooking convenience despite their strong desire for it, revealing a significant discrepancy and emphasizing the opportunity to better cater to this need.

Secondly, the findings of Chapter Three also indicated that emerging adults obtain entertainment- or diversion-related gratifications from consuming food media messages, such as food porn, body gazing, and entertainment and relaxation. While these gratifications may not immediately appear to directly contribute to enhancing food literacy, they underscore the importance of incorporating entertainment aspects into food media messages that promote food literacy. Drawing upon the literature on narrative transportation and entertainment-education (Moyer-Gusé, 2008; Singhal et al., 2003), it can be expected that when individuals perceive themselves as being entertained, engage in gazing at appealing food and personalities, or develop a liking for characters in food media messages, the viewer becomes more deeply immersed into the content. This immersion can lead to reduced resistance, counterargumentation, and selective avoidance, ultimately resulting in a greater impact (Mertens & Beuckels, 2023; Moyer-Gusé, 2008). In essence, this suggests that messages infused with entertainment can foster more

consistent adoption of behaviors and attitudes related to the story being conveyed (Mertens & Beuckels, 2023; Moyer-Gusé, 2008), thereby promoting food literacy.

On the other hand, food media messages were also perceived to act as a barrier to promoting food literacy. The ubiquitous nature of food media messages was also perceived to overwhelm emerging adults with an overload of information, leaving them feeling confused and uncertain about which information to trust and follow. This finding supports the idea that food media messages can be overwhelming and, consequently, confusing, as highlighted by previous research (Malan et al., 2020). Furthermore, these messages were sometimes seen as distractions that led to making poor food choices. These findings highlight the importance of fostering food media literacy components to empower emerging adults in navigating and critically evaluating the information they encounter.

Taken together, these findings show the dual nature of food media messages when it comes to promoting food literacy among emerging adults. However, the findings demonstrate the importance of not merely assessing food media messages from the perspective of negative impacts but also recognizing the potential opportunities it can offer. Nonetheless, the extent of both positive and negative influences also significantly depends on the content itself. When food media messages convey conflicting opinions or unhealthy portrayals of food, they can have detrimental effects on the promotion of food literacy. Conversely, when food media messages present content that promotes food literacy, it can yield beneficial effects. Therefore, it is imperative not only to examine the perceptions of emerging adults but also to scrutinize the content depicted in food media messages, as explored in Part Two.

1.2 Part Two: Analyzing food media messages

The second Part of the current dissertation focused on a comprehensive analysis of popular food media messages among emerging adults. Drawing insights from Chapter One, it became apparent that emerging adults are exposed to a wide range of food media messages, encompassing diverse senders, content types, and media platforms. At the time of conducting the research, online food media messages, particularly from Instagram, were prominent in their exposure. Among the various sources of influence, food personalities and influencers emerged as significant motivators, effectively influencing emerging adults' food media consumption. As expressed by participants in Chapter One, the admiration for the distinct and appealing characteristics of these figures in their food-related messages encouraged further exploration. Hence, to gain a deeper understanding of food media messages, the focus of the studies (Chapters Four & Five) performed in Part Two was narrowed down to food media messages on Instagram from food influencers, which resulted in several key findings.

Key finding 6: The recipes of the studied food influencers barely provided any information on food literacy aspects

In Chapter Five, the findings showed that the recipes shared among a selection of seven popular food influencers barely provided any information regarding diverse food literacy aspects. When food literacy references were made, food influencers primarily focused on the *preparation* element of food literacy, such as mentioning a few steps of the recipe or suggesting ingredient alternatives. This finding is also in line with the perceptions of emerging adults, where the findings of the First Part showed that emerging adults were most likely to obtain information regarding the cooking element of food literacy. This finding underscores the need for greater emphasis on diverse food literacy aspects in the recipes shared by food influencers, a trend that has also been highlighted in previous research (Barrett & Feng, 2020; Melville et al., 2023; Morrison & Young, 2019; Qutteina, Smits, et al., 2022).

This specific finding may be attributed to the fact that we only investigated recipe-related content. However, food influencers also share other types of content (e.g., shopping hauls or "what I eat in a day videos"), which could provide more or other references to food literacy aspects. Furthermore, we found that food influencers mainly promote the recipe in their Instagram posting and refer to their external website to access the full recipe. Further research could investigate if external websites or other types of content from food influencers provide more information regarding food literacy than Instagram posts.

Another reason for the lack of emphasis on certain food literacy aspects in influencers' recipe posts may be attributed to the perception that some of these behaviors are considered more intuitive or self-evident. For instance, influencers may practice the principle of washing hands before meal preparation and apply it instinctively and, therefore, may not consider it to explicitly highlight it in their Instagram posts. In turn, this also may imply that although an Instagram recipe post does not consist of explicit food literacy references, such as washing hands before meal preparation, people can still be prompted to perform specific behaviors. However, while washing hands before preparing a meal might also be evident for some people, probably individuals with higher food literacy, it could potentially be overlooked by those with lower food literacy levels. As such, for groups with lower food literacy levels, it can be essential to explicitly promote specific food literacy behaviors that can be considered more self-evident for others. Additionally, future research could delve deeper into the construction of recipe messages or other food media content practices of food influencers. For instance, conducting qualitative interviews with food influencers can offer insights into their strategies for creating food-related content and their decision-making processes regarding the inclusion of various food literacy elements, including the exploration of underlying reasons,

such as potential limitations in their knowledge regarding the importance of various food literacy aspects.

Key finding 7: The included food influencers presented meals that score on average 6 out of 11 on the nutrient criteria for a healthy meal

Furthermore, the findings of Chapter Five revealed that the main course meal recipes of the included food influencers scored, on average, 6 out of 11 on the nutrient criteria for a healthy meal. Even though there is still much room for improvement, these results appear more positive compared to earlier studies that showed that recipes from food celebrities often perform extremely poorly in terms of nutritional value (Camargo et al., 2022; Cheng et al., 2021; Ngqangashe, De Backer, Matthys, et al., 2018; Schneider et al., 2013). This positive pattern is also observed in recipes from cookbooks, where an improvement in alignment with nutritional guidelines has been noted from recipes from 2008 to 2018, with reduced fat content and increased carbohydrates and fiber (Proesmans, 2023). However, despite this positive trend, the results from Chapter Five do indicate that food influencers still fall short in certain crucial elements. Specifically, they tend to exceed the recommended levels of total energy and fats while lacking in fiber and carbohydrates. Therefore, it is evident that despite some progress, there are still significant deficiencies in meeting these nutritional criteria among food influencers' recipes, which highlights the need for continued efforts to address these shortcomings and take appropriate actions. One particular reason for these deficiencies in influencers' recipes may be likely because food influencers frequently lack the necessary nutritional credentials. Therefore, it is reasonable to assume that their understanding of what constitutes a nutritionally sufficient meal may be limited. In light of this argumentation, it would be interesting to conduct further research into how food influencers develop their recipes, where they draw their inspiration from, whether they are cognizant of any nutritional gaps in their recipes, and their motivations for incorporating or neglecting nutritional criteria in their recipes.

Key finding 8: How food influencers promoted their recipes was predominantly as "tasty" and "convenient to prepare."

Chapter Five revealed that the studied food influencers most often promoted their recipes as tasty and convenient (quick and/or easy) to prepare. While these two aspects, taste and convenience, have previously been recognized in food advertising messages (Hebden et al., 2011; Molenaar et al., 2021; Page & Brewster, 2007), this discovery underscores their specific utilization in the promotion of recipes on Instagram. These two cues were also observed in the findings of the First Part of the dissertation. Taste was occasionally identified as an influential factor in determining whether they would consume the encountered food media messages, and convenience was also identified as a motivator for food and (food) media choices (e.g., online recipes). These findings emphasize the importance of taste and

convenience for emerging adults and further illustrate this duality in the Second Part of the dissertation, which highlights how food influencers strategically capitalize on these themes, accentuating them in their Instagram recipes. These findings are in line with previous research that has, in the context of food advertising, underscored that emerging adults are highly receptive to messages that highlight the appeal of taste and convenience (Molenaar et al., 2021) because these cues closely align with the core values of emerging adults. Furthermore, research has found that combining taste and convenience cues in dessert recipe videos best stimulates intentions to purchase, prepare, and engage on social media (Decorte et al., 2023). To conclude, both taste and convenience cues are, therefore, important to consider when promoting food literacy through food media messages, especially among emerging adults. However, future research is necessary to explore how these cues can be effectively incorporated into food literacy-supporting media.

Key finding 9*: *Influencer characteristics and communication exhibit benefits for food literacy interventions

Taking these abovementioned key findings of Part Two together, it becomes evident that the social media recipe posts of the featured food influencers still have room for improvement in terms of promoting food literacy and enhancing the nutritional value of their recipes. However, despite this identified potential for enhancement in the realm of food literacy promotion through influencer content, the characteristics of food influencers, along with their employed communication, exhibit congruence with techniques and strategies elucidated within the domain of health promotion theories, indicating the potential efficacy of influencers as senders of food literacy promoting food media messages.

Firstly, Chapter Four's literature overview showed that previous research observed different message design principles in influencers' messages. These specific principles, most often researched from a marketing or strategic communication perspective, actually may not be significantly different from behavioral change techniques (BCTs), as employed among health promotors, despite being labeled differently. Namely, the case study performed in Chapter Four found that BCTs were also perceptible in the content shared by food influencers on Instagram, with an average of four BCTs per post. But if we take a closer look at which BCTs were observed, we can challenge if these BCTs are different by previously identified influencer message principles. For instance, the two most recurrent BCTs observed were "Provide information about others' approval" and "Instructions on how to perform the behavior," and these align with how the influencer (marketing) literature may describe influencers' use of personal narratives to showcase expertise, create an authentic identity, and build intimate bonds with their followers, giving an impression of approachability (Hudders et al., 2021; Leung et al., 2022). These findings thus challenge the notion that BCTs and the message design principles

of influencers are distinct practices. Furthermore, these findings also add to the ongoing conversation about the utilization of influencers in health promotion. Previously, the use of influencers in health promotion was regarded as a promising behavioral change technique by bringing a health-promoting message via a credible and influential source (Lim et al., 2020; Lutkenhaus et al., 2019; Presseau et al., 2015). Moreover, collaborating with influencers has also been previously highlighted with opportunities like targeting benefits, positioning benefits, creativity benefits, and trust benefits (Leung et al., 2022; Lutkenhaus et al., 2019). Within the context of using influencers for health promotion, Chapter Four findings imply that influencer content strategies can be seen as similar to certain BCTs, enhancing their ability to influence health promotion efforts.

Secondly, the literature overview in Chapter Four revealed several important characteristics of food influencers, such as their ability to build intimate connections with their followers, their positioning as attractive, credible, and authentic figures, and their use of narrative storytelling. These characteristics of influencers, which frequently facilitate the effective transmission of specific messages, bear similarities to the traits (i.e., narrative involvement, (wishful) identification, similarity, parasocial interaction, and liking) that, according to an entertainment-education approach, can make a person a successful entertainment educator (Mertens & Beuckels, 2023; Moyer-Gusé, 2008). Therefore, it is possible for influencers to serve as effective entertainment educators, amplifying the persuasive impact of food-related media messages that promote food literacy while minimizing reactance. Previous research, particularly in the context of mom influencers promoting breastfeeding, has also highlighted this perspective (Mertens & Beuckels, 2023). Therefore, an entertainment-education framework could serve as a valuable tool for examining the underlying processes through which food influencers can be harnessed to reduce reactance and bolster food literacy among emerging adults. Further research is warranted to delve deeper into these specific aspects.

2 Theoretical and Methodological Contributions

In addition to the specific contributions outlined in each key finding, there are some overarching theoretical and methodological contributions relevant to different research disciplines.

Firstly, the findings of the First and Second Parts of this dissertation serve as important formative research for the development and implementation of food literacy interventions utilizing food media messages among emerging adults. This is particularly important to the design and implementation of a successful media campaign and has often not been considered in previous intervention studies (Noar, 2006; Willoughby & Noar, 2022). The current dissertation employed a uses and gratifications (U&G) theoretical framework to examine food media

exposure, GS, GO, and food message characteristics, which can be considered as a valuable part of formative research for food literacy interventions via food media messages. Moreover, this framework specifically addressed both the audiences' and the media perspectives. Integrating both aspects is a necessary approach (De Vreese et al., 2017; De Vreese & Neijens, 2016; Slater, 2016), especially as the findings of these different aspects have revealed similarities. For example, the importance of cooking convenience, recognized as a motivation, is also a specific appeal frequently highlighted in food influencers' recipes. This highlights the relevance of adopting a framework that acknowledges the interplay between audience and media perspectives. As such, the adopted theoretical framework in this dissertation can be useful for future researchers conducting studies on food media intervention campaigns to investigate various aspects as part of formative research, such as food media message preferences, motivations, and existing food media message characteristics. Moreover, the application of this theoretical framework is also relevant to food and (health) communication scholars to understand the role of food media selection *(uses and gratifications)* in people's broader media consumption process and its effects.

Secondly, the development and validation of the FMCG Scale (Chapter Two) address a gap in the literature as there was not yet a developed and validated quantitative measure to assess food media content gratifications across media and content types. Moreover, as the FMCG Scale acknowledges the varying levels of audience activity in consuming food media messages, the scale offers a more realistic representation of contemporary media use, where a significant portion of media consumption is habitual or less intentional (Ruggiero, 2000; Sundar & Limperos, 2013; Vraga et al., 2019),

The scale development and validation process followed three phases: item development, scale development, and scale evaluation, adhering to best practices proposed by Boateng et al. (2018) and Carpenter (2018). Combining these two frameworks, which stem from broader health, social, and behavioral research (Boateng et al., 2018) and communication studies (Carpenter, 2018), this methodological framework strengthens the development, reliability, and validity of future instruments in the field of communication studies, particularly those related to U&G.

As Chapter Two's findings demonstrate, the FMCG Scale is not only sufficient to use among a sample of emerging adults but also across different age groups and genders. Moreover, the FMCG Scale's conceptualization offers future researchers the flexibility to use the scale in its entirety or selectively, depending on the specific needs of their research. Whether it is a focus on GS, GO, or a combination of both, and whether researchers wish to consider all factors or specific ones, this

adaptability greatly enhances the scale's utility and applicability across various research contexts. Decorte et al. (2023) exemplified the scale's adaptability in their study on taste and convenience cues in recipe videos. Notably, they excluded the factors *body gazing* and *social food connections & identity*, considering the absence of individuals and social interactions in the video. For researchers in the domain of food and communication studies, the FMCG Scale can be employed to delve deeper into the discrepancies within food media content and to explore the consequences of both under- and over-gratification of food media content on subsequent media use and its effects. Furthermore, the FMCG Scale can also serve as a measurement tool to collect formative research insights into the GS and GO from food media messages, which is relevant for the development of food literacy or other health interventions using food media messages. By identifying and addressing the discrepancies between what individuals seek in food media messages and what they actually obtain, interventions can be tailored to cater to the specific needs and preferences of the target audience.

Thirdly, another contribution of this dissertation is the development of the codebooks in Chapter Five. No instruments existed to observe the references to food literacy and the presence of rational and emotional appeals in influencers' recipes. Given this lack, we developed a coding instrument that can be a valuable starting point for other researchers. Researchers working in the field of food and nutrition can use the codebook of references to food literacy as a unique tool to determine which aspects of food literacy are present and to what extent in different media content. This tool includes other aspects of food literacy in addition to food safety, which makes it a valuable addition to studies (e.g., Barrett & Feng, 2020; Geppert et al., 2019; Melville et al., 2023) that have specifically looked at food safety practices in food media messages. Regarding the codebook of rational and emotional appeals, the development of the codebook for rational and emotional appeals in the context of recipes represents a valuable methodological contribution to the field of advertising and food communication. While this codebook drew inspiration from existing frameworks designed for identifying emotional and rational appeals in food advertisements, it stands as a unique adaptation tailored specifically to the domain of recipe-related content. Extending the applicability of this codebook beyond traditional food advertisements to the realm of recipes contributes to a better understanding of the appeals in recipe-related content on social media. Future research could use, refine, and validate the codebook and apply it to recipe-related content from other media types, such as recipes from recipe websites or cookbooks. For instance, the codebook can be employed as a follow-up investigation to the study by Proesmans et al. (2023), where it can be utilized to quantitatively examine a large number of recipes from cookbooks, focusing on the presence of rational and emotional appeals.

Finally, for researchers involved in conducting research among emerging adults, the findings of this dissertation also entail methodological implications in recruiting emerging adults, especially emerging adults with lower socio-economic backgrounds. In Chapter One, we aimed to recruit emerging adults with both higher and lower socio-economic backgrounds. During the recruitment process, it quickly became clear that traditional methods like posters and social media announcements were most likely to reach emerging adults with higher socio-economic backgrounds. As a result, the approach was refined which also resulted in several valuable lessons for future studies with similar goals. First, it is important to establish direct personal contact with potential participants and relevant community organizations to enhance recruitment. Second, offering a convenient and familiar location for engagement minimized the burden of extensive travel, which made participation more accessible. For instance, we held focus group discussions in local youth organizations. Third, our experience highlighted the importance of adopting a flexible, empathetic, and patient approach when conducting qualitative research among individuals with lower socio-economic backgrounds. For instance, we introduced a photovoice task, asking participants to maintain a short photo diary in the lead-up to the focus group. Recognizing that not all participants could meet this requirement, we remained flexible, allowing individuals to document their thoughts on paper instead. Additionally, we emphasized the importance of cultivating a mutually beneficial relationship between researchers and participants. Some of the social organizations we approached expressed concerns about the demands of research involvement on their networks. To address this, we created a booklet filled with budget-friendly recipes and food-related tips, including meal-planning guidance and ingredient selection. This approach not only facilitated participant engagement but also received positive feedback from both participants and collaborating organizations. These insights, drawn from our recruitment experiences, can serve as a valuable resource for researchers aiming to perform research with socio-economically diverse populations.

Table 23. Overview recommendations for conducting research with emerging adults with lower socio-economic backgrounds

1.Personally contact potential participants or relevant community/social organizations
2.Use a convenient and familiar location to conduct the research
3.Position yourself as a flexible, emphatic, and patient researcher
4.Use prompting techniques or methods, like photovoice
5.Make sure that the participants also get something in return for their participation

3 Limitations and Directions for Future Research

3.1 Methodological Limitations and Recommendations

Although researchers have suggested exploring innovative and creative ways to address food literacy among different target groups, there was a lack of research investigating the possibilities of food media messages to address emerging adults' food literacy. Therefore, this dissertation utilized various research methodologies to bridge this gap in the literature and provide specific insights by zooming in on different components of the dissertation's theoretical framework. By employing diverse methodologies, the topic was examined from multiple perspectives, including those of the target group, the emerging adults, as well as the existing food media messages themselves. However, it is crucial to acknowledge that selecting these specific research methodologies and focusing on specific components of the framework introduces certain limitations and leaves important questions unanswered.

The research conducted in the First Part of this dissertation relied on both qualitative and quantitative research methodologies. Nevertheless, it is important to acknowledge that the quantitative studies from Chapters Two and Three predominantly involved individuals with high socioeconomic status (SES), raising concerns regarding the findings' generalizability. Two plausible reasons could explain this. First, the studies performed in Chapters Two and Three were conducted during the COVID-19 pandemic, which posed challenges in recruiting and conducting research using the available options. Therefore, we relied on survey research with primarily convenience samples, resulting in fewer emerging adults from lower socioeconomic backgrounds being involved in the research. Second, it is worth questioning the extent to which emerging adults from lower socioeconomic backgrounds can adequately participate in quantitative survey research. Questionnaires often tend to be lengthy and text-based, potentially disengaging participants who struggle with reading comprehension, particularly those with lower educational attainment (Faber et al., 2021). This limitation may also apply to using the FMCG scale (Chapter 2) among people with lower educational attainment or literacy levels. Therefore, future research should critically assess the suitability of the FMCG scale among diverse groups of emerging adults and propose alternative methods in combination with the scale. One possible avenue is the use of the FMCG scale together with supporting visuals or graphics. Previous research has suggested using visual aids in questionnaires to engage low-literate individuals and those with lower educational attainment (Faber et al., 2021; Macevičiūtė et al., 2019). Consequently, future research should investigate the possibilities and benefits of employing the FMCG scale in conjunction with visual support to adequately capture the food media motivations among diverse groups of emerging adults.

Additionally, prior research has cautioned against relying solely on self-report measures in U&G research (Krcmar & Strizhakova, 2009). One criticism of U&G is the potential limitations of self-report measures, such as the developed FMCG scale, as individuals may not always be capable of accurately self-reporting their motivations. While the FMCG scale offers valuable opportunities to systematically assess and understand emerging adults' media choices from a U&G perspective, it is important to recognize the value of incorporating other perspectives and approaches beyond self-reported media experiences in future research. Future research can incorporate self-report measures in combination with qualitative interviews or psychophysiological observations. For example, employing the FMCG scale in conjunction with qualitative methods, such as focus group discussions, photovoice techniques, or in-depth interviews, can provide a more comprehensive understanding of individuals' food media experiences. Additionally, integrating psychophysiological measures can further enhance our understanding of emerging adults' interaction with food media messages, which can provide valuable insights into various aspects of their visual attention, cognitive, and emotional media processing (e.g., Bailey et al., 2009; Liu & Bailey, 2020; Potter & Bolls, 2012; Spielvogel et al., 2018). For instance, the use of the FMCG scale in tandem with eye-tracking measures can illuminate the visual attention patterns of emerging adults concerning food cues embedded in these messages. Furthermore, heart rate monitoring can offer a deeper understanding of how certain food cues in food media messages are cognitively processed while assessing emotional processing through the affective dimensions of valence and arousal can shed light on emotional responses (Potter & Bolls, 2012). By adopting these multi-method approaches, future research can overcome the limitations of self-report measures and gain a more holistic understanding of the complexities surrounding emerging adults' gratifications from food media messages.

The research conducted in the Second Part of this dissertation, which consisted of quantitative content and nutritional analyses, also entailed several limitations. First, only a limited number of food media messages were analyzed from a single social media platform, Instagram, with Chapter Five specifically emphasizing recipe content. Furthermore, the included food influencers were chosen through a pilot study involving mainly higher-educated female emerging adults, which may not serve as a valid representation for other groups, including lower-educated or male emerging adults. Although these findings provided valuable insights, future research should expand the sample size and encompass a broader range of food media messages from various food celebrities and sources to obtain a more comprehensive understanding of the diversity in food media messages, food influencers, and their characteristics. In particular, this expansion is important for the nutritional analyses carried out in Chapter Five. The featured food influencers did not specifically endorse any particular diets or dietary patterns (e.g., a gluten-free

diet, veganism, a ketogenic diet, or a carnivore diet). However, former research has indicated that some food influencers do (Sabbagh et al., 2020), which may yield other nutritional results. Future studies should encompass a more diverse range of food influencers to investigate potential variations in the nutrient criteria of the shared recipes.

Second, it is important to acknowledge certain limitations within the context of the performed nutritional analysis (Chapter Five). Namely, the recipes of food influencers were assessed using the validated nutrient criteria of Benelam and Stanner (2015), as there are no established international guidelines by health organizations, such as the WHO, for evaluating nutrient intake per recipe or meal. However, it is important to recognize that these criteria are derived from the UK Food Standard Agency guidelines (FSA), suggesting potential limitations in universal applicability across diverse cultural contexts. Future researchers should be mindful of the potential limitations in applying these guidelines and interpreting the resulting data. Furthermore, the nutritional content analyses only indicate exposure to certain types of recipes and do not provide insights into actual behavior. Individuals can modify recipes by adding, omitting, or changing ingredients, altering the nutritional value. Moreover, the nutritional analysis only considered raw ingredients, neglecting the impact of preparation methods or the shrinking factor (i.e., the portion size), adding further complexity to the assessment of the recipes' nutritional value.

In addition, future research could delve into the relationship between different message content and the levels of audience engagement. By analyzing engagement metrics such as likes, shares, and comments, researchers can gain valuable insights into which types of messages are more or less popular and influential in terms of engaging audiences.

Finally, when considering the findings of the First and Second Part together, this dissertation has provided valuable insights into several separate components of the theoretical framework. However, due to the dissertation's focus on individual components, further investigation is needed to determine the overall correlational and causal relationships between these elements. Future research should prioritize examining the relationship between exposure to food media messages and food literacy outcomes among emerging adults, exploring both cross-sectional associations and causal effects. For example, there is a need for more research to establish the link between various message characteristics (e.g., use of BCTs and persuasive cues) and source characteristics (e.g., source type and source credibility), and understanding how these different characteristics contribute to different outcomes on emerging adults' food literacy.

Additionally, for food communication scholars in particular, it is important to acknowledge the need to measure exposure to food media messages accurately. Accurate measurement of food media exposure is crucial for detecting significant media effects (De Vreese & Neijens, 2016; Knobloch-Westerwick, 2014; Scharkow, 2019). Previous studies, including our own, have relied on self-reports to measure exposure to food media messages. However, self-report measures may not accurately capture individuals' true exposure due to several factors, such as the need to understand the question, recall relevant behavior, estimate frequency, map frequency onto response alternatives, and report either candid or socially desirable answers (De Vreese & Neijens, 2016). Furthermore, food media messages are versatile, appearing in different formats and media types and displaying diverse content that can be both supportive and non-supportive of food literacy—additionally, determining what behavior should be acknowledged as exposure presents a challenge. Is it simply looking at a screen, watching food-related programming attentively, liking recipe postings on social media, or recalling food media messages? People exhibit different levels of attention, involvement, and engagement (De Vreese & Neijens, 2016), which must be considered when measuring food media exposure.

Addressing these challenges requires innovative approaches in future research. A potential avenue is the integration of content analyses and self-report measures. Given the diverse nature of food media messages and the difficulty respondents may have in classifying them regarding their relevance to food literacy, in-depth analyses of these messages are vital for understanding their content and correlating them with outcomes such as food literacy. Employing media diaries or automatic media exposure registration can help assess respondent exposure while conducting a content analysis on the actual media content viewed by participants and provide valuable insights into its characteristics (De Vreese et al., 2017; De Vreese & Neijens, 2016; Slater, 2016). For example, a media survey could be administered to assess exposure, followed by an analysis and categorization of the content into categories such as healthy/unhealthy or the presence of food literacy elements. This variable could be included in analyses to examine its correlation with food literacy outcomes.

3.2 Conceptual Limitations and Recommendations

The current dissertation extensively relied on a U&G theoretical framework, enabling a thorough investigation of the selection and motivation processes involved in emerging adults' engagement with food media messages and the types of messages they were exposed to. Nonetheless, it is crucial to recognize that employing a theoretical framework based on U&G is not without limitations.

A strength of the used theoretical framework is that it encompasses the role of food media selection in people's broader food media consumption process and

effects, also acknowledging the role of individual and contextual factors. However, the framework does not explicitly acknowledge the underlying message processing or response states. While U&G acknowledges cognitive and emotional message processing, they are more often theorized than empirically investigated (Valkenburg & Peter, 2013). However, recent media effects theories, such as the differential susceptibility model to media effects (DSMM), have explicitly argued to integrate both cognitive and emotional message processing as mutually inclusive entities when studying media effects (Valkenburg & Oliver, 2019; Valkenburg & Peter, 2013). According to the DSMM model, cognitive, emotional, and excitative response states, or message processing factors, are interconnected, and these response states mediate the relationship between media use and media effects (Valkenburg & Peter, 2013). The theoretical framework of this dissertation falls short in addressing and acknowledging the significance of media response states. Therefore, future research is encouraged to explore and identify the specific media response states in relation to food media messages. More specifically, further investigation can focus on which particular food media messages elicit different types of response states and how these response states lead to various effects, including food literacy outcomes.

A second important limitation and recommendation for future research based on the dissertation's theoretical framework lies in the conceptualization of individual and contextual factors that predict and moderate media use and effects. In the current study, we contextualized the developmental period of emerging adulthood as influential in shaping individuals' food media behaviors. However, to advance our understanding of food literacy among emerging adults, it is crucial for future research to identify and examine specific individual and contextual variables that play a role in this process. Importantly, researchers should consider media and non-media variables related to food behaviors when investigating the effects and relationships between food media messages and food-related outcomes. To address this, we recommend a comprehensive integration of food- and media-related frameworks for researchers exploring these topics. For instance, combining frameworks like the DONE-framework (Stok et al., 2018), which captures the determinants influencing emerging adults' eating behavior, with the DSMM-model (Valkenburg & Peter, 2013) to investigate the media effects.

4 Implications

The investigations carried out in the context of this dissertation predominantly adopted an exploratory approach, providing initial insights into the potential avenues for enhancing food literacy through the utilization of food-related media messages. Nevertheless, these findings also provide several overarching implications for promoting food literacy among emerging adults through food media messages.

Implication 1: Focus on online food media messages

Firstly, across the first three empirical Chapters, it became clear that food media messages are omnipresent in different formats and across various media types. Although these food media messages also came across emerging adults in different media types, it was clear that online food media messages were cited to be the most apparent in their lives. Therefore, a first recommendation is that food literacy promotion activities for emerging adults via food media messages should focus on online food media messages.

Implication 2: Use incidental exposure routes as ways to reach emerging adults

Secondly, the findings from the initial three empirical Chapters underscore that emerging adults engage with media messages about food through two distinct pathways. Firstly, some actively seek out these messages driven by their existing interest in food. Secondly, exposure to food-related media messages can occur incidentally, primarily influenced by structural factors like algorithms and personal networks, including peer interactions. Notably, those emerging adults who already possess a degree of interest in food are more inclined to search for such content proactively. However, it is essential to recognize that even individuals with a limited initial interest in food can be exposed to these messages incidentally. Chapter One's findings, in particular, shed light on how the structural elements and affordances of media platforms, along with interactions within their personal networks, bring food media messages to their attention. This suggests that there is a significant opportunity to devise strategies for promoting food literacy among emerging adults by leveraging these incidental exposure routes. For example, initiatives could encourage peer-driven actions like sharing, reacting to, or tagging food media messages. This can be achieved, for instance, by incorporating explicit calls to action in the messages, like encouraging people to share a recipe with friends or tag friends who would love to make this. Additionally, exploiting platform affordances such as targeted paid advertisements could enhance engagement with specific target groups.

Implication 3: Design food media messages that present convenient information in an entertaining and appealing way by applying a multi-stakeholder approach

Thirdly, within the context of the design of food media messages, it is first of all important to consider that the group of emerging adults have different needs and varying levels of motivations they find important to seek out in food media messages. As such, it is important for health promotors and communicators to use specific message strategies to reach specific groups of emerging adults as much as possible. Nevertheless, an overall important implication for designing food media

messages to promote food literacy among emerging adults is the necessity for these messages to strike a balance between being informative and entertaining.

To begin with the informative aspect, our findings indicate that emerging adults are increasingly seeking information related to cooking convenience within food media messages, considering this aspect crucial when deciding whether to take action or engage in behaviors depicted, such as trying out a recipe. Therefore, a key recommendation is that food literacy-related information should be presented in a convenient manner that aligns with the life phase of emerging adults. This entails delivering information that accommodates their tight budgets, limited prior culinary knowledge, available kitchen equipment, and time constraints, ultimately making it more convenient and appealing to them.

Secondly, it is essential to pay attention not just to the content but also to the delivery, as it should be entertaining. This is important to ensure that under the multitude of available food media messages, a message can stand out and capture the attention of emerging adults, including those initially uninterested in food media messages. First of all, it is important to make food media messages visually appealing, especially considering the visual-driven nature of social media platforms like Instagram and TikTok. Moreover, including elements of humor, captivating filming techniques, and featuring popular food personalities can enhance the entertainment value of food media messages. Notably, our research underscores that it is often the specific individuals behind or within the media messages, such as food influencers, who serve as the primary source of enjoyment for emerging adults. Furthermore, the insights from our research highlight that food influencers, in particular, establish strong connections with their followers, earning their trust and, consequently, exerting a more significant influence on behavioral change. Moreover, given their natural inclination towards employing behavioral change techniques, influencers could be considered ideal "entertainment educators." Therefore, a subsequent implication is to feature or collaborate with such food influencers to infuse entertainment into food media messages and broaden the reach of food literacy promoting food media messages.

Furthermore, it is advised, in this regard, to foster collaboration among diverse stakeholders with varying expertise. On the one hand, influencers possess the ability to deliver information in an appealing and desired manner to their target audience, while on the other hand, health organizations can contribute their essential role in providing accurate and valuable information. This collaborative approach promises to harness the entertainment potential of food media messages while ensuring the effective transmission of essential food literacy information to emerging adults.

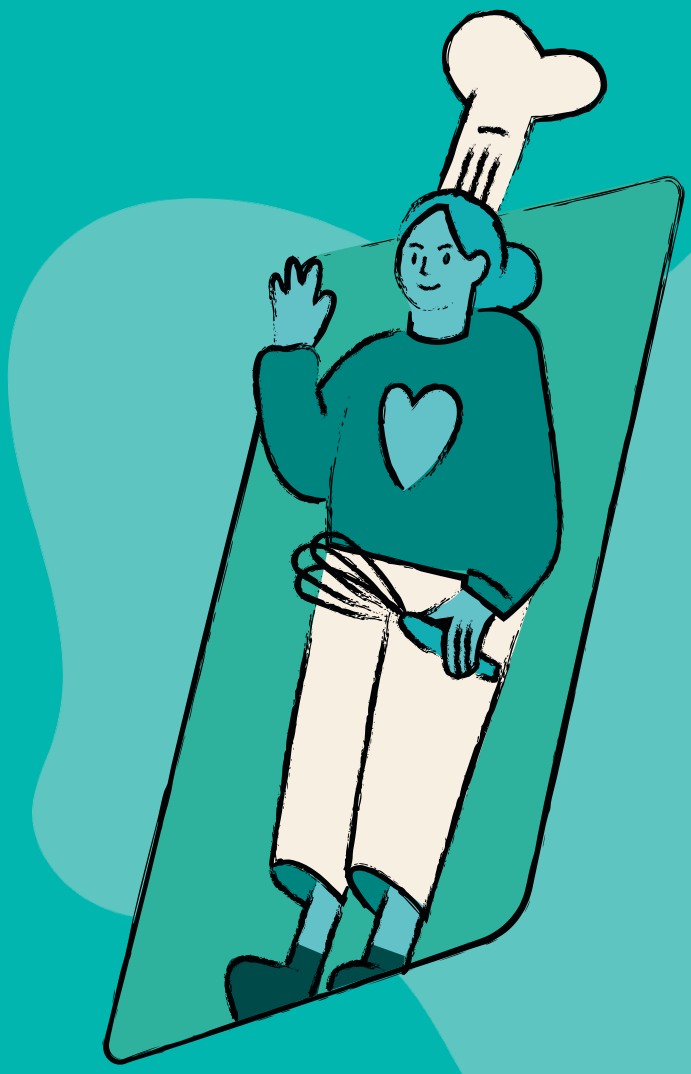
Implication 4: Discourage the spread of food media messages that portray non-supportive food literacy behaviors

Nevertheless, it is crucial to recognize that the findings of this dissertation, in alignment with previous research, reveal the diverse landscape of food media messages. This diversity encompasses a significant number of messages that promote unsupportive and unhealthy food-related behaviors. In light of these findings, we advocate for a broader strategy to enhance the resilience of emerging adults against the influence of such messages. Initiating policy measures is crucial to protect the well-being of emerging adults in light of the widespread presence of unhealthy food media messages. Promoting initiatives that strengthen consumer resilience (e.g., food media literacy) against these influences is of utmost significance. By equipping emerging adults with the skills and knowledge to discern and critically evaluate the media messages about food they encounter, we can empower them to make informed and healthier choices in the realm of food and nutrition.

In addition to enhancing the resilience and food media literacy of emerging adults, there is a clear need to develop tools and start initiatives to streamline the process of evaluating food media messages. For instance, as highlighted in Chapter Five, the recipes promoted by food influencers on platforms like Instagram could benefit from incorporating more whole grains, legumes, fruits, and vegetables. However, the specific recommendations for improving a recipe may vary depending on its unique characteristics. Initiatives could involve the creation of recipe platforms that offer automatic suggestions for enhancing nutritional quality, such as adding an extra salad, substituting refined grains with whole grains, or replacing processed meats with unprocessed meats or plant-based proteins. Furthermore, these tools could extend beyond ingredient recommendations to provide insights into cooking techniques, for instance, suggesting oven-baking instead of frying for preparing potatoes. Such innovations could empower emerging adults to make healthier food choices based on informed evaluations of the media messages they encounter.

Finally, as part of the broader strategy to promote healthier food choices among emerging adults, it is essential to consider the role of influencers in shaping dietary behaviors. Just as commercial brands and companies often organize events to highlight their specific products and provide information, health organizations can implement similar initiatives by organizing 'Food Influencers Days.' Within these events, health organizations can educate food influencers on integrating various aspects of meal planning, ingredient selection, and meal consumption into their content. They can also provide insights into enhancing the nutritional quality of their recipes and content. By emphasizing the critical role that influencers play in promoting healthy eating habits among emerging adults, these 'Food Influencers Days' can serve as influencer buzz events aimed at not only educating but also inspiring influencers to incorporate food literacy principles and support a culture of healthy eating.

REFERENCES



A

Abbot, J. M., Byrd-Bredbenner, C., Schaffner, D., Bruhn, C., & Blalock, L. (2009). Comparison of food safety cognitions and self-reported food-handling behaviors with observed food safety behaviors of young adults. *European journal of clinical nutrition*, *63*(4), 572-579. https://doi.org/10.1038/sj.ejcn.1602961

Allman-Farinelli, M., Partridge, S. R., & Roy, R. (2016). Weight-related dietary behaviors in young adults. *Current obesity reports*, *5*(1), 23-29. https://doi.org/10.1007/s13679-016-0189-8

Anjani, L., Mok, T., Tang, A., Oehlberg, L., & Goh, W. B. (2020, April 25-30 2020). Why do people watch others eat food? An Empirical Study on the Motivations and Practices of Mukbang Viewers. CHI Conference on Human Factors in Computing Systems,

Arnett, J. J. (2000). Emerging adulthood: A theory of development from the late teens through the twenties. *American psychologist*, *55*(5), 469. https://doi.org/10.1037/0003-066X.55.5.469

Arnett, J. J. (2014). *Emerging adulthood: The winding road from the late teens through the twenties*. Oxford University Press.

Arnett, J. J. (2015). *The Oxford handbook of emerging adulthood*. Oxford University Press.

Arnett, J. J. (2016). Does emerging adulthood theory apply across social classes? National data on a persistent question. *Emerging adulthood*, *4*(4), 227-235. https://doi.org/10.1177/2167696815613000

Arnett, J. J., Kloep, M., Hendry, L. B., & Tanner, J. L. (2011). *Debating emerging adulthood: Stage or process?* Oxford University Press.

Atiq, M., Abid, G., Anwar, A., & Ijaz, M. F. (2022). Influencer Marketing on Instagram: A Sequential Mediation Model of Storytelling Content and Audience Engagement via Relatability and Trust. *Information*, *13*(7), 345. https://doi.org/10.3390/info13070345

Aufderheide, P. (2018). Media literacy: From a report of the national leadership conference on media literacy. In *Media Literacy Around the World* (pp. 79-86). Routledge.

Auxier, B., & Anderson, M. (2021). *Social media use in 2021* (Pew research center, Issue. www.pewresearch.org

B

Bae, M. (2018). Understanding the effect of the discrepancy between sought and obtained gratification on social networking site users' satisfaction and continuance intention. *Computers in human behavior*, *79*, 137-153. https://doi.org/10.1016/j.chb.2017.10.026

Bailey, C. J., Drummond, M. J., & Ward, P. R. (2019). Food literacy programmes in secondary schools: A systematic literature review and narrative synthesis of quantitative and qualitative evidence. *Public Health Nutrition*, *22*(15), 2891-2913. https://doi.org/10.1017/S1368980019001666

Bailey, R., Wise, K., & Bolls, P. (2009). How avatar customizability affects children's arousal and subjective presence during junk food–sponsored online video games. *CyberPsychology & Behavior*, *12*(3), 277-283. https://doi.org/10.1089/cpb.2008.0292

Bailly, N., Maitre, I., Amanda, M., Herve, C., & Alaphilippe, D. (2012). The Dutch Eating Behaviour Questionnaire (DEBQ). Assessment of eating behaviour in an aging French population. *Appetite*, *59*(3), 853-858. https://doi.org/10.1016/j.appet.2012.08.029

Baldwin, H. J., Freeman, B., & Kelly, B. (2018). Like and share: associations between social media engagement and dietary choices in children. *Public Health Nutrition*, *21*(17), 3210-3215. https://doi.org/10.1017/S1368980018001866

Bandalos, D. L., & Finney, S. J. (2018). Factor analysis: Exploratory and confirmatory. In G. R. Hancock, L. M. Stapleton, & R. O. Mueller (Eds.), *The reviewer's guide to quantitative methods in the social sciences* (pp. 98-122). Routledge.

Bandura, A. (1977). Self-efficacy: toward a unifying theory of behavioral change. *Psychological review*, *84*(2), 191. https://doi.org/10.1037/0033-295X.84.2.191

Barrett, T., & Feng, Y. (2020). Content analysis of food safety implications in online flour-handling recipes. *British Food Journal*, *123*(3). https://doi.org/10.1108/bfj-04-2020-0351

Bartholomew, L. K., Parcel, G. S., & Kok, G. (1998). Intervention mapping: a process for developing theory and evidence-based health education programs. *Health education & behavior*, *25*(5), 545-563. https://doi.org/10.1177/109019819802500502

Barton, D., & Hamilton, M. (2005). Literacy practices. In D. Barton, M. Hamilton, & R. Ivanic (Eds.), *Situated literacies* (pp. 25-32). Routledge.

Barton, K. M. (2009). Reality television programming and diverging gratifications: The influence of content on gratifications obtained. *Journal of Broadcasting & Electronic Media*, *53*(3), 460-476. https://doi.org/10.1080/08838150903102659

Becker, L. B. (1979). Measurement of gratifications. *Communication Research*, *6*(1), 54-73. https://doi.org/10.1177/009365027900600104

Begley, A., & Vidgen, H. (2016). An overview of the use of the term food literacy. In H. Vidgen (Ed.), *Food Literacy* (pp. 33-50).

Belch, G. E., & Belch, M. A. (2021). *Advertising and promotion*: *An integrated marketing communications perspective* (12th ed.). McGraw-Hill Education.

Benelam, B., & Stanner, S. (2015). Development of a methodology to assess the nutrient profile of popular UK meals. *Nutrition Bulletin*, *40*(2), 315-325. https://doi.org/10.1111/nbu.12167

Berchtold, A. (2016). Test–retest: Agreement or reliability? *Methodological Innovations*, *9*. https://doi.org/10.1177/2059799116672875

Bergin, T. (2018). *An introduction to data analysis*: *Quantitative, qualitative and mixed methods*. Sage.

Bernardo, G. L., Jomori, M. M., Fernandes, A. C., Colussi, C. F., Condrasky, M. D., & da Costa Proenca, R. P. (2018). Positive impact of a cooking skills intervention among Brazilian university students: Six months follow-up of a randomized controlled trial. *Appetite, 130*, 247-255. https://doi.org/10.1016/j.appet.2018.08.014

Bernardo, G. L., Rodrigues, V. M., Bastos, B. S., Uggioni, P. L., Hauschild, D. B., Fernandes, A. C., Martinelli, S. S., Cavalli, S. B., Bray, J., & Hartwell, H. (2021). Association of personal characteristics and cooking skills with vegetable consumption frequency among university students. *Appetite*, 105432. https://doi.org/10.1016/j.appet.2021.105432

Bevan, S., Wengreen, H., & Dai, X. (2019). Increasing Food Literacy Among College Students. *NACTA Journal*, *64*(2), 174-182. https://www.jstor.org/stable/27157791

Bevelander, K. E., Anschütz, D. J., Creemers, D. H., Kleinjan, M., & Engels, R. C. (2013). The role of explicit and implicit self-esteem in peer modeling of palatable food intake: A study on social media interaction among youngsters. *PloS one*, *8*(8), e72481. https://doi.org/10.1371/journal.pone.0072481

Blumler, J. G., & Katz, E. (1974). *The uses of mass communications*: *Current perspectives on gratifications research*. Sage Publications.

Boateng, G. O., Neilands, T. B., Frongillo, E. A., Melgar-Quinonez, H. R., & Young, S. L. (2018). Best Practices for Developing and Validating Scales for Health, Social, and Behavioral Research: A Primer. *Front Public Health*, *6*, 149. https://doi.org/10.3389/fpubh.2018.00149

Boedt, T., Steenackers, N., Verbeke, J., Vermeulen, A., De Backer, C., Yiga, P., & Matthys, C. (2021). A mixed-method approach to develop and validate an integrated food literacy tool for personalized food literacy guidance. *Frontiers in Nutrition*, *8*. https://doi.org/10.3389/fnut.2021.760493

Boerman, S. C. (2020). The effects of the standardized Instagram disclosure for micro-and meso-influencers. *Computers in human behavior*, *103*, 199-207. https://doi.org/10.1016/j.chb.2019.09.015

Boerman, S. C., & Van Reijmersdal, E. A. (2016). Informing consumers about "hidden" advertising: A literature review of the effects of disclosing sponsored content. In P. De Pelsmacker (Ed.), *Advertising in new formats and media* (pp. 115-146). Emerald Group Publishing Limited. https://doi.org/10.1108/978-1-78560-313-620151005

Borda, D., Thomas, M. R., Langsrud, S., Rychli, K., Jordan, K., Van Der Roest, J. and Nicolau, A. I. (2014). Food safety practices in European TV cooking shows. *British Food Journal*, *116*(10), 1652-1666. https://doi.org/10.1108/BFJ-12-2013-0367.

Bouvier, G., & Rasmussen, J. (2022). *Qualitative Research Using Social Media*. Routledge.

Bowman, N. D., & Goodboy, A. K. (2020). Evolving considerations and empirical approaches to construct validity in communication science. *Annals of the international communication association*, *44*(3), 219-234. https://doi.org/10.1080/23808985.2020.1792791

Bramston, V., Rouf, A., & Allman-Farinelli, M. (2020). The development of cooking videos to encourage calcium intake in young adults. *Nutrients*, *12*(5), 1236. https://doi.org/10.3390/nu12051236

Brijnath, B., Protheroe, J., Mahtani, K. R., & Antoniades, J. (2016). Do web-based mental health literacy interventions improve the mental health literacy of adult consumers? Results from a systematic review. *Journal of medical Internet research*, *18*(6), e165. https://doi.org/10.2196/jmir.5463

Brocato, D. (2010). Push and Pull Marketing Strategies. In *Wiley International Encyclopedia of Marketing*.

Brooks, N., & Begley, A. (2014). Adolescent food literacy programmes: A review of the literature. *Nutrition & Dietetics*, *71*(3), 158-171. https://doi.org/10.1111/1747-0080.12096

Brubaker, P. J., & Haigh, M. M. (2017). The religious Facebook experience: Uses and gratifications of faith-based content. *Social Media+ Society*, *3*(2), 2056305117703723. https://doi.org/10.1177/2056305117703723

Burke-Garcia, A. (2019). *Influencing health: A comprehensive guide to working with online influencers*. Routledge.

Burns, K. S., Boudreaux, J., Curtin, N. J., Freberg, K., Friedman, M., Jones, E. B., Kim, C., Lee, N. M., Liberman, C. J., & Limkangvanmongkol, V. (2021). *Research Perspectives on Social Media Influencers and Their Followers*. Lexington Books.

Byrd-Bredbenner, C. (2004). Food preparation knowledge and attitudes of young adults: implications for nutrition practice. *Topics in Clinical Nutrition*, *19*(2), 154-163. https://doi.org/10.1097/00008486-200404000-00009

C

Camargo, A. M. d., Botelho, A. M., Camargo, Á. M. d., Dean, M., & Fiates, G. M. R. (2022). Ultra-Processed Foods as Ingredients of Culinary Recipes Shared on Popular Brazilian YouTube Cooking Channels. *Nutrients*, *14*(18), 3689. https://doi.org/10.3390/nu14183689

Campbell, C., & Farrell, J. R. (2020). More than meets the eye: The functional components underlying influencer marketing. *Business Horizons*, *63*(4), 469-479. https://doi.org/10.1016/j.bushor.2020.03.003

Campbell, D. T., & Fiske, D. W. (1959). Convergent and discriminant validation by the multitrait-multimethod matrix. *Psychological bulletin*, *56*(2), 81-105. https://doi.org/10.1037/h0046016

Car, J., Lang, B., Colledge, A., Ung, C., & Majeed, A. (2011). Interventions for enhancing consumers' online health literacy. *Cochrane database of systematic reviews*(6). https://doi.org/10.1002/14651858.CD007092.pub2

Caraher, M., Lange, T., & Dixon, P. (2000). The influence of TV and celebrity chefs on public attitudes and behavior among the English public. *Journal for the Study of Food and Society*, *4*(1), 27-46. https://doi.org/10.2752/152897900786690805

Carpenter, S. (2018). Ten Steps in Scale Development and Reporting: A Guide for Researchers. *Communication Methods and Measures*, *12*(1), 25-44. https://doi.org/10.1080/19312458.2017.1396583

Carrie, K., Bridges, S. M., Srinivasan, D. P., & Cheng, B. S. (2015). Social media in adolescent health literacy education: a pilot study. *JMIR research protocols*, *4*(1), e3285. https://doi.org/10.2196/resprot.3285

Casaló, L. V., Flavián, C., & Ibáñez-Sánchez, S. (2020). Influencers on Instagram: Antecedents and consequences of opinion leadership. *Journal of business research*, *117*, 510-519. https://doi.org/10.1016/j.jbusres.2018.07.005

Centraal Bureau voor de Statistiek. (2019). *Studerende én werkende jongeren gaan later uit huis*. https://www.cbs.nl/nl-nl/nieuws/2019/06/studerende-en-werkende-jongeren-gaan-later-uit-huis

Chan, F. F. Y., Lowe, B., & Petrovici, D. (2017). Young adults' perceptions of product placement in films: An exploratory comparison between the United Kingdom and Hong Kong. *Journal of Marketing Communications*, *23*(3), 311-328. https://doi.org/10.1080/13527266.2015.1061036

Chen, X., Sin, S.-C. J., Theng, Y.-L., & Lee, C. S. (2015). Why students share misinformation on social media: Motivation, gender, and study-level differences. *The journal of academic librarianship*, *41*(5), 583-592. https://doi.org/10.1016/j.acalib.2015.07.003

Cheng, X., Lin, S.-Y., Wang, K., Hong, Y. A., Zhao, X., Gress, D., Wojtusiak, J., Cheskin, L. J., & Xue, H. (2021). Healthfulness assessment of recipes shared on Pinterest: natural language processing and content analysis. *Journal of medical Internet research*, *23*(4), e25757. https://doi.org/10.2196/25757

Cheung, G. W., & Wang, C. (2017). Current Approaches for Assessing Convergent and Discriminant Validity with SEM: Issues and Solutions. *Academy of Management Proceedings*, *2017*(1), 12706. https://doi.org/10.5465/AMBPP.2017.12706abstract

Cheung, M. L., Leung, W. K., Aw, E. C.-X., & Koay, K. Y. (2022). "I follow what you post!": The role of social media influencers' content characteristics in consumers' online brand-related activities (COBRAs). *Journal of Retailing and Consumer Services*, *66*, 102940. https://doi.org/10.1016/j.jretconser.2022.102940

Chiu, C.-M., & Huang, H.-Y. (2015). Examining the antecedents of user gratification and its effects on individuals' social network services usage: the moderating role of habit. *European Journal of Information Systems*, *24*, 411-430. https://doi.org/10.1057/ejis.2014.9;

Cho, H. (2011). *Health communication message design: Theory and practice*. Sage Publications. https://doi.org/10.1080/10410236.2012.753674

Chong, M., & Swapna, G. (2020). Social media influencers and Instagram storytelling: Case study of Singapore Instagram influencers. *Journal of Applied Business and Economics*, *22*(10), 81. https://doi.org/10.33423/jabe.v22i10.3714

Clifford, D., Anderson, J., Auld, G., & Champ, J. (2009). Good Grubbin': impact of a TV cooking show for college students living off campus. *Journal of nutrition education and behavior*, *41*(3), 194-200. https://doi.org/10.1016/j.jneb.2008.01.006

Coates, A. E., Hardman, C. A., Halford, J. C., Christiansen, P., & Boyland, E. J. (2019). Social media influencer marketing and children's food intake: a randomized trial. *Pediatrics*, *143*(4). https://doi.org/10.1542/peds.2018-2554

Cohen, J. (1988). *Statistical Power Analysis for the Behavioral Sciences*. Routledge.

Colatruglio, S., & Slater, J. (2016). Challenges to acquiring and utilizing food literacy: Perceptions of young Canadian adults. *Canadian Food Studies/La Revue canadienne des études sur l'alimentation, 3(1), 96-118. https://doi.org/10.15353/cfs-rcea.v3i1.72*

Collins, S., Dash, S., Allender, S., Jacka, F., & Hoare, E. (2022). Diet and mental health during emerging adulthood: a systematic review. *Emerging adulthood*, *10*(3), 645-659. https://doi.org/10.1177/2167696820943028

Conard, S. (2019). Best practices in digital health literacy. *International journal of cardiology*, *292*, 277-279. https://doi.org/10.1016/j.ijcard.2019.05.070

Conroy, D. E., Yang, C.-H., & Maher, J. P. (2014). Behavior change techniques in top-ranked mobile apps for physical activity. *American journal of preventive medicine*, *46*(6), 649-652. https://doi.org/10.1016/j.amepre.2014.01.010

Contois, E., & Kish, Z. (2022). *Food Instagram: Identity, Influence, and Negotiation*. University of Illinois Press.

Contois, E. J. H. (2020). *Diners, dudes, and diets: how gender and power collide in food media and culture*. University of North Carolina Press.

Cooper, R., & Tang, T. (2009). Predicting audience exposure to television in today's media environment: An empirical integration of active-audience and structural theories. *Journal of Broadcasting & Electronic Media*, *53*(3), 400-418. https://doi.org/10.1080/08838150903102204

Corbin, J. M., & Strauss, A. (1990). Grounded theory research: Procedures, canons, and evaluative criteria. *Qualitative sociology*, *13*(1), 3-21. https://doi.org/10.1515/zfsoz-1990-0602

Corcoran, N. (2010). *Working on health communication*. Sage Publications Ltd.

Costello, A. B., & Osborne, J. (2005). Best practices in exploratory factor analysis: Four recommendations for getting the most from your analysis. *Practical assessment, research, and evaluation*, *10*(1), 7. https://doi.org/10.7275/jyj1-4868

Coyne, S. M., Padilla-Walker, L. M., & Howard, E. (2013). Emerging in a digital world: A decade review of media use, effects, and gratifications in emerging adulthood. *Emerging adulthood*, *1*(2), 125-137. https://doi.org/10.1177/2167696813479782

Coyne, S. M., Padilla-Walker, L. M., & Howard, E. (2016). Media uses in emerging adulthood. In J. J. Arnett (Ed.), *The Oxford handbook of emerging adulthood*.

Craig, P., Dieppe, P., Macintyre, S., Michie, S., Nazareth, I., & Petticrew, M. (2008). Developing and evaluating complex interventions: the new Medical Research Council guidance. *Bmj*, *337*, a1655. https://doi.org/10.1136/bmj.a1655

Croes, E., & Bartels, J. (2021). Young adults' motivations for following social influencers and their relationship to identification and buying behavior. *Computers in human behavior*, *124*, 106910. https://doi.org/10.1016/j.chb.2021.106910

Cullen, T., Hatch, J., Martin, W., Higgins, J. W., & Sheppard, R. (2015). Food literacy: definition and framework for action. *Canadian journal of Dietetic practice and research*, *76*(3), 140-145. https://doi.org/10.3148/cjdpr-2015-010

Cullerton, K., Vidgen, H. A., & Gallegos, D. (2012). A review of food literacy interventions targeting disadvantaged young people. https://eprints.qut.edu.au/216308/

Cuykx, I., Decorte, P., Teunissen, L., Vandebosch, H., Van den Bulck, H., Pabian, S., Van Royen, K., & De Backer, C. (2023). The magic is in the mix: a uses and gratifications approach to the cross-media use of food-related media content. *Food, Culture & Society*, 1-25. https://doi.org/10.1080/15528014.2023.2263705

Cuykx, I., Lochs, C., Van Royen, K., Vandebosch, H., Van den Bulck, H., Pabian, S., & De Backer, C. (2023). *What are food media (messages)? A scoping review for clarifying the concepts of food media, messages, and content in academia* 73rd ICA conference, Toronto.

D

Danesi, M. (2013). *Encyclopedia of media and communication*. University of Toronto Press.

De Backer, C., Teunissen, L., Cuykx, I., Decorte, P., Pabian, S., & Van Royen, K. (2020). *Research protocol Corona Cooking Survey*. https://osf.io/nz9xf/files/

De Backer, C. J., & Hudders, L. (2016). Look who's cooking. Investigating the relationship between watching educational and edutainment TV cooking shows, eating habits and everyday cooking practices among men and women in Belgium. *Appetite*, *96*, 494-501. https://doi.org/10.1016/j.appet.2015.10.016

De Marez, L., Sevenhant, R., Denecker, F., Georges, A., Wuyts, G., & Schuurman, D. (2022). *imec.digimeter 2022*. https://www.imec.be/nl/kennisuitwisseling/techmeters/digimeter/digimeter-2022

De Solier, I. (2005). TV dinners: Culinary television, education and distinction. *Continuum*, *19*(4), 465-481. https://doi.org/10.1080/10304310500322727

De Solier, I. (2018). Tasting the Digital: New Food Media. In K. Lebesco & P. Naccarato (Eds.), *The Bloomsbury handbook of food and popular culture* (pp. 13-26).

De Vreese, C. H., Boukes, M., Schuck, A., Vliegenthart, R., Bos, L., & Lelkes, Y. (2017). Linking survey and media content data: Opportunities, considerations, and pitfalls. *Communication Methods and Measures*, *11*(4), 221-244. https://doi.org/10.1080/19312458.2017.1380175

De Vreese, C. H., & Neijens, P. (2016). Measuring media exposure in a changing communications environment. *Communication Methods and Measures*, *10*(2-3), 69-80. https://doi.org/10.1080/19312458.2016.1150441

Decorte, P., Cuykx, I., Teunissen, L., Poels, K., Smits, T., Pabian, S., Van Royen, K., & De Backer, C. (2022). "Everywhere You Look, You'll Find Food": Emerging Adult Perspectives Toward the Food Media Landscape. *Ecology of Food and Nutrition*, *61*(3), 273-303. https://doi.org/10.1080/03670244.2021.1982711

Decorte, P., Poels, K., Smits, T., Pabian, S., Bolls, P., & De Backer, C. J. S. (2023). *Effects of taste and convenience cues in Instagram dessert recipe videos on psychophysiological processing, memory, and intentions* 73rd Annual Conference of the International Communication Association, Toronto, Canada.

Deforche, B., Van Dyck, D., Deliens, T., & De Bourdeaudhuij, I. (2015). Changes in weight, physical activity, sedentary behaviour and dietary intake during the transition to higher education: a prospective study. *International Journal of Behavioral Nutrition and Physical Activity*, *12*(1), 1-10. https://doi.org/10.1186/s12966-015-0173-9

Dickinson, K. M., Watson, M. S., & Prichard, I. (2018). Are clean eating blogs a source of healthy recipes? A comparative study of the nutrient composition of foods with and without clean eating claims. *Nutrients*, *10*(10), 1440. https://doi.org/10.3390/nu10101440

Donnar, G. (2017). 'Food porn' or intimate sociality: committed celebrity and cultural performances of overeating in meokbang. *Celebrity Studies*, *8*(1), 122-127. https://doi.org/10.1080/19392397.2016.1272857

Dunn, P., & Hazzard, E. (2019). Technology approaches to digital health literacy. *International journal of cardiology*, *293*, 294-296. https://doi.org/10.1016/j.ijcard.2019.06.039

Dziuban, C. D., & Shirkey, E. C. (1974). When is a correlation matrix appropriate for factor analysis? Some decision rules. *Psychological bulletin*, *81*(6), 358-361. https://doi.org/10.1037/h0036316

Elhoushy, S. (2022). To taste not to waste: Can exposure to TV cooking shows cultivate food waste reduction? *Journal of Consumer Behaviour*, *21*(4), 713-727. https://doi.org/10.1002/cb.2026

Ellis, J., Brown, K., Ramsay, S., & Falk, J. (2018). Changes in student-athletes' self-efficacy for making healthful food choices and food preparation following a cooking education intervention. *Journal of nutrition education and behavior*, *50*(10), 1056-1058. https://doi.org/10.1016/j.jneb.2017.10.002

Elsborg, P., Thorsen, A. V., Ravn-Haren, G., Bonde, A. H., Andersen, S. G., Vermund, M. C., Klinker, C. D., & Stjernqvist, N. W. (2022). Improved food literacy among schoolchildren as an effect of a food camp intervention: Results of a controlled effectiveness trial. *Appetite*, *169*, 105845. https://doi.org/10.1016/j.appet.2021.105845

Engler-Stringer, R. (2010). Food, cooking skills, and health: a literature review. *Canadian journal of Dietetic practice and research*, *71*(3), 141-145. https://doi.org/10.3148/71.3.2010.141

Enke, N., & Borchers, N. S. (2021). Social media influencers in strategic communication: A conceptual framework for strategic social media influencer communication. In N. S. Borchers (Ed.), *Social Media Influencers in Strategic Communication* (pp. 7-23). Routledge.

Erz, A., Marder, B., & Osadchaya, E. (2018). Hashtags: Motivational drivers, their use, and differences between influencers and followers. *Computers in human behavior*, *89*, 48-60. https://doi.org/10.1016/j.chb.2018.07.030

Escoto, K. H., Laska, M. N., Larson, N., Neumark-Sztainer, D., & Hannan, P. J. (2012). Work hours and perceived time barriers to healthful eating among young adults. *American journal of health behavior*, *36*(6), 786-796. https://doi.org/10.5993/AJHB.36.6.6

Evans, N. J., Phua, J., Lim, J., & Jun, H. (2017). Disclosing Instagram influencer advertising: The effects of disclosure language on advertising recognition, attitudes, and behavioral intent. *Journal of Interactive Advertising*, *17*(2), 138-149. https://doi.org/10.1080/15252019.2017.1366885

Faber, J. S., Al-Dhahir, I., Reijnders, T., Chavannes, N. H., Evers, A. W., Kraal, J. J., van den Berg-Emons, H., & Visch, V. T. (2021). Attitudes toward health, healthcare, and eHealth of people with a low socioeconomic status: a community-based participatory approach. *Frontiers in Digital Health*, *3*, 690182. https://doi.org/10.3389/fdgth.2021.690182

Fabrigar, L. R., Wegener, D. T., MacCallum, R. C., & Strahan, E. J. (1999). Evaluating the use of exploratory factor analysis in psychological research. *Psychological methods*, *4*(3), 272-299. https://doi.org/10.1037/1082-989x.4.3.272

Feng, Y., Chen, H., & Kong, Q. (2021). An expert with whom I can identify: The role of narratives in influencer marketing. *International Journal of Advertising*, *40*(7), 972-993. https://doi.org/10.1080/02650487.2020.1824751

Field, A. (2013). *Discovering statistics using IBM SPSS statistics*. sage.

Folkvord, F., Anschütz, D., & Geurts, M. (2020). Watching TV cooking programs: effects on actual food intake among children. *Journal of nutrition education and behavior*, *52*(1), 3-9. https://doi.org/10.1016/j.jneb.2019.09.016

Folkvord, F., & de Bruijne, M. (2020). The effect of the promotion of vegetables by a social influencer on adolescents' subsequent vegetable intake: A pilot study. *International journal of environmental research and public health*, *17*(7), 2243. https://doi.org/10.3390/ijerph17072243

Folkvord, F., & Hermans, R. C. (2020). Food marketing in an obesogenic environment: a narrative overview of the potential of healthy food promotion to children and adults. *Current Addiction Reports*, *7*, 431-436. https://doi.org/10.1007/s40429-020-00338-4

Fong Yee Chan, F. (2020). The perceived effectiveness of overt versus covert promotions. *Journal of Product & Brand Management*, *29*(3), 321-334. https://doi.org/10.1108/jpbm-06-2018-1912

Fordyce-Voorham, S. (2009). Essential food skills required in a skill-based healthy eating program. *Journal of the Home Economics Institute of Australia*, *16*(2), 16-20. https://doi.org/10.1016/j.jneb.2009.12.002

Fornell, C., & Larcker, D. F. (1981). Evaluating Structural Equation Models with Unobservable Variables and Measurement Error. *Journal of marketing research*, *18*(1), 39-50. https://doi.org/10.1177/002224378101800104

Forshee, R. A., & Storey, M. L. (2006). Demographics, not beverage consumption, is associated with diet quality. *International journal of food sciences and nutrition*, *57*(7-8), 494-511. https://doi.org/10.1080/09637480600991240

Fox, B., & Marinescu, V. (2020). An Argument for a broader definition for food literacy: findings from a systematic review. In V. Marinescu (Ed.), *Food, Nutrition and the Media* (pp. 239-257). Springer.

Freeman, B., Kelly, B., Vandevijvere, S., & Baur, L. (2016). Young adults: beloved by food and drink marketers and forgotten by public health? *Health promotion international*, *31*(4), 954-961. https://doi.org/10.1093/heapro/dav081

French, S. D., Green, S. E., O'Connor, D. A., McKenzie, J. E., Francis, J. J., Michie, S., Buchbinder, R., Schattner, P., Spike, N., & Grimshaw, J. M. (2012). Developing theory-informed behaviour change interventions to implement evidence into practice: a systematic approach using the Theoretical Domains Framework. *Implementation Science*, *7*(1), 1-8. https://doi.org/10.1186/1748-5908-7-38

G

Gallego, M. D., Bueno, S., & Noyes, J. (2016). Second Life adoption in education: A motivational model based on Uses and Gratifications theory. *Computers & Education*, *100*, 81-93. https://doi.org/10.1016/j.compedu.2016.05.001

Gan, C., & Li, H. (2018). Understanding the effects of gratifications on the continuance intention to use WeChat in China: A perspective on uses and gratifications. *Computers in human behavior*, *78*, 306-315. https://doi.org/10.1016/j.chb.2017.10.003

Garaus, M., & Lalicic, L. (2021). The unhealthy-tasty intuition for online recipes–when healthiness perceptions backfire. *Appetite*, *159*, 105066. https://doi.org/10.1016/j.appet.2020.105066

García-Rapp, F. (2017). Popularity markers on YouTube's attention economy: the case of Bubzbeauty. *Celebrity Studies*, *8*(2), 228-245. https://doi.org/10.1080/19392397.2016.1242430

Gardner, M., & Steinberg, L. (2005). Peer influence on risk taking, risk preference, and risky decision making in adolescence and adulthood: an experimental study. *Developmental psychology*, *41*(4), 625. https://doi.org/10.1037/0012-1649.41.4.625

GBD 2015 Obesity Collaborators. (2017). Health effects of overweight and obesity in 195 countries over 25 years. *New England Journal of Medicine*, *377*(1), 13-27. https://doi.org/10.1056/NEJMoa1614362

Georgakopoulou, A. (2022). (Small) stories as features on social media: Toward formatted storytelling. In P. Dawson & M. Makela (Eds.), *The Routledge Companion to Narrative Theory* (pp. 134-148). Routledge. https://doi.org/10.4324/9781003100157

Geppert, J., Struchtrup, S. S., Stamminger, R., Haarhoff, C., Ebert, V., Koch, S., Lohmann, M., & Böl, G.-F. (2019). Food safety behavior observed in German TV cooking shows. *Food control*, *96*, 205-211. https://doi.org/10.1016/j.foodcont.2018.09.017

Gibbs, C., O'Reilly, N., & Brunette, M. (2014). Professional team sport and Twitter: Gratifications sought and obtained by followers. *International Journal of Sport Communication*, *7*(2), 188-213. https://doi.org/https://doi.org/10.1123/IJSC.2014-0005

Goodman, M. K., & Jaworska, S. (2020). Mapping digital foodscapes: Digital food influencers and the grammars of good food. *Geoforum*, *117*, 183-193. https://doi.org/10.1016/j.geoforum.2020.09.020

Granheim, S. I., Løvhaug, A. L., Terragni, L., Torheim, L. E., & Thurston, M. (2021). Mapping the digital food environment: A systematic scoping review. *Obesity Reviews*, *23*(1). https://doi.org/10.1111/obr.13356

Gräve, J.-F. (2017). Exploring the perception of influencers vs. traditional celebrities: are social media stars a new type of endorser? Proceedings of the 8th international conference on Social Media & Society,

Green, E. J., & Knechtges, P. L. (2015). Food safety knowledge and practices of young adults. *Journal of Environmental Health*, *77*(10), 18-25. https://www.jstor.org/stable/26330266

Griffioen, N., Scholten, H., Lichtwarck-Aschoff, A., Van Rooij, M., & Granic, I. (2021). Everyone does it—differently: A window into emerging adults' smartphone use. *Humanities and Social Sciences Communications*, *8*(1), 1-11. https://doi.org/10.1057/s41599-021-00863-1

H

Ha, E.-J., & Caine-Bish, N. (2009). Effect of nutrition intervention using a general nutrition course for promoting fruit and vegetable consumption among college students. *Journal of nutrition education and behavior*, *41*(2), 103-109. https://doi.org/10.1016/j.jneb.2008.07.001

Haenlein, M., Anadol, E., Farnsworth, T., Hugo, H., Hunichen, J., & Welte, D. (2020). Navigating the New Era of Influencer Marketing: How to be Successful on Instagram, TikTok, & Co. *California management review*, *63*(1), 5-25. https://doi.org/10.1177/0008125620958166

Hair, J. F., Black, W. C., Babin, B. J., & Anderson, R. E. (2018). *Multivariate Data Analysis* (8th ed.). Cengage Learning EMEA.

Hamilton, S. F., & Hamilton, M. A. (2006). School, Work, and Emerging Adulthood. In *Emerging Adults in America: Coming of Age in the 21st Century (Decade of Behavior)*. https://doi.org/https://doi.org/10.1037/11381-011

Han, E., & Powell, L. M. (2013). Consumption patterns of sugar-sweetened beverages in the United States. *Journal of the Academy of Nutrition and Dietetics*, *113*(1), 43-53. https://doi.org/10.1016/j.jand.2012.09.016

Harris, J. L., Bargh, J. A., & Brownell, K. D. (2009). Priming effects of television food advertising on eating behavior. *Health Psychology*, *28*(4), 404. https://doi.org/10.1037/a0014399

Hartmann, T. (2009). *Media choice: A theoretical and empirical overview*.

Hasan, B., Thompson, W. G., Almasri, J., Wang, Z., Lakis, S., Prokop, L. J., Hensrud, D. D., Frie, K. S., Wirtz, M. J., & Murad, A. L. (2019). The effect of culinary interventions (cooking classes) on dietary intake and behavioral change: a systematic review and evidence map. *BMC nutrition*, *5*(1), 1-9. https://doi.org/10.1186/s40795-019-0293-8

Hebden, L., Chan, H., Louie, J., Rangan, A., & Allman-Farinelli, M. (2015). You are what you choose to eat: factors influencing young adults' food selection behaviour. *Journal of Human Nutrition and Dietetics*, *28*(4), 401-408. https://doi.org/10.1111/jhn.12312

Hebden, L., King, L., & Kelly, B. (2011). Art of persuasion: An analysis of techniques used to market foods to children. *Journal of paediatrics and child health*, *47*(11), 776-782. https://doi.org/10.1111/j.1440-1754.2011.02025.x

Hemmah, C. L. (2009). *Uses and gratifications of the Food Network*. San Jose State University.

Hendriks, H., Wilmsen, D., Van Dalen, W., & Gebhardt, W. A. (2020). Picture me drinking: Alcohol-related posts by Instagram influencers popular among adolescents and young adults. *Frontiers in psychology*, *10*, 2991. https://doi.org/10.3389/fpsyg.2019.02991

Herrera, J. C. (2021). The contribution of network science to the study of food recipes. A review paper. *Appetite*, *159*, 105048. https://doi.org/10.1016/j.appet.2020.105048

Hilger-Kolb, J., & Diehl, K. (2019). 'Oh God, I have to eat something, but where can I get something quickly?'—A qualitative interview study on barriers to healthy eating among university students in Germany. *Nutrients*, *11*(10), 2440. https://doi.org/10.3390/nu11102440

Hills, M. (2020). In search of "Hestonthusiasts": Heston Blumenthal's liminal celebrity chef status and hybridized fan practices. In C. D. Reinhard, J. E. Largent, & B. Chin (Eds.), *Eating Fandom* (pp. 31-44). Routledge.

Holmberg, C., Chaplin, J. E., Hillman, T., & Berg, C. (2016). Adolescents' presentation of food in social media: An explorative study. *Appetite*, *99*, 121-129. https://doi.org/10.1016/j.appet.2016.01.009

Howard, M. C. (2016). A Review of Exploratory Factor Analysis Decisions and Overview of Current Practices: What We Are Doing and How Can We Improve? *International Journal of Human-Computer Interaction*, *32*(1), 51-62. https://doi.org/10.1080/10447318.2015.1087664

Howard, S., Adams, J., & White, M. (2012). Nutritional content of supermarket ready meals and recipes by television chefs in the United Kingdom: cross sectional study. *Bmj*, *345*. https://doi.org/10.1136/bmj.e7607

Howse, E., Hankey, C., Allman-Farinelli, M., Bauman, A., & Freeman, B. (2018). 'Buying salad is a lot more expensive than going to McDonalds': young adults' views about what influences their food choices. *Nutrients*, *10*(8), 996. https://doi.org/10.3390/nu10080996

Hudders, L., De Jans, S., & De Veirman, M. (2021). The commercialization of social media stars: a literature review and conceptual framework on the strategic use of social media influencers. In N. S. Borchers (Ed.), *Social Media Influencers in Strategic Communication* (pp. 24-67). Routledge.

Hudders, L., & Lou, C. (2022). A new era of influencer marketing: Lessons from Recent Inquires and Thoughts on Future Directions. *International Journal of Advertising*, *41*(1), 1-5. https://doi.org/10.1080/02650487.2022.2031729

Hussain, A., & Shabir, G. (2020). Cognitive needs and use of social media: A comparative study of gratifications sought and gratification obtained. *Information Discovery and Delivery*, *48*(2), 79-90. https://doi.org/10.1108/idd-11-2019-0081

I

Ibanez-Sanchez, S., Orus Sanclemente, C., & Flavián, C. (2022). Augmented Reality Filters on Social Media. Analyzing the Drivers of Playability Based on Uses and Gratifications Theory. *Analyzing the Drivers of Playability Based on Uses and Gratifications Theory (June 4, 2022). Ibáñez-Sánchez, S., Orus, C., & Flavian, C*, *39*(3), 559-578. https://doi.org/10.1002/mar.21639

Imamura, F., Micha, R., Khatibzadeh, S., Fahimi, S., Shi, P., Powles, J., & Mozaffarian, D. (2015). Dietary quality among men and women in 187 countries in 1990 and 2010: a systematic assessment. *The lancet global health*, *3*(3), e132-e142. https://doi.org/10.1016/S2214-109X(14)70381-X

Inglis, V., Ball, K., & Crawford, D. (2005). Why do women of low socioeconomic status have poorer dietary behaviours than women of higher socioeconomic status? A qualitative exploration. *Appetite*, *45*(3), 334-343. https://doi.org/10.1016/j.appet.2005.05.003

J

Jacobs, R. J., Lou, J. Q., Ownby, R. L., & Caballero, J. (2016). A systematic review of eHealth interventions to improve health literacy. *Health informatics journal*, *22*(2), 81-98. https://doi.org/10.1177/1460458214534092

Jenkin, G., Madhvani, N., Signal, L., & Bowers, S. (2014). A systematic review of persuasive marketing techniques to promote food to children on television. *Obesity Reviews*, *15*(4), 281-293. https://doi.org/10.1111/obr.12141

Jones, M., Freeth, E. C., Hennessy-Priest, K., & Costa, R. J. (2013). A systematic cross-sectional analysis of British based celebrity chefs' recipes: is there cause for public health concern. *Food Public Health*, *3*, 100-110. https://doi.org/10.5923/fph.20130302.04

Jung, J., Barron, D., Lee, Y.-A., & Swami, V. (2022). Social media usage and body image: Examining the mediating roles of internalization of appearance ideals and social comparisons in young women. *Computers in human behavior*, *135*, 107357. https://doi.org/10.1016/j.chb.2022.107357

K

Kabir, A., Miah, S., & Islam, A. (2018). Factors influencing eating behavior and dietary intake among resident students in a public university in Bangladesh: A qualitative study. *PloS one*, *13*(6), e0198801. https://doi.org/10.1371/journal.pone.0198801

Kaiser, H. F. (1960). The Application of Electronic Computers to Factor Analysis. *Educational and Psychological Measurement*, *20*(1), 141-151. https://doi.org/10.1177/001316446002000116

Kaiser, H. F. (1970). A second generation little jiffy. *Psychometrika*, *35*(4), 401-415. https://doi.org/10.1007/BF02291817

Kapetanaki, A. B., Brennan, D. R., & Caraher, M. (2014). Social marketing and healthy eating: findings from young people in Greece. *International Review on Public and Nonprofit Marketing*, *11*, 161-180. https://doi.org/10.1007/s12208-013-0112-x

Katz, E., Blumler, J. G., & Gurevitch, M. (1973). Uses and gratifications research. *The public opinion quarterly*, *37*(4), 509-523. https://www.jstor.org/stable/2747854?seq=1

Kelly, R. K., & Nash, R. (2021). Food literacy interventions in elementary schools: a systematic scoping review. *Journal of School Health*, *91*(8), 660-669. https://doi.org/10.1111/josh.13053

Ki, C.-W., Chow, T. C., & Li, C. (2022). Bridging the Trust Gap in Influencer Marketing: Ways to Sustain Consumers' Trust and Assuage Their Distrust in the Social Media Influencer Landscape. *International Journal of Human–Computer Interaction*, *39*(17), 1-16. https://doi.org/10.1080/10447318.2022.2097785

Ki, C.-W. C., Cuevas, L. M., Chong, S. M., & Lim, H. (2020). Influencer marketing: Social media influencers as human brands attaching to followers and yielding positive marketing results by fulfilling needs. *Journal of Retailing and Consumer Services*, *55*, 102133. https://doi.org/10.1016/j.jretconser.2020.102133

Ki, C. W. C., & Kim, Y. K. (2019). The mechanism by which social media influencers persuade consumers: The role of consumers' desire to mimic. *Psychology & Marketing*, *36*(10), 905-922. https://doi.org/10.1002/mar.21244

Kim, D. Y., & Kim, H.-Y. (2021). Influencer advertising on social media: The multiple inference model on influencer-product congruence and sponsorship disclosure. *Journal of business research*, *130*, 405-415. https://doi.org/10.1016/j.jbusres.2020.02.020

Kim, S. H., & Utz, S. (2019). Effectiveness of a social media–based, health literacy–sensitive diabetes self-management intervention: a randomized controlled trial. *Journal of Nursing Scholarship*, *51*(6), 661-669. https://doi.org/10.1111/jnu.12521

Kim, H., Jang, S. M., Kim, S.-H., & Wan, A. (2018). Evaluating sampling methods for content analysis of Twitter data. *Social Media+ Society*, *4*(2), 1-10. https://doi.org/10.1177/2056305118772836

Kim, M., & Kim, J. (2020). How does a celebrity make fans happy? Interaction between celebrities and fans in the social media context. *Computers in human behavior*, *111*, 106419. https://doi.org/10.1016/j.chb.2020.106419

Kircaburun, K., Harris, A., Calado, F., & Griffiths, M. D. (2021). The psychology of mukbang watching: A scoping review of the academic and non-academic literature. *International Journal of Mental Health and Addiction*, *19*(4), 1190-1213. https://doi.org/10.1007/s11469-019-00211-0

Kirkwood, K. (2018). Integrating digital media into everyday culinary practices. *Communication Research and Practice*, *4*(3), 277-290. https://doi.org/10.1080/22041451.2018.1451210

Klassen, K. M., Douglass, C. H., Brennan, L., Truby, H., & Lim, M. S. (2018). Social media use for nutrition outcomes in young adults: a mixed-methods systematic review. *International Journal of Behavioral Nutrition and Physical Activity*, *15*(1), 70. https://doi.org/10.1186/s12966-018-0696-y

Knobloch-Westerwick, S. (2014). *Choice and preference in media use: Advances in selective exposure theory and research*.

Knol, L. L., Robb, C. A., McKinley, E. M., & Wood, M. (2019). Very low food security status is related to lower cooking self-efficacy and less frequent food preparation behaviors among college students. *Journal of nutrition education and behavior*, *51*(3), 357-363. https://doi.org/10.1016/j.jneb.2018.10.009

Kok, G., Gottlieb, N. H., Peters, G.-J. Y., Mullen, P. D., Parcel, G. S., Ruiter, R. A., Fernández, M. E., Markham, C., & Bartholomew, L. K. (2015). A taxonomy of behaviour change methods: an intervention mapping approach. *Health psychology review*, *10*(3), 297-312. https://doi.org/10.1080/17437199.2015.1077155

Koo, T. K., & Li, M. Y. (2016). A Guideline of Selecting and Reporting Intraclass Correlation Coefficients for Reliability Research. *Journal of Chiropractic Medicine*, *15*(2), 155-163. https://doi.org/10.1016/j.jcm.2016.02.012

Krause, C., Sommerhalder, K., Beer-Borst, S., & Abel, T. (2018). Just a subtle difference? Findings from a systematic review on definitions of nutrition literacy and food literacy. *Health promotion international*, *33*(3), 378-389. https://doi.org/10.1093/heapro/daw084

Krcmar, M. (2017). Uses and gratifications: basic concepts. In P. Rössler (Ed.), *The international encyclopedia of media effects (Vol. 4)* (pp. 1-13). John Wiley & Sons, Inc. https://doi.org/10.1002/9781118783764.wbieme0045

Krcmar, M., & Strizhakova, Y. (2009). Uses and gratifications as media choice. In T. Hartmann (Ed.), *Media Choice* (pp. 67-83). Routledge.

Krueger, R. A. (2014). *Focus groups: A practical guide for applied research*. Sage publications.

Ladhari, R., Rioux, M. C., Souiden, N., & Chiadmi, N.-E. (2019). Consumers' motives for visiting a food retailer's Facebook page. *Journal of Retailing and Consumer Services*, *50*, 379-385. https://doi.org/10.1016/j.jretconser.2018.07.013

Lambert, M., Chivers, P., & Farringdon, F. (2019). In their own words: A qualitative study exploring influences on the food choices of university students. *Health Promotion Journal of Australia*, *30*(1), 66-75. https://doi.org/10.1002/hpja.180

Lang, T., & Caraher, M. (2001). Is there a culinary skills transition? Data and debate from the UK about changes in cooking culture. *Journal of the HEIA*, *8*(2), 2-14. https://www.researchgate.net/publication/238679603_Is_there_a_culinary_skills_transition_Data_and_debate_from_the_UK_about_changes_in_cooking_culture

LaRose, R. (2010). The problem of media habits. *Communication Theory*, *20*(2), 194-222. https://doi.org/10.1111/j.1468-2885.2010.01360.x

Larson, N. I., Perry, C. L., Story, M., & Neumark-Sztainer, D. (2006). Food preparation by young adults is associated with better diet quality. *Journal of the American Dietetic Association*, *106*(12), 2001-2007. https://doi.org/10.1016/j.jada.2006.09.008

Lavelle, F., Bucher, T., Dean, M., Brown, H. M., Rollo, M. E., & Collins, C. E. (2020). Diet quality is more strongly related to food skills rather than cooking skills confidence: Results from a national cross-sectional survey. *Nutrition & Dietetics*, *77*(1), 112-120. https://doi.org/10.1111/1747-0080.12583

Lee, S., & Kim, E. (2020). Influencer marketing on Instagram: How sponsorship disclosure, influencer credibility, and brand credibility impact the effectiveness of Instagram promotional post. *Journal of Global Fashion Marketing*, *11*(3), 232-249. https://doi.org/10.1080/20932685.2020.1752766

Leer, J. (2018). Gender and food television: A transnational perspective on the gendered identities of televised celebrity chefs. In K. Lebesco & P. Naccarato (Eds.), *The Bloomsbury handbook of food and popular culture* (pp. 13-26).

Leer, J., & Krogager, S. G. S. (2021). *Research methods in digital food studies*. Routledge.

Leer, J., & Povlsen, K. K. (2016). *Food and media*: *Practices, distinctions and heterotopias*. Routledge.

Leung, F. F., Gu, F. F., & Palmatier, R. W. (2022). Online influencer marketing. *Journal of the Academy of Marketing Science*, *50*(2), 226-251. https://doi.org/10.1007/s11747-021-00829-4

Levy, J., & Auld, G. (2004). Cooking classes outperform cooking demonstrations for college sophomores. *Journal of nutrition education and behavior*, *36*(4), 197-203. https://doi.org/10.1016/s1499-4046(06)60234-0

Lewis, T. (2018). Digital food: from paddock to platform. *Communication Research and Practice*, *4*(3), 212-228. https://doi.org/10.1080/22041451.2018.1476795

Lewis, T. (2020a). *Digital food*: *from paddock to platform*. Bloomsbury Publishing.

Lewis, T. (2020b). Eating and Cooking Online: Cultural Economies of Video Sharing from YouTube to Youku

In *Digital food: from paddock to platform*. Bloomsbury Publishing.

Lim, S., Hill, B., Pirotta, S., O'Reilly, S., & Moran, L. (2020). What are the most effective behavioural strategies in changing postpartum women's physical activity and healthy eating behaviours? A systematic review and meta-analysis. *Journal of Clinical Medicine*, *9*(1), 237. https://doi.org/10.3390/jcm9010237

Liu, J., & Bailey, R. L. (2020). Investigating the effect of use and social cues in food advertisements on attention, feelings of social support, and purchase intention. *Health communication*, *35*(13), 1614-1622. https://doi.org/10.1080/10410236.2019.1654174

Livingstone, S. (2004). Media literacy and the challenge of new information and communication technologies. *The communication review*, *7*(1), 3-14. https://doi.org/10.1080/10714420490280152

Lofgren, J. (2013). Food blogging and food-related media convergence. *M/C Journal*, *16*(3). https://doi.org/10.5204/mcj.638

Lonsdale, A. J., & North, A. C. (2011). Why do we listen to music? A uses and gratifications analysis. *British journal of psychology*, *102*(1), 108-134. https://doi.org/10.1348/000712610X506831

Looyestyn, J., Kernot, J., Boshoff, K., & Maher, C. (2018). A web-based, social networking beginners' running intervention for adults aged 18 to 50 years delivered via a Facebook group: randomized controlled trial. *Journal of medical Internet research*, *20*(2), e7862. https://doi.org/10.2196/jmir.7862

Lou, C., Tandoc Jr, E. C., Hong, L. X., Pong, X. Y., Lye, W. X., & Sng, N. G. (2021). When Motivations Meet Affordances: News Consumption on Telegram. *Journalism Studies*, *22*(7), 934-952. https://doi.org/10.1080/1461670X.2021.1906299

Lupton, D. (2020). Understanding digital food cultures. In *Digital Food Cultures*.

Lutkenhaus, R. O., Jansz, J., & Bouman, M. P. (2019). Tailoring in the digital era: Stimulating dialogues on health topics in collaboration with social media influencers. *Digital health*, *5*, 2055207618821521. https://doi.org/10.1177/2055207618821521

Macevičiūtė, E., Wilson, T. D., & Manžuch, Z. (2019). Assessing the graphic questionnaire used in digital literacy training. *Issues in informing science and iformation technology*, *16*, 113-126. https://doi.org/10.28945/4301

Maibach, E. W., & Parrott, R. (1995). *Designing health messages: Approaches from communication theory and public health practice*. Sage. https://doi.org/10.4135/9781452233451

Malan, H., Watson, T. D., Slusser, W., Glik, D., Rowat, A. C., & Prelip, M. (2020). Challenges, opportunities, and motivators for developing and applying food literacy in a university setting: A qualitative study. *Journal of the Academy of Nutrition and Dietetics*, *120*(1), 33-44. https://doi.org/10.1016/j.jand.2019.06.003

Marquis, M. (2005). Exploring convenience orientation as a food motivation for college students living in residence halls. *International journal of consumer studies*, *29*(1), 55-63. https://doi.org/10.1111/j.1470-6431.2005.00375.x

Matwick, K., & Matwick, K. (2014). Storytelling and synthetic personalization in television cooking shows. *Journal of pragmatics*, *71*, 151-159. https://doi.org/10.1016/j.pragma.2014.08.005

McGowan, L., Caraher, M., Raats, M., Lavelle, F., Hollywood, L., McDowell, D., Spence, M., McCloat, A., Mooney, E., & Dean, M. (2017). Domestic cooking and food skills: A review. *Critical reviews in food science and nutrition*, *57*(11), 2412-2431. https://doi.org/10.1080/10408398.2015.1072495

Meier, A., & Krause, H.-V. (2022). Does passive social media use harm well-being? An adversarial review. *Journal of Media Psychology*: *Theories, Methods, and Applications*, *35*(3). https://doi.org/10.1027/1864-1105/a000358

Melville, N., Fairchild, R., & Evans, E. W. (2023). Food safety communication in YouTube video recipes. *British Food Journal*, *125*(7), 2628-2643. https://doi.org/https://doi.org/10.1108/BFJ-02-2022-0143

Mertens, E., & Beuckels, E. (2023). Momfluencers als entertainmenteducators ter promotie van borstvoeding: een conceptueel model. *Tijdschrift voor Communicatiewetenschap*, *51*(3), 303-322. https://doi.org/10.5117/TCW2023.3.005.MERT

Meyrowitz, J. (1994). Medium theory. *Communication theory today*, 50-77.

Michie, S., Ashford, S., Sniehotta, F. F., Dombrowski, S. U., Bishop, A., & French, D. P. (2011). A refined taxonomy of behaviour change techniques to help people change their physical activity and healthy eating behaviours: the CALO-RE taxonomy. *Psychology & health*, *26*(11), 1479-1498. https://doi.org/10.1080/08870446.2010.540664

Michie, S., Richardson, M., Johnston, M., Abraham, C., Francis, J., Hardeman, W., Eccles, M. P., Cane, J., & Wood, C. E. (2013). The behavior change technique taxonomy (v1) of 93 hierarchically clustered techniques: building an international consensus for the reporting of behavior change interventions. *Annals of behavioral medicine*, *46*(1), 81-95. https://doi.org/10.1007/s12160-013-9486-6

Michie, S., Van Stralen, M. M., & West, R. (2011). The behaviour change wheel: a new method for characterising and designing behaviour change interventions. *Implementation Science*, *6*(1), 1-12. https://doi.org/10.1186/1748-5908-6-42

Michie, S., West, R., Sheals, K., & Godinho, C. A. (2018). Evaluating the effectiveness of behavior change techniques in health-related behavior: a scoping review of methods used. *Translational behavioral medicine*, *8*(2), 212-224. https://doi.org/10.1093/tbm/ibx019

Molenaar, A., Saw, W. Y., Brennan, L., Reid, M., Lim, M. S., & McCaffrey, T. A. (2021). Effects of advertising: A qualitative analysis of young adults' engagement with social media about food. *Nutrients*, *13*(6), 1934. https://doi.org/10.3390/nu13061934

Morrison, E., & Young, I. (2019). The Missing Ingredient: Food Safety Messages on Popular Recipe Blogs. *Food Protection Trends*, *39*(1).

Moyer-Gusé, E. (2008). Toward a theory of entertainment persuasion: Explaining the persuasive effects of entertainment-education messages. *Communication Theory*, *18*(3), 407-425. https://doi.org/10.1111/j.1468-2885.2008.00328.x

Munt, A., Partridge, S., & Allman-Farinelli, M. (2017). The barriers and enablers of healthy eating among young adults: A missing piece of the obesity puzzle: A scoping review. *Obesity Reviews*, *18*(1), 1-17. https://doi.org/10.1111/obr.12472

Murimi, M. W. (2013). Healthy literacy, nutrition education, and food literacy. *Journal of nutrition education and behavior*, *45*(3), 195. https://doi.org/10.1016/j.jneb.2013.03.014

N

Nabi, R. L., Stitt, C. R., Halford, J., & Finnerty, K. L. (2006). Emotional and cognitive predictors of the enjoyment of reality-based and fictional television programming: An elaboration of the uses and gratifications perspective. *Media psychology*, *8*(4), 421-447. https://doi.org/10.1207/s1532785xmep0804_5

Nederlands Voedingsstoffenbestand (NEVO). (2021). *NEVO-online versie 2021 7.0* https://www.rivm.nl/documenten/nevo-online-versie

Nelson, M., Story, M., Larson, N. I., Neumark-Sztainer, D., & Lytle, L. A. (2008). Emerging adulthood and college-aged youth: an overlooked age for weight-related behavior change. *Obesity*, *16*(10), 2205. https://doi.org/10.1038/oby.2008.365

Ngqangashe, Y., De Backer, C., Matthys, C., & Hermans, N. (2018). Investigating the nutrient content of food prepared in popular children's TV cooking shows. *British Food Journal*, *120*(9), 2102-2115. https://doi.org/10.1108/BFJ-02-2018-0121

Ngqangashe, Y., & De Backer, C. J. (2021). The differential effects of viewing short-form online culinary videos of fruits and vegetables versus sweet snacks on adolescents' appetites. *Appetite*, *166*, 105436. https://doi.org/10.1016/j.appet.2021.105436

Ngqangashe, Y., De Backer, C. J., Hudders, L., Hermans, N., Vandebosch, H., & Smits, T. (2018). An experimental investigation of the effect of TV cooking show consumption on children's food choice behaviour. *International journal of consumer studies*, *42*(4), 402-408. https://doi.org/10.1111/ijcs.12433

Ngqangashe, Y., Maldoy, K., De Backer, C. J., & Vandebosch, H. (2021). Exploring adolescents' motives for food media consumption using the theory of uses and gratifications. *Communications*, *47*(1). https://doi.org/10.1515/commun-2019-0164

Ngqangashe, Y., Maldoy, K., De Backer, C. J. S., & Vandebosch, H. (2022). Exploring adolescents' motives for food media consumption using the theory of uses and gratifications. *Communications*, *47*(1), 73-92. https://doi.org/10.1515/commun-2019-0164

Niemeier, H. M., Raynor, H. A., Lloyd-Richardson, E. E., Rogers, M. L., & Wing, R. R. (2006). Fast food consumption and breakfast skipping: predictors of weight gain from adolescence to adulthood in a nationally representative sample. *Journal of adolescent Health*, *39*(6), 842-849. https://doi.org/10.1016/j.jadohealth.2006.07.001

Noar, S. M. (2006). A 10-year retrospective of research in health mass media campaigns: where do we go from here? *Journal of Health Communication*, *11*(1), 21-42. https://doi.org/10.1080/10810730500461059

Nour, M., Yeung, S. H., Partridge, S., & Allman-Farinelli, M. (2017). A narrative review of social media and game-based nutrition interventions targeted at young adults. *Journal of the Academy of Nutrition and Dietetics*, *117*(5), 735-752. e710. https://doi.org/10.1016/j.jand.2016.12.014

Nubel. (2020). *The Nubel Foodplanner* https://www.nubel.be/eng/default.aspx

Nutbeam, D. (2000). Health literacy as a public health goal: a challenge for contemporary health education and communication strategies into the 21st century. *Health promotion international*, *15*(3), 259-267. https://doi.org/10.1093/heapro/15.3.259

O

O'Connor, B. P. (2000). SPSS and SAS programs for determining the number of components using parallel analysis and Velicer's MAP test. *Behavior Research Methods, Instruments, & Computers*, *32*(3), 396-402. https://doi.org/10.3758/bf03200807

O'Connor, C., & Joffe, H. (2020). Intercoder reliability in qualitative research: debates and practical guidelines. *International Journal of Qualitative Methods*, *19*, 1609406919899220. https://doi.org/10.1177/1609406919899220

Oeldorf-Hirsch, A., & Sundar, S. S. (2016). Social and technological motivations for online photo sharing. *Journal of Broadcasting & Electronic Media*, *60*(4), 624-642. https://doi.org/10.1080/08838151.2016.1234478

Onwezen, M. C., Reinders, M. J., Verain, M. C. D., & Snoek, H. M. (2019). The development of a single-item Food Choice Questionnaire. *Food Quality and Preference*, *71*, 34-45. https://doi.org/10.1016/j.foodqual.2018.05.005

Ouvrein, G., Pabian, S., Giles, D., Hudders, L., & De Backer, C. (2021). The web of influencers. A marketing-audience classification of (potential) social media influencers. *Journal of marketing management*, *37*(13-14), 1313-1342. https://doi.org/0.1080/0267257X.2021.1912142

P

Page, R. (2012). The linguistics of self-branding and micro-celebrity in Twitter: The role of hashtags. *Discourse & communication*, *6*(2), 181-201. https://doi.org/10.1177/1750481312437441

Page, R. (2022). Co-tellership in social media storytelling. In P. dawson & M. Makela (Eds.), *The Routledge Companion to Narrative Theory* (pp. 119-133). Routledge.

Page, R. M., & Brewster, A. (2007). Emotional and rational product appeals in televised food advertisements for children: analysis of commercials shown on US broadcast networks. *Journal of Child Health Care*, *11*(4), 323-340. https://doi.org/10.1177/1367493507082758

Palmgreen, P. (1984). Uses and gratifications: A theoretical perspective. *Annals of the international communication association*, *8*(1), 20-55. https://doi.org/10.1080/23808985.1984.11678570

Palmgreen, P., & Rayburn, J. D. (1979). Uses and Gratifications and Exposure To Public Television: A Discrepancy Approach. *Communication Research*, *6*(2), 155-179. https://doi.org/10.1177/009365027900600203

Palmgreen, P., Wenner, L. A., & Rayburn, J. D. (1980). Relations between gratifications sought and obtained: A study of television news. *Communication Research*, *7*(2), 161-192. https://doi.org/10.1177/009365028000700202

Palmgreen, P. C., Wenner, L. A., & Rosengren, K. E. (1985). Uses and Gratification Research: The Past Ten Years. In *Media gratifications research : current perspectives*

Palumbo, R., Adinolfi, P., Annarumma, C., Catinello, G., Tonelli, M., Troiano, E., Vezzosi, S., & Manna, R. (2019). Unravelling the food literacy puzzle: Evidence from Italy. *Food Policy*, *83*, 104-115. https://doi.org/10.1016/j.foodpol.2018.12.004

Park, D. Y., & Goering, E. M. (2016). The Health-Related Uses and Gratifications of YouTube: Motive, Cognitive Involvement, Online Activity, and Sense of Empowerment. *Journal of Consumer Health on the Internet*, *20*(1-2), 52-70. https://doi.org/10.1080/15398285.2016.1167580

Park, S., & Lee, J. Y. (2023). Incidental News Exposure on Facebook and Its Relation to Trust in News. *Social Media+ Society*, *9*(1), 20563051231158823. https://doi.org/10.1177/20563051231158823

Passamonti, L., Rowe, J. B., Schwarzbauer, C., Ewbank, M. P., Von Dem Hagen, E., & Calder, A. J. (2009). Personality Predicts the Brain's Response to Viewing Appetizing Foods: The Neural Basis of a Risk Factor for Overeating. *Journal of Neuroscience*, *29*(1), 43-51. https://doi.org/10.1523/jneurosci.4966-08.2009

Paul, B., & Shim, J. W. (2008). Gender, sexual affect, and motivations for Internet pornography use. *International Journal of Sexual Health*, *20*(3), 187-199. https://doi.org/10.1080/19317610802240154

Pelletier, J. E., Graham, D. J., & Laska, M. N. (2014). Social norms and dietary behaviors among young adults. *American journal of health behavior*, *38*(1), 144-152. https://doi.org/10.5993/AJHB.38.1.15

Pelletier, M. J., Krallman, A., Adams, F. G., & Hancock, T. (2020). One size doesn't fit all: a uses and gratifications analysis of social media platforms. *Journal of Research in interactive Marketing*, *14*(2), 269-284. https://doi.org/10.1108/JRIM-10-2019-0159

Pember, S. E., Zhang, X., Baker, K., & Bissell, K. (2018). Application of the theory of planned behavior and uses and gratifications theory to food-related photo-sharing on social media. *Californian Journal of Health Promotion*, *16*(1), 91-98. https://doi.org/10.32398/cjhp.v16i1.2128

Peng, Y., & Jemmott, J. B. (2018). Feast for the Eyes: Effects of Food Perceptions and Computer Vision Features on Food Photo Popularity. *International Journal of Communication (19328036)*, *12*. https://doi.org/1932–8036/20180005

Perrin, A. (2015). *Social media usage* (Pew research center, Issue.

Perry, E. A., Thomas, H., Samra, H. R., Edmonstone, S., Davidson, L., Faulkner, A., Petermann, L., Manafò, E., & Kirkpatrick, S. I. (2017). Identifying attributes of food literacy: a scoping review. *Public Health Nutrition*, *20*(13), 2406-2415. https://doi.org/10.1017/S1368980017001276

Perse, E. M., & Rubin, A. M. (1990). Chronic loneliness and television use. *Journal of Broadcasting & Electronic Media*, *34*(1), 37-53. https://doi.org/10.1080/08838159009386724

Petty, R. E., Cacioppo, J. T., & Goldman, R. (1981). Personal involvement as a determinant of argument-based persuasion. *Journal of personality and social psychology*, *41*(5), 847-855. https://doi.org/10.1037/0022-3514.41.5.847

PEW Research Center. (2021). *Social Media Use in 2021*. https://www.pewresearch.org/fact-tank/2021/10/07/7-facts-about-americans-and-instagram/

Pilgrim, K., & Bohnet-Joschko, S. (2019). Selling health and happiness how influencers communicate on Instagram about dieting and exercise: Mixed methods research. *BMC Public Health*, *19*(1), 1-9. https://doi.org/10.1186/s12889-019-7387-8

Poelman, M. P., Dijkstra, S. C., Sponselee, H., Kamphuis, C., Battjes-Fries, M. C., Gillebaart, M., & Seidell, J. C. (2018). Towards the measurement of food literacy with respect to healthy eating: The development and validation of the self perceived food literacy scale among an adult sample in the Netherlands. *International Journal of Behavioral Nutrition and Physical Activity*, *15*(1), 1-12. https://doi.org/10.1186/s12966-018-0687-z

Polit, D. F. (2014). Getting serious about test–retest reliability: a critique of retest research and some recommendations. *Quality of Life Research*, *23*(6), 1713-1720. https://doi.org/10.1007/s11136-014-0632-9

Poobalan, A. S., Aucott, L. S., Clarke, A., & Smith, W. C. S. (2014). Diet behaviour among young people in transition to adulthood (18–25 year olds): a mixed method study. *Health Psychology and Behavioral Medicine: an Open Access Journal*, *2*(1), 909-928. https://doi.org/10.1080/21642850.2014.931232

Pope, L., Latimer, L., & Wansink, B. (2015). Viewers vs. Doers. The relationship between watching food television and BMI. *Appetite*, *90*, 131-135. https://doi.org/10.1016/j.appet.2015.02.035

Potter, R. F., & Bolls, P. (2012). *Psychophysiological measurement and meaning: Cognitive and emotional processing of media*. Routledge.

Potter, W. J. (2010). The state of media literacy. *Journal of Broadcasting & Electronic Media*, *54*(4), 675-696. https://doi.org/10.1080/08838151.2011.521462

Powell, P. K., Durham, J., & Lawler, S. (2019). Food choices of young adults in the United States of America: a scoping review. *Advances in Nutrition*, *10*(3), 479-488. https://doi.org/10.1093/advances/nmy116

Presseau, J., Ivers, N. M., Newham, J. J., Knittle, K., Danko, K. J., & Grimshaw, J. M. (2015). Using a behaviour change techniques taxonomy to identify active ingredients within trials of implementation interventions for diabetes care. *Implementation Science*, *10*, 1-10. https://doi.org/10.1186/s13012-015-0248-7

Proesmans, V. (2023). *Cooking Up a Media Storm: the association between food media and our dietary behavior* Ghent University.

Proesmans, V. L., Vermeir, I., Teughels, N., & Geuens, M. (2023). Food writings in a postmodern society: a discourse analysis of influencer and celebrity chef cookbooks in Belgium. *Frontiers in Communication*, *8*, 1205390. https://doi.org/10.3389/fcomm.2023.1205390

Q

Quaidoo, E. Y., Ohemeng, A., & Amankwah-Poku, M. (2018). Sources of nutrition information and level of nutrition knowledge among young adults in the Accra metropolis. *BMC Public Health*, *18*, 1-7. https://doi.org/10.1186/s12889-018-6159-1

Qutteina, Y., Hallez, L., Mennes, N., De Backer, C., & Smits, T. (2019). What do adolescents see on social media? A diary study of food marketing images on social media. *Frontiers in psychology*, *10*, 2637. https://doi.org/10.3389/fpsyg.2019.02637

Qutteina, Y., Hallez, L., Raedschelders, M., De Backer, C., & Smits, T. (2021). Food for teens: how social media is associated with adolescent eating outcomes. *Public Health Nutrition*, 1-13.

Qutteina, Y., Hallez, L., Raedschelders, M., De Backer, C., & Smits, T. (2022). Food for teens: how social media is associated with adolescent eating outcomes. *Public Health Nutrition*, *25*(2), 290-302. https://doi.org/10.1017/S1368980021003116

Qutteina, Y., Smits, T., & De Backer, C. (2022). *#FoodForTeens: Social Media Food Marketing Communication and Adolescent Eating*

R

Ragelienė, T., & Grønhøj, A. (2021). The role of peers, siblings and social media for children's healthy eating socialization: a mixed methods study. *Food Quality and Preference*, *93*, 104255. https://doi.org/10.1016/j.foodqual.2021.104255

Ranpariya, V., Chu, B., Fathy, R., & Lipoff, J. B. (2020). Dermatology without dermatologists? Analyzing Instagram influencers with dermatology-related hashtags. *Journal of the American Academy of Dermatology*, *83*(6), 1840-1842. https://doi.org/10.1016/j.jaad.2020.05.039

Rathnayake, C., & Winter, J. S. (2018). Carrying forward the uses and grats 2.0 agenda: An affordance-driven measure of social media uses and gratifications. *Journal of Broadcasting & Electronic Media*, *62*(3), 371-389. https://doi.org/10.1080/08838151.2018.1451861

Rees, J., Fu, S. C., Lo, J., Sambell, R., Lewis, J. R., Christophersen, C. T., Byrne, M. F., Newton, R. U., Boyle, S., & Devine, A. (2022). How a 7-week food literacy cooking program affects cooking confidence and mental health: Findings of a quasi-experimental controlled intervention trial. *Frontiers in Nutrition*, *9*, 360. https://doi.org/10.3389/fnut.2022.802940

Reicks, M., Trofholz, A. C., Stang, J. S., & Laska, M. N. (2014). Impact of cooking and home food preparation interventions among adults: outcomes and implications for future programs. *Journal of nutrition education and behavior*, *46*(4), 259-276. https://doi.org/10.1016/j.jneb.2014.02.001

Reinhard, C. D., & Ganguly, L. (2020). Learning how to cook without lifting a knife: Food television, foodies, and food literacy. In *Eating Fandom* (pp. 71-88). Routledge.

Rodgers, R. F., McLean, S. A., Gordon, C. S., Slater, A., Marques, M. D., Jarman, H. K., & Paxton, S. J. (2021). Development and Validation of the Motivations for Social Media Use Scale (MSMU) Among Adolescents. *Adolescent Research Review*, *6*(4), 425-435. https://doi.org/10.1007/s40894-020-00139-w

Roest, H., & Rindfleisch, A. (2010). The influence of quality cues and typicality cues on restaurant purchase intention. *Journal of Retailing and Consumer Services*, *17*(1), 10-18. https://doi.org/10.1016/j.jretconser.2009.08.007

Rogers, A., Wilkinson, S., Downie, O., & Truby, H. (2022). Communication of nutrition information by influencers on social media: A scoping review. *Health Promotion Journal of Australia*, *33*(3), 657-676. https://doi.org/10.1002/hpja.563

Rokito, S., Choi, Y. H., Taylor, S. H., & Bazarova, N. N. (2019). Over-gratified, under-gratified, or just right? Applying the gratification discrepancy approach to investigate recurrent Facebook use. *Computers in human behavior*, *93*, 76-83. https://doi.org/10.1016/j.chb.2018.11.041

Rosas, R., Pimenta, F., Leal, I., & Schwarzer, R. (2019). FOODLIT-PRO: Food literacy domains, influential factors and determinants—A qualitative study. *Nutrients*, *12*(1), 88. https://doi.org/10.3390/nu12010088

Rosengren, K. E. (1974). Uses and gratifications: A paradigm outlined. In J. G. Blumler & E. Katz (Eds.), *The uses of mass communications*: *Current perspectives on gratifications research* (Vol. 3, pp. 269-286).

Rosengren, K. E., Wenner, L. A., & Palmgreen, P. C. (1985). *Media gratifications research* : *current perspectives*.

Rounsefell, K., Gibson, S., McLean, S., Blair, M., Molenaar, A., Brennan, L., Truby, H., & McCaffrey, T. A. (2020). Social media, body image and food choices in healthy young adults: A mixed methods systematic review. *Nutrition & Dietetics*, *77*(1), 19-40. https://doi.org/10.1111/1747-0080.12581

Rousseau, S. (2013). *Food media*: *Celebrity chefs and the politics of everyday interference*. Berg.

Rubin, A. M. (1983). Television uses and gratifications: The interactions of viewing patterns and motivations. *Journal of Broadcasting & Electronic Media*, *27*(1), 37-51. https://doi.org/10.1080/08838158309386471

Rubin, A. M. (1993). Audience activity and media use. *Communications Monographs*, *60*(1), 98-105. https://doi.org/10.1080/03637759309376300

Rubin, A. M. (2009). Uses-and-gratifications perspective on media effects. In J. Bryant & M. B. Oliver (Eds.), *Media effects: Advances in theory and research* (pp. 165–184). New York, NY: Routledge.

Rubin, R. B., & McHugh, M. P. (1987). Development of parasocial interaction relationships. *Journal of Broadcasting & Electronic Media*, *31*(3), 279-292. https://doi.org/10.1080/08838158709386664

Ruggiero, T. E. (2000). Uses and gratifications theory in the 21st century. *Mass communication & society*, *3*(1), 3-37. https://doi.org/10.1207/S15327825MCS0301_02

Ruiz-Gomez, A. (2019). Digital Fame and Fortune in the age of Social Media: A Classification of social media influencers. *aDResearch: Revista Internacional de Investigación en Comunicación*, *19*(19), 8-29. https://doi.org/10.7263/adresic-019-01

S

Sabbagh, C., Boyland, E., Hankey, C., & Parrett, A. (2020). Analysing credibility of UK social media influencers' weight-management blogs: a pilot study. *International journal of environmental research and public health*, *17*(23), 9022. https://doi.org/10.3390/ijerph17239022

Scharkow, M. (2019). The reliability and temporal stability of self-reported media exposure: A meta-analysis. *Communication Methods and Measures*, *13*(3), 198-211. https://doi.org/10.1080/19312458.2019.1594742

Schneider, E. P., McGovern, E. E., Lynch, C. L., & Brown, L. S. (2013). Do food blogs serve as a source of nutritionally balanced recipes? An analysis of 6 popular food blogs. *Journal of nutrition education and behavior*, *45*(6), 696-700. https://doi.org/10.1016/j.jneb.2013.07.002

Schouten, A. P., Janssen, L., & Verspaget, M. (2021). Celebrity vs. Influencer endorsements in advertising: the role of identification, credibility, and Product-Endorser fit. In S. Yoon, Y. K. Choi, & C. Taylor (Eds.), *Leveraged Marketing Communications* (pp. 208-231). Routledge.

Scott, K. (2018). "Hashtags work everywhere": The pragmatic functions of spoken hashtags. *Discourse, context & media*, *22*, 57-64. https://doi.org/10.1016/j.dcm.2017.07.002

Short, F. (2003). Domestic cooking skills: What are they? *Journal of the Home Economics Institute of Australia*, *10*(3), 13-22. https://search.informit.org/doi/abs/10.3316/aeipt.133139

Siegel, S., & Castellan, N. J. (1988). *Nonparametric statistics for the social sciences*. New York: McGraw-Hill.

Silva, N., Di Bonaventura, E., Byrnes, C., & Herbold, N. (2010). Are 30-minute cooking shows on the food network an option for dietitians to recommend during counseling? *Topics in Clinical Nutrition*, *25*(1), 70-74. https://doi.org/10.1097/TIN.0b013e3181d10856

Simeon, R., Dewidar, O., Trawin, J., Duench, S., Manson, H., Pardo, J. P., Petkovic, J., Roberts, J. H., Tugwell, P., & Yoganathan, M. (2020). Behavior change techniques included in reports of social media interventions for promoting health behaviors in adults: content analysis within a systematic review. *Journal of medical Internet research*, *22*(6), e16002. https://doi.org/10.2196/16002

Simões, P., Silva, A. G., Amaral, J., Queirós, A., Rocha, N. P., & Rodrigues, M. (2018). Features, behavioral change techniques, and quality of the most popular mobile apps to measure physical activity: systematic search in app stores. *JMIR mHealth and uHealth*, *6*(10), e11281. https://doi.org/10.2196/11281

Singhal, A., Cody, M. J., Rogers, E. M., & Sabido, M. (2003). *Entertainment-education and social change: History, research, and practice*. Routledge.

Slater, D. M., Peter, J., & Valkenburg, P. M. (2015). Message variability and heterogeneity: A core challenge for communication research. *Annals of the international communication association*, *39*(1), 3-31. https://doi.org/10.1080/23808985.2015.11679170

Slater, J., Falkenberg, T., Rutherford, J., & Colatruglio, S. (2018). Food literacy competencies: A conceptual framework for youth transitioning to adulthood. *International journal of consumer studies*, *42*(5), 547-556. https://doi.org/10.1111/ijcs.12471

Slater, M. D. (2007). Reinforcing spirals: The mutual influence of media selectivity and media effects and their impact on individual behavior and social identity. *Communication Theory*, *17*(3), 281-303. https://doi.org/10.1111/j.1468-2885.2007.00296.x

Slater, M. D. (2016). Combining content analysis and assessment of exposure through self-report, spatial, or temporal variation in media effects research. *Communication Methods and Measures*, *10*(2-3), 173-175. https://doi.org/10.1080/19312458.2016.1150969

Smith, G. (2008). Does gender influence online survey participation?: A record-linkage analysis of university faculty online survey response behavior. *ERIC document reproduction service no. ED 501717*.

Smith, J., Hewitt, B., & Skrbiš, Z. (2015). Digital socialization: young people's changing value orientations towards internet use between adolescence and early adulthood. *Information, Communication & Society*, *18*(9), 1022-1038. https://doi.org/10.1080/1369118X.2015.1007074

Smith, M. G. (2009). Food or nutrition literacy?: What concept should guide home economics education. *International Journal of Home Economics*, *2*(1), 48-64. https://doi.org/10.3316/INFORMIT.945412049227179

Smith, S. E., Della, L. J., Rajack-Talley, T., D'Silva, M. U., Potter, D. A., Markowitz, L. B., Craig, L., Cheatham, K., & Carthan, Q. (2013). Exploring media's impact on African American women's healthy food habits in Kentucky. *Journal of intercultural communication research*, *42*(3), 228-251. https://doi.org/10.1080/17475759.2013.823455

Snyder, L. B. (2007). Health communication campaigns and their impact on behavior. *Journal of nutrition education and behavior*, *39*(2), S32-S40. https://doi.org/10.1016/j.jneb.2006.09.004

Sogari, G., Velez-Argumedo, C., Gómez, M. I., & Mora, C. (2018). College students and eating habits: A study using an ecological model for healthy behavior. *Nutrients*, *10*(12), 1823. https://doi.org/10.3390/nu10121823

Sokolova, K., & Perez, C. (2021). You follow fitness influencers on YouTube. But do you actually exercise? How parasocial relationships, and watching fitness influencers, relate to intentions to exercise. *Journal of Retailing and Consumer Services*, *58*, 102276. https://doi.org/10.1016/j.jretconser.2020.102276

Spielvogel, I., Matthes, J., Naderer, B., & Karsay, K. (2018). A treat for the eyes. An eye-tracking study on children's attention to unhealthy and healthy food cues in media content. *Appetite*, *125*, 63-71. https://doi.org/10.1016/j.appet.2018.01.033

STATBEL. (2020). *Geboorten en vruchtbaarheid*. https://statbel.fgov.be/nl/themas/bevolking/geboorten-en-vruchtbaarheid#figures

STATBEL. (2023). *Huwelijken*. https://statbel.fgov.be/nl/themas/bevolking/partnerschap/huwelijken#news

Steils, N., & Obaidalahe, Z. (2020). "Social food": Food literacy co-construction and distortion on social media. *Food Policy*, *95*, 101932. https://doi.org/10.1016/j.foodpol.2020.101932

Stok, F. M., De Vet, E., de Ridder, D. T., & de Wit, J. B. (2016). The potential of peer social norms to shape food intake in adolescents and young adults: a systematic review of effects and moderators. *Health psychology review*, *10*(3), 326-340. https://doi.org/10.1080/17437199.2016.1155161

Stok, F. M., Renner, B., Clarys, P., Lien, N., Lakerveld, J., & Deliens, T. (2018). Understanding eating behavior during the transition from adolescence to young adulthood: A literature review and perspective on future research directions. *Nutrients*, *10*(6), 667. https://doi.org/10.3390/nu10060667

Strecher, V. J., McEvoy DeVellis, B., Becker, M. H., & Rosenstock, I. M. (1986). The role of self-efficacy in achieving health behavior change. *Health education quarterly*, *13*(1), 73-92. https://doi.org/10.1177/109019818601300108

Sundar, S. S., & Limperos, A. M. (2013). Uses and grats 2.0: New gratifications for new media. *Journal of Broadcasting & Electronic Media*, *57*(4), 504-525. https://doi.org/10.1080/08838151.2013.845827

Sundermann, G., & Raabe, T. (2019). Strategic communication through social media influencers: Current state of research and desiderata. *International Journal of Strategic Communication*, *13*(4), 278-300. https://doi.org/10.1080/1553118x.2019.1618306

Surgenor, D., Hollywood, L., Furey, S., Lavelle, F., McGowan, L., Spence, M., Raats, M., McCloat, A., Mooney, E., & Caraher, M. (2017). The impact of video technology on learning: A cooking skills experiment. *Appetite*, *114*, 306-312. https://doi.org/10.1016/j.appet.2017.03.037

Syed, M. (2016). Emerging adulthood: Developmental stage, theory, or nonsense. In J. J. Arnett (Ed.), *The Oxford handbook of emerging adulthood* (pp. 11-25).

Tafesse, W., & Wood, B. P. (2021). Followers' engagement with instagram influencers: The role of influencers' content and engagement strategy. *Journal of Retailing and Consumer Services*, *58*, 102303. https://doi.org/10.1016/j.jretconser.2020.102303

Tan, C. (2018). *Regulating Content on Social Media*: *Copyright, Terms of Service and Technological Features*. UCL Press.

Tashakkori, A., & Creswell, J. W. (2007). The new era of mixed methods. *Journal of Mixed Methods Research*, *1*(1), 3-7. https://doi.org/10.1177/2345678906293042

Teunissen, L., Cuykx, I., Decorte, P., Vandebosch, H., Matthys, C., Pabian, S., Van Royen, K., & De Backer, C. (2023). Emerging adults' food media experiences: Preferences, opportunities, and barriers for food literacy promotion. *Communications*. https://doi.org/10.1515/commun-2022-0051

Thomas, H., Perry, E. A., Slack, J., Samra, H. R., Manowiec, E., Petermann, L., Manafò, E., & Kirkpatrick, S. I. (2019). Complexities in conceptualizing and measuring food literacy. *Journal of the Academy of Nutrition and Dietetics*, *119*(4), 563-573. https://doi.org/10.1016/j.jand.2018.10.015

Thompson, C., Adams, J., & Vidgen, H. A. (2021). Are we closer to international consensus on the term 'food literacy'? A systematic scoping review of its use in the academic literature (1998–2019). *Nutrients*, *13*(6), 2006. https://doi.org/10.3390/nu13062006

Thompson, J. K., van den Berg, P., Roehrig, M., Guarda, A. S., & Heinberg, L. J. (2004). The sociocultural attitudes towards appearance scale-3 (SATAQ-3): development and validation. *International Journal of Eating Disorders*, *35*(3), 293-304. https://doi.org/10.1002/eat.10257

Thorson, K. (2020). Attracting the news: Algorithms, platforms, and reframing incidental exposure. *Journalism*, *21*(8), 1067-1082. https://doi.org/10.1177/1464884920915352

Thorson, K., & Wells, C. (2016). Curated flows: A framework for mapping media exposure in the digital age. *Communication Theory*, *26*(3), 309-328. https://doi.org/10.1111/comt.12087

Thu. (2022). Jongeren stellen vertrek uit ouderlijk huis langer uit: 'Wie gaat in onstabiele tijden op eigen benen staan?'. *De Standaard*. https://www.standaard.be/cnt/dmf20220905_91909463

Tobey, L. N., Mouzong, C., Angulo, J. S., Bowman, S., & Manore, M. M. (2019). How low-income mothers select and adapt recipes and implications for promoting healthy recipes online. *Nutrients*, *11*(2), 339. https://doi.org/10.3390/nu11020339

Tong, A., Sainsbury, P., & Craig, J. (2007). Consolidated criteria for reporting qualitative research (COREQ): a 32-item checklist for interviews and focus groups. *International journal for quality in health care*, *19*(6), 349-357. https://doi.org/10.1093/intqhc/mzm042

Trattner, C., Elsweiler, D., & Howard, S. (2017). Estimating the healthiness of internet recipes: a cross-sectional study. *Frontiers in public health*, *5*, 16. https://doi.org/10.3389/fpubh.2017.00016

Truman, E., Bischoff, M., & Elliott, C. (2020). Which literacy for health promotion: health, food, nutrition or media? *Health promotion international*, *35*(2), 432-444. https://doi.org/10.1093/heapro/daz007

Truman, E., & Elliott, C. (2019). Barriers to food literacy: A conceptual model to explore factors inhibiting proficiency. *Journal of nutrition education and behavior*, *51*(1), 107-111. https://doi.org/10.1016/j.jneb.2018.08.008

Truman, E., Lane, D., & Elliott, C. (2017). Defining food literacy: A scoping review. *Appetite*, *116*, 365-371. https://doi.org/10.1016/j.appet.2017.05.007

Turnwald, B. P., Perry, M. A., Jurgens, D., Prabhakaran, V., Jurafsky, D., Markus, H. R., & Crum, A. J. (2022). Language in popular American culture constructs the meaning of healthy and unhealthy eating: Narratives of craveability, excitement, and social connection in movies, television, social media, recipes, and food reviews. *Appetite*, *172*, 105949. https://doi.org/10.1016/j.appet.2017.03.037

U

Ul-Ain, F., Popovitš, O., & Tomberg, V. (2022). Mapping Behavior Change Wheel Techniques to Digital Behavior Change Interventions. International Conference on Human-Computer Interaction,

Utter, J., Larson, N., Laska, M. N., Winkler, M., & Neumark-Sztainer, D. (2018). Self-perceived cooking skills in emerging adulthood predict better dietary behaviors and intake 10 years later: a longitudinal study. *Journal of nutrition education and behavior*, *50*(5), 494-500. https://doi.org/10.1016/j.jneb.2018.01.021

V

Valente, M., Syurina, E. V., Muftugil-Yalcin, S., & Cesuroglu, T. (2020). "Keep yourself alive": From healthy eating to progression to orthorexia nervosa A mixed methods study among young women in The Netherlands. *Ecology of Food and Nutrition*, *59*(6), 578-597. https://doi.org/10.1080/03670244.2020.1755279

Valkenburg, P. M., & Oliver, M. B. (2019). Media Effects Theories: An Overview. In M. B. Oliver, A. A. Raney, & J. Bryant (Eds.), *Media Effects: Advances in theory and research* (pp. 16-35). Routledge.

Valkenburg, P. M., & Peter, J. (2013). The differential susceptibility to media effects model. *Journal of communication*, *63*(2), 221-243. https://doi.org/10.1111/jcom.12024

Van De Schoot, R., Lugtig, P., & Hox, J. (2012). A checklist for testing measurement invariance. *European Journal of Developmental Psychology*, *9*(4), 486-492. https://doi.org/10.1080/17405629.2012.686740

Van Den Bulck, J. (1995). The selective viewer: Defining (Flemish) viewer types. *European Journal of Communication*, *10*(2), 147-177. https://doi.org/10.1177/026732319501000 2001

Van Royen, K., Pabian, S., Poels, K., & De Backer, C. (2022). Around the same table: Uniting stakeholders of food-related communication. *Appetite*, *173*, 105998. https://doi.org/10.1016/j.appet.2022.105998

Vandendriessche, K., Steenberghs, E., Matheve, A., Georges, A., & De Marez, L. (2021). imec. digimeter 2020: Digitale Trends in Vlaanderen (digital trends in Flanders). https://www.imec.be/nl/kennisuitwisseling/techmeters/digimeter/imecdigimeter-2021

Vanderlee, L., Hobin, E. P., White, C. M., & Hammond, D. (2018). Grocery shopping, dinner preparation, and dietary habits among adolescents and young adults in Canada. *Canadian journal of Dietetic practice and research*, *79*(4), 157-163. https://doi.org/10.3148/cjdpr-2018-025

Vanninen, H., Mero, J., & Kantamaa, E. (2022). Social Media Influencers as Mediators of Commercial Messages. *Journal of Internet Commerce*, *22*(sup1), 1-24. https://doi.org/10.1080/15332861.2022.2096399

Vaterlaus, J. M., Patten, E. V., Roche, C., & Young, J. A. (2015). # Gettinghealthy: The perceived influence of social media on young adult health behaviors. *Computers in human behavior*, *45*, 151-157. https://doi.org/10.1016/j.chb.2014.12.013

Velardo, S. (2015). The nuances of health literacy, nutrition literacy, and food literacy. *Journal of nutrition education and behavior*, *47*(4), 385-389. e381. https://doi.org/10.1016/j.jneb.2015.04.328

Ventura, V., Cavaliere, A., & Iannò, B. (2021). # Socialfood: Virtuous or vicious? A systematic review. *Trends in Food Science & Technology*, *110*, 674-686. https://doi.org/10.1016/j.tifs.2021.02.018

Vermeir, I., & Roose, G. (2020). Visual design cues impacting food choice: A review and future research agenda. *Foods*, *9*(10), 1495. https://doi.org/10.3390/foods9101495

Vettori, V., Lorini, C., Milani, C., & Bonaccorsi, G. (2019). Towards the implementation of a conceptual framework of food and nutrition literacy: Providing healthy eating for the population. *International journal of environmental research and public health*, *16*(24), 5041. https://doi.org/10.3390/ijerph16245041

Vidgen, H. (2016a). A definition of food literacy and its components. In H. Vidgen (Ed.), *Food Literacy* (pp. 35-65). Routledge.

Vidgen, H. (2016b). The development of food literacy. In H. Vidgen (Ed.), *Food Literacy* (pp. 167-180). Routledge.

Vidgen, H. (2016c). *Food literacy: key concepts for health and education*. Routledge.

Vidgen, H. A. (2014). *Food literacy: what is it and does it influence what we eat* Queensland University of Technology].

Vidgen, H. A., & Gallegos, D. (2014). Defining food literacy and its components. *Appetite*, *76*, 50-59. https://doi.org/10.1016/j.appet.2014.01.010

Vraga, E. K., Bode, L., Smithson, A.-B., & Troller-Renfree, S. (2019). Accidentally attentive: Comparing visual, close-ended, and open-ended measures of attention on social media. *Computers in human behavior*, *99*, 235-244. https://doi.org/10.1016/j.chb.2019.05.017

Vrontis, D., Makrides, A., Christofi, M., & Thrassou, A. (2021). Social media influencer marketing: A systematic review, integrative framework and future research agenda. *International journal of consumer studies*, *45*(4), 617-644. https://doi.org/10.1111/ijcs.12647

Wang, C.-H., Sher, S. T.-H., Salman, I., Janek, K., & Chung, C.-F. (2022, June 27-30). *"TikTok Made Me Do It": Teenagers' Perception and Use of Food Content on TikTok* Interaction Design and Children, Portugal.

Webb, T., Joseph, J., Yardley, L., & Michie, S. (2010). Using the internet to promote health behavior change: a systematic review and meta-analysis of the impact of theoretical basis, use of behavior change techniques, and mode of delivery on efficacy. *Journal of medical Internet research*, *12*(1), e1376. https://doi.org/10.2196/jmir.1376

Webster, J., Phalen, P., Lichty, L., Lichty, L. W., & Phalen, P. F. (2006). *Ratings analysis: Theory and practice*. Routledge.

Wickham, C. A., & Carbone, E. T. (2018). What's technology cooking up? A systematic review of the use of technology in adolescent food literacy programs. *Appetite*, *125*, 333-344. https://doi.org/10.1016/j.appet.2018.02.001

Willoughby, J. F., & Noar, S. M. (2022). Fifteen years after a 10-year retrospective: the state of health mass mediated campaigns. *Journal of Health Communication*, *27*(6), 362-374. https://doi.org/10.1080/10810730.2022.2110627

Wilson, B., Knobloch-Westerwick, S., & Robinson, M. J. (2019). Picture yourself healthy—how users select mediated images to shape health intentions and behaviors. *Health communication*, *34*(8), 838-847. https://doi.org/10.1080/10410236.2018.1437527

Wilson, C. K., Matthews, J. I., Seabrook, J. A., & Dworatzek, P. D. (2017). Self-reported food skills of university students. *Appetite*, *108*, 270-276. https://doi.org/10.1016/j.appet.2016.10.011

Wolfson, J. A., & Bleich, S. N. (2015). Is cooking at home associated with better diet quality or weight-loss intention? *Public Health Nutrition*, *18*(8), 1397-1406. https://doi.org/10.1017/s1368980014001943

Worsley, A. (2002). Nutrition knowledge and food consumption: can nutrition knowledge change food behaviour? *Asia Pacific journal of clinical nutrition*, *11*, S579-S585. https://doi.org/10.1046/j.1440-6047.11.supp3.7.x

Yahia, N., Wang, D., Rapley, M., & Dey, R. (2016). Assessment of weight status, dietary habits and beliefs, physical activity, and nutritional knowledge among university students. *Perspectives in public health*, *136*(4), 231-244. https://doi.org/10.1177/1757913915609945

Young, C., Campolonghi, S., Ponsonby, S., Dawson, S. L., O'Neil, A., Kay-Lambkin, F., McNaughton, S. A., Berk, M., & Jacka, F. N. (2019). Supporting engagement, adherence, and behavior change in online dietary interventions. *Journal of nutrition education and behavior*, *51*(6), 719-739. https://doi.org/10.1016/j.jneb.2019.03.006

Z

Zak, S., & Hasprova, M. (2020). The role of influencers in the consumer decision-making process. SHS web of conferences,

Zou, W., Zhang, W. J., & Tang, L. (2021). What do social media influencers say about health? A theory-driven content analysis of top ten health influencers' Posts on Sina Weibo. *Journal of Health Communication*, *26*(1), 1-11. https://doi.org/10.1080/10810730.2020.1865486

Zulaikha, Z., Muzzaki, A., Iristian, J., & Indrasari, M. (2019). Patterns of Use of Social Media in the Culinary Community "Langsungenak". ACHITS 2019: Proceedings of the 1st Asian Conference on Humanities, Industry, and Technology for Society, ACHITS 2019, 30-31 July 2019, Surabaya, Indonesia,

APPENDICES

1 SUMMARY (EN)

"Food literacy education should develop programmes to help individuals understand food and food practices in the broader context of an increasingly digital and tech-centred world."

(Fox and Marinescu, 2020)

As emerging adults transition from adolescence to adulthood, they undergo a period of increased independence, including in their food choices and behaviors (Arnett, 2014; Slater et al., 2018). Nevertheless, insufficient knowledge, skills, and self-efficacy related to various practicalities associated with healthy eating is an essential barrier for emerging adults to have a balanced and healthy relationship with food (Hilger-Kolb & Diehl, 2019; Kabir et al., 2018; Larson et al., 2006; Munt et al., 2017; Utter et al., 2018; Wilson et al., 2017). Food Literacy has been put forward as a concept that focuses on a person's ability to acquire food-related knowledge and use knowledge to achieve better dietary outcomes (Slater et al., 2018). Therefore, emerging adults need to acquire food literacy: knowledge, skills, self-efficacy, and behaviors required to plan, select, prepare, consume, and evaluate a healthy meal in ways that promote physiological and psychological health (Vidgen & Gallegos, 2014). Within the specific demographic of emerging adults, food media messages are popular and of interest, warranting an in-depth investigation of food media messages as a strategy for food literacy interventions targeting emerging adults.

Guided by a Uses and Gratifications framework, the current dissertation has two research objectives. First, this dissertation investigates the motivations and patterns behind emerging adults' engagement with food media messages and emerging adults' perceptions of food media messages for enhancing food literacy. Second, this dissertation aims to examine and evaluate some types of food media messages to which emerging adults are exposed.

The dissertation comprises five empirical chapters organized into two distinct parts. In Part One, three studies are dedicated to delving into emerging adults' food media experiences and their perceptions of food literacy. Chapter One adopts a qualitative approach to investigate why emerging adults select particular food media messages, how they engage with them, and what they perceive to gain from these messages in terms of food literacy. Chapter Two is dedicated to the development and validation of a quantitative measure, the Food Media Content Gratifications Scale (FMCG), designed to systematically assess what people seek (gratifications sought; GS) and find (gratifications obtained; GO) in food media

messages. The last chapter of Part One, Chapter Three, presents a research brief utilizing the FMCG scale to quantitatively investigate emerging adults' food media content gratifications. Part Two of the dissertation comprises two studies analyzing various food media messages emerging adults encounter. Chapter Four offers insights into the general design principles of messages by influencers and explores the presence of behavioral change techniques in their communication. Lastly, Chapter Five focused on investigating the recipe posts of food influencers and food celebrities in terms of (1) references to food literacy, (2) nutritional value, and (3) communication techniques (i.e., use of rational and emotional appeals).

The findings from the first empirical part revealed several key findings. First, the findings show that emerging are exposed to various types of food media messages, whereas online food media messages the most. Second, emerging adults get both intentionally and incidentally exposed to food media messages, with incidental exposure more often. In terms of intentional exposure to food media messages, the findings show that emerging adults have different motivations related to information and entertainment. This suggests that their consumption of food media messages is not solely driven by an intentional search for information; rather, they seek entertainment and relaxation benefits. With regard to incidental exposure, emerging adults indicated that they consumed incidentally encountered food media messages when the messages were forwarded by peers or presented visually appealing, for instance, when presented by a food personality or through humor. Third, the findings revealed that food media messages were perceived among emerging adults, both contributing to their food literacy and also forming a barrier. Emerging adults indicated that food media messages help them to plan meals, provide them with inspiration and knowledge to prepare meals, and encourage them to cook and eat together with others. However, they also indicate that some food media messages promote unhealthy foods, tempting emerging adults to consume energy- and calorie-dense foods or to follow specific diets. Additionally, recipes that seem difficult to prepare, do not align with their preferences, or consist of too many or too difficult-to-obtain ingredients discourage emerging adults from preparing them. As such, the findings from the first empirical chapter show that a balance must be struck between leveraging media messages about food as a tool for food literacy and being mindful of their potential pitfalls. At the same time, media messages about food should be created in a way that presents information clearly and usefully, taking into account the needs and preferences of emerging adults.

The findings of the second empirical part of this dissertation gave more insights into the messages shared by influencers on social media. The findings revealed that food influencers rarely embed explicit references to food literacy in their recipe posts, especially regarding meal planning, food selection, meal consumption, and evaluating food-related information. Furthermore, the included food influencers

presented meals that scored on average 6 out of 11 on the nutrient criteria for a healthy meal and promoted their recipes as "tasty" and "convenient to prepare." Finally, we also observed that the characteristics of the communication of food influencers share similarities with behavior change techniques, which exhibit benefits for food literacy interventions.

Taken together, this dissertation sheds light on the selection of and exposure to food media messages, the characteristics of these food messages, and their relation to emerging adults' food literacy. These insights contribute to the understanding of using food literacy interventions targeting emerging adults *"... in the broader context of an increasingly digital and tech-centred world (Fox and Marinescu, 2020)"*.

2 SUMMARY (NL)

"Food literacy education should develop programmes to help individuals understand food and food practices in the broader context of an increasingly digital and tech-centred world."

(Fox and Marinescu, 2020)

Jongvolwassenen bevinden zich op een cruciaal punt in hun leven waarop ze voor het eerst zelfstandige keuzes moeten maken, ook op het gebied van voeding (Arnett, 2014; Slater et al., 2018). Helaas merken we vaak dat hun eetgedrag verslechtert, met mogelijke negatieve langetermijngevolgen. Daarom is het van groot belang om aandacht te besteden aan hun voedselgeletterdheid, wat hen kan helpen om een levenslange gezonde en duurzame relatie met lekker voedsel te ontwikkelen (Slater et al., 2018). Voedselgeletterdheid omvat de combinatie van kennis, vaardigheden en zelfeffectiviteit op het gebied van (1) het plannen en beheren van maaltijden, (2) het selecteren van voedingsmiddelen, (3) het bereiden van maaltijden, (4) het consumeren van maaltijden en (5) het evalueren van informatie over voeding, met als ultiem doel het ontwikkelen van een gezonde en duurzame relatie met lekker voedsel gedurende het hele leven (Vidgen & Gallegos, 2014). Binnen de specifieke doelgroep van jongvolwassenen zijn mediaberichten over voeding populair, waardoor een grondige analyse van het gebruik van deze berichten als strategie om voedselgeletterdheid te bevorderen van groot belang is.

Op basis van een *Uses and Gratifications* theoretisch kader heeft dit proefschrift twee specifieke onderzoeksdoelen. Ten eerste onderzoekt dit proefschrift het gebruik, de motivaties om mediaberichten over voeding te consumeren. Daarbij komend heeft het ook als doel in kaart te brengen wat de percepties zijn van jongvolwassenen van mediaberichten over voeding in relatie tot voedselgeletterdheid. Ten tweede heeft dit proefschrift tot doel de inhouden van media berichten over voeding waaraan jongvolwassenen worden blootgesteld, te onderzoeken en te evalueren.

Het proefschrift bestaat uit vijf empirische hoofdstukken die zijn georganiseerd in twee afzonderlijke delen. Het eerste deel omvat drie studies die zich richten op de ervaringen van jongvolwassenen met mediaberichten over voeding en hun percepties van mediaberichten over voeding ten opzichte van voedselgeletterdheid. Het eerste hoofdstuk hanteert een kwalitatieve benadering om te onderzoeken waarom jongvolwassenen bepaalde mediaberichten over voeding selecteren, hoe ze ermee omgaan en welke voordelen ze verwachten met betrekking tot voedselgeletterdheid. Het tweede hoofdstuk richt zich op de ontwikkeling en

validatie van de Food Media Content Gratifications Scale (FMCG), een kwantitatieve schaal die systematisch onderzoekt wat mensen zoeken (Gratifications Sought) en vinden (Gratifications Obtained) in mediaberichten over voeding. Hoofdstuk drie presenteert een onderzoeksrapport waarin de FMCG-schaal wordt toegepast om de gratificaties van jongvolwassenen bij mediaberichten over voeding kwantitatief te onderzoeken. Het tweede deel van het proefschrift omvat twee studies die de inhoud van verschillende mediaberichten analyseren waaraan jongvolwassenen worden blootgesteld. Hoofdstuk vier biedt inzicht in de algemene ontwerpprincipes van berichten door influencers en onderzoekt de aanwezigheid van gedragsveranderingstechnieken in hun communicatie. Ten slotte richt hoofdstuk vijf zich op de analyse van Instagram receptenberichten van food influencers met betrekking tot (1) verwijzingen naar voedselgeletterdheid, (2) nutritionele waarde en (3) communicatietechnieken (emotionele en rationele verwijzingen).

Het eerste empirische deel van dit proefschrift heeft een aantal belangrijke inzichten opgeleverd. Allereerst blijkt dat jongvolwassenen worden blootgesteld aan diverse vormen van mediaberichten over voeding, waarbij online berichten het meest prominent aanwezig zijn. Verder werd ook gevonden dat jongvolwassenen zowel actief als incidenteel in contact komen met deze mediaberichten. Dit impliceert dat ze deze berichten actief opzoeken, maar ook dat ze er onbedoeld mee geconfronteerd worden. Wanneer jongvolwassenen actief op zoek gaan naar mediaberichten over voeding, blijkt dit voornamelijk ingegeven te zijn door verschillende motivaties, zoals entertainment en het vergaren van informatie. Hieruit volgt dat hun interesse in mediaberichten over voeding niet uitsluitend voortkomt uit een gerichte zoektocht naar informatie, maar ook uit de behoefte aan ontspanning. Wat betreft incidentele blootstelling geven jongvolwassenen aan dat ze zich laten leiden door berichten die hen worden doorgestuurd door leeftijdsgenoten of die visueel aantrekkelijk zijn gepresenteerd, zoals door bekende (voedingsgerelateerde) persoonlijkheden of met humoristische elementen. Verder blijkt uit de bevindingen dat mediaberichten over voeding zowel een bijdrage kunnen leveren aan als een belemmering kunnen vormen voor voedselgeletterdheid. Enerzijds helpen deze berichten bij het plannen van maaltijden, bieden ze inspiratie en kennis voor het bereiden ervan, en stimuleren ze sociale interactie rondom eten en koken. Anderzijds bevorderen ze soms ongezonde eetgewoonten, wat jongvolwassenen kan verleiden tot het consumeren van calorierijk voedsel of het volgen van specifieke diëten. Bovendien blijkt dat recepten die complex lijken, ingrediënten bevatten die moeilijk verkrijgbaar zijn, of niet aansluiten bij persoonlijke voorkeuren, jongvolwassenen kunnen ontmoedigen om deze recepten daadwerkelijk uit te proberen. Samengevat blijkt uit de bevindingen van het eerste empirische gedeelte dat er een evenwicht moet worden gevonden tussen het benutten van mediaberichten over voeding als hulpmiddel voor voedselgeletterdheid maar ons ook bewust moeten zijn van de mogelijke valkuilen. Tegelijkertijd moeten mediaberichten over voeding gemaakt

worden op een manier die informatie duidelijk weergeeft en rekening houdt met de behoeften en voorkeuren van jongvolwassenen.

De bevindingen uit het tweede empirische deel van dit proefschrift hebben een dieper inzicht geboden in de berichten die influencers op sociale media verspreiden. Uit deze bevindingen blijkt dat voedingsinfluencers zelden expliciet verwijzen naar voedselgeletterdheid in hun receptenberichten, met name met betrekking tot maaltijdplanning, voedselselectie, maaltijdconsumptie en informatie-evaluatie. Bovendien vertoonden de gepresenteerde maaltijden van deze influencers gemiddeld een score van 6 op 11 op de criteria voor een gezonde maaltijd, terwijl ze hun recepten tegelijkertijd aanprezen als 'heerlijk' en 'gemakkelijk te bereiden'. Ten slotte hebben we ook waargenomen dat de kenmerken van de communicatie van voedingsinfluencers overeenkomsten vertonen met gedragsveranderingstechnieken, die voordelen vertonen voor interventies op het gebied van voedselgeletterdheid.

Alles bij elkaar genomen werpt dit proefschrift licht op de selectie van en blootstelling aan mediaberichten over voeding eten, de kenmerken van deze boodschappen en hun relatie tot de voedselgeletterdheid van jongvolwassenen. Deze inzichten dragen bij om te begrijpen hoe we voedsegeletterdheid interventies kunnen gebruiken en ontwikkelen die gericht zijn op jongvolwassenen aan het begrip van het gebruik van interventies op het gebied van voedselgeletterdheid gericht op jongvolwassenen "*... in the broader context of an increasingly digital and tech-centred world (Fox and Marinescu, 2020)*".

3 AUTHOR CONTRIBUTIONS

CHAPTER 1: EMERGING ADULTS' FOOD MEDIA EXPERIENCES: PREFERENCES, OPPORTUNITIES AND BARRIERS FOR FOOD LITERACY PROMOTION

Lauranna Teunissen: study conceptualization, data collection, data analysis and interpretation, writing – original draft, writing – review and editing. **Isabelle Cuykx**: study conceptualization, writing – review and editing. **Paulien Decorte**: data analysis and interpretation, writing – review and editing. **Heidi Vandebosch**: writing – review and editing, supervision. **Christophe Matthys**: writing – review and editing, supervision. **Sara Pabian**: writing – review and editing, supervision. **Kathleen Van Royen**: writing – review and editing, supervision. **Charlotte De Backer**: writing – review and editing, supervision.

CHAPTER 2: MEASURING WHAT AUDIENCES SEEK FROM AND FIND IN FOOD MEDIA CONTENT: THE FOOD MEDIA CONTENT GRATIFICATIONS SCALE CONCEPTUALIZATION, DEVELOPMENT, AND VALIDATION

Lauranna Teunissen: study conceptualization, data collection, data analysis and interpretation, writing – original draft, writing – review and editing. **Paulien Decorte**: study conceptualization, data collection, data analysis and interpretation, writing – original draft, writing – review and editing. **Isabelle Cuykx**: study conceptualization, data collection, data analysis and interpretation, writing – original draft, writing – review and editing.

CHAPTER 3: FOOD MEDIA CONTENT GRATIFICATIONS AMONG EMERGING ADULTS

Lauranna Teunissen: study conceptualization, data collection, data analysis and interpretation, writing – original draft, writing – review and editing. **Paulien Decorte**: study conceptualization, data collection, data analysis and interpretation, writing – original draft, writing – review and editing.

CHAPTER 4: BEHAVIORAL CHANGE TECHNIQUES IN INFLUENCERS' SOCIAL MEDIA MESSAGES

Lauranna Teunissen: study conceptualization, data collection, data analysis and interpretation, writing – original draft, writing – review and editing. **Kathleen Van Royen**: study conceptualization, data collection, data analysis and interpretation, writing – original draft, writing – review and editing.

CHAPTER 5: HOW ARE FOOD INFLUENCERS' RECIPES PROMOTING FOOD LITERACY? INVESTIGATING NUTRITIONAL CONTENT, FOOD LITERACY, AND COMMUNICATION TECHNIQUES IN INSTAGRAM RECIPE POSTS

Lauranna Teunissen: study conceptualization, data collection, data analysis and interpretation, writing – original draft, writing – review and editing. **Kathleen Van Royen**: writing – review and editing, supervision. **Iris Goemans**: data collection, data analysis and interpretation. **Joke Verhaegen**: data collection, data analysis and interpretation. **Sara Pabian**: writing – review and editing, supervision. **Charlotte De Backer**: writing – review and editing, supervision. **Heidi Vandebosch**: writing – review and editing, supervision. **Christophe Matthys**: writing – review and editing, supervision.

4 ACKNOWLEDGEMENTS

Ieder recept vertelt een verhaal, en vandaag wil ik graag het recept delen dat heeft geleid tot mijn doctoraat. Net zoals in de keuken, zou mijn doctoraat ook niet tot stand zijn gekomen zonder de verschillende noodzakelijke ingrediënten bij elkaar te brengen.

Ik loop het ingrediëntenlijstje voor mijn doctoraat even met jullie door. Je hebt nodig: 3 fantastische promotoren, inclusief één met een BMW-hoed aan, 4 kritische commissie/juryleden – die ook wel de Gordon Ramsays van de academische wereld worden genoemd, een FOOMSies team, warme CW-collega's, heel veel fantastische vrienden, een warme kring van familieleden, en tenslotte een alles fixer genaamd Thomas. Al deze ingrediënten zijn een noodzakelijk en essentieel onderdeel geweest van mijn doctoraatsrecept die ik graag uitgebreid wil bedanken! Zonder jullie had mijn doctoraat hier niet gelegen!

Eerst en vooral zou ik graag één van de belangrijkste ingrediënten van mijn doctoraat willen bedanken, mijn drie promotoren, Charlotte, Heidi en Christophe. Met elk van jullie eigen expertise hebben jullie ervoor gezorgd dat ik me iedere keer opnieuw verder kon blijven ontwikkelen en dit proefschrift kon neerleggen. Het was een eer om met jullie drie te mogen samenwerken. **Charlotte**, ik weet niet waar ik moet beginnen om u te bedanken! Onze reis samen begon al samen tijdens mijn masterproef en waar ik al heel snel onder de indruk was van al uw expertise rondom food media! Bedankt dat u altijd klaar stond om me met open armen te ontvangen en altijd die juiste motiverende woorden zei om door te gaan! U heeft me altijd een enorm warm gevoel gegeven en me echt laten inzien dat ik in mezelf moet geloven. Dank u wel voor alles, maar dan ook echt alles! **Heidi**, dank u wel om iedere keer de meest concrete en kritische feedback te geven. Het zorgde er niet alleen voor dat het werk sterker werd, maar het zorgde er vooral ook voor dat ik op het juiste pad bleef. De eerste paper van mijn doctoraat was een heel gevecht, maar u heeft me tijdens het schrijven van die paper echt geleerd hoe ik een academische paper opbouw, wat voor mij één van de allerbelangrijkste lessen geweest zijn tijdens dit doctoraat. Daarnaast zullen alle lessen en discussies over Uses and Gratifications (en natuurlijk veel meer) me voor altijd bij blijven. Het was een eer om mijn doctoraat te mogen schrijven onder uw begeleiding! **Christophe**, van mij drie promotoren, de meeste kritische en directe in zijn feedback. Keer op keer kreeg ik dezelfde directe en to-the-point opmerkingen zoals "dit is precies een stageverslag" of "overbodig, dit lijkt me toch logisch". In het begin van mijn doctoraat kwamen deze opmerkingen soms wel even binnen of wist ik niet direct wat ik ermee moest doen. Achteraf, waren ze eigenlijk amusant en super logische opmerkingen - toen dacht ik wel eens *"Ah ja hier is Christophe weer met dezelfde reeks van opmerkingen"*. Bedankt Christophe

om altijd klaar te staan en feedback te geven! Ik heb door u echt to-the-point leren schrijven en vooral geleerd om alle randinformatie te schrappen uit papers.

Daarnaast wil ik van de gelegenheid gebruikmaken om mijn commissie en juryleden te bedanken. Allemaal bedankt voor jullie bereidheid om mijn proefschrift te willen lezen en feedback te geven. **Gert-Jan** bedankt om last minute te willen optreden als mijn voorzitter. Bedankt voor de fijne samenwerking met het boek hoofdstuk en alle verschillende onderwijstaken! Ook bedankt om me iedere keer er opnieuw aan te herinneren dat Ajax de beste club ter wereld is ;)! **Tim** bedankt voor de feedback doorheen heel het proces! Het InFlOOD afsluit etentje hoort, denk ik tot één van mijn hoogtepunten! Bedankt om mee met alles te helpen klaarzetten en op te ruimen toen mijn vingers het begaven 😉! Ook **Peter,** bedankt om op te treden als mijn voorzitter in de eerste jaren, bedankt voor al uw nuttige suggesties! **Liselotte**, ook u bedankt om deel te willen nemen aan de jury. Ik kijk enorm hard uit om in de toekomst samen te werken rond gokreclame. **Monique** ook aan jou een dikke dank je wel! Als echte expert rond het thema kon jij niet ontbreken in mijn jury. Ik ben blij dat ik je nu ook mijn collega kan noemen en dat je me al helemaal op de hoogte hebt gebracht van alle tips en tricks aan de UvA. Ik kijk enorm hard uit naar onze toekomstige projecten samen!

Vervolgens zijn we aangekomen bij het volgende ingrediënt, een enorm belangrijk ingrediënt namelijk al mijn mede foodie collega's! Allereerst, **Paulien** en **Isabelle**, het is moeilijk om in woorden uit te drukken hoe dankbaar ik ben met onze geweldige samenwerking van de afgelopen vier jaren! Jullie twee waren werkelijk mijn rotsen in de branding, en zonder jullie zou dit doctoraat nooit tot stand zijn gekomen op de manier hoe het hier ligt. Ik denk dat wij met drie samen een heel uniek traject hebben afgelegd wat ik voor geen geld zou willen ruilen! We hebben echt ontelbare mooie momenten samen beleefd, gaande van samen wijnen en werken op vrijdagmiddag tot bloed, zweet en tranen om 01u s'ochtends om al video bellende spellingsfouten uit een survey te halen. Crazy tijden en ervaringen samen gehad met drie, waar we nu dan ook echt een vriendschap voor het leven hebben opgebouwd. Dank jullie wel om daar altijd, maar letterlijk altijd te zijn voor mij. Ik wist dat ongeacht hoe laat het was, of waar ik of jullie waren, ik altijd 7 op 7 bij jullie terecht kon. Isabelle, jouw super warme persoonlijkheid overdondert me iedere keer. Onze legendarische lunch-soep momenten, awkward lift ervaringen, een geweldige Canada-reis, letterlijk alles samen voor de eerste keer meemaken,... Nee, ik had het met niemand anders willen delen! Paulien - Polle, wat ben ik blij dat jij ook mee op ons project kwam werken! Onze eindeloze, maar echt eindeloze videocall momenten, wijn/partysessies op congressen of personeelsfeestjes, Baby Yoda fangirling, murder mysteries,... echt wauw wat een crazy toffe momenten hebben we beleefd! Merci om echt de allerliefste vriendin te zijn die ik telkens maar weer opnieuw kon sturen met een Engelse taalvraag! Ik ben echt enorm trots op je en kijk uit naar onze

toekomstige werk-wijn-avonden! Polle & Isabelle, ik ga het missen, oprecht missen, onze samenwerkingen, projecten, maar ik kijk ook naar uit naar de toekomst! Ik kijk uit naar minder werk-gerelateerde momenten en meer andere leuke ervaringen die we met z'n drieën gaan beleven. Merci mannekes, Merci voor alles ❤️!

Daarnaast ook een grote dank je wel aan mijn allerliefste andere mede Foomsies! **Elina**, van poseren met groenten tot samen wijnen op de proclamatie, dank je wel om me altijd te doen laten lachen en de leukste momenten samen te beleven! **Amber**, de congrestrip samen naar Zweden behoort zeker tot één van onze toffe momenten. Je bent altijd een vaste waarde die bij iedere presentatie komt steunen. Merci voor alles! **Katrien**, dank je wel om zo een super sympathieke, lach gierige collega te zijn! Het was een eer om in mijn eerste werkweek voor het stimulusmateriaal van je studie te mogen modelleren en veel te mogen eten! **Viktor**, bedankt voor alle statistische hulp en eigenlijk gewoon bedankt voor al mijn vragen waar ik bij jou mee kwam aankloppen en om me altijd te willen helpen en advies te geven! **Jules**, bedankt voor alle fijne momenten en om mijn buddy te zijn in het food/nutrition literacy gebied. **Corinne**, bedankt voor de leuke momenten samen - waaronder samen cocktails brouwen en drinken! **Yara**, thank you for everything and thank you for questioning one of the most important questions of my Ph.D.: "What is food media?"! Ook, **Lotte** als andere KU Leuven Foodie, merci voor alle leuke babbels en ik kijk al uit naar 6 september! **Sara** en **Kathleen** bedankt voor al de super fijne samenwerking van de afgelopen vier jaar. Jullie stonden keer op keer klaar om geweldige feedback te geven, me wegwijs te maken in de academische wereld, en ook om samen leuke momenten te beleven! Tenslotte, ook merci aan alle andere mensen die betrokken waren bij het InFlOOD project, waaronder ook Flanders Food. Het InFlOOD project en mijn doctoraat waren eigenlijk altijd een "ik ben weer terug van nooit weg geweest te zijn"- verhaal. Bedankt dat ik deel mocht maken van dit onwijs leuk onderzoeksproject!

Een doctoraat schrijven kan zeker niet zonder te werken in een toffe werksfeer met alle andere leukste en inspirerende collega's! Het FSW Space-Kerstfeest team, **Sofie**, **Roos** en **Michelle**, bedankt voor alle leuke babbels, Vandoag Ist koffie halen of Kool & Zo lunch halen momentjes, brainstorm en creasessies! Jullie brengen letterlijk de gezelligheid op kantoor 🙂. **Kim,** dank je wel dat ik bij jou op kantoor voor 3 maanden mocht komen crashen 😉! Enorme gezellige babbels en ik heb je in de korte periode toch op een hele andere manier leren kennen. **Gaëlle**, bedankt om altijd aan ons te denken om te vragen voor een gastcollege te geven, en ook bedankt voor de altijd immens goede carrière adviezen. **Thalia en Priscilla**, samen op de Hornblower en altijd gevulde glazen hebben op het ICA- dansfeestje, behoort tot één van mijn hoogtepunten dat ik samen met jullie heb mogen beleven. Merci voor alle assistent-adviezen, leuke babbels, en vooral bedankt voor alle lekkere snoepjes die mijn dag opeens een stuk productiever gemaakt hebben. Ook aan alle

andere collega's van de afgelopen vier jaar een dikke merci: **Aurélie**, **David, Kato, Laura, Marthe, Sofie, Dorien, Simone, Karen, Ina, Sherry, Konrad, Maria-Victoria, Miguel, Rowan, Emma, Nicola, Maud, Kenza, Pascalle,** en **Bo!** Jullie zijn stuk voor stuk elks geweldige en inspirerende ingrediënten die van mijn doctoraatsperiode een gezellige ervaring maakte. Dank jullie wel voor alle leuke kleine, soms lange babbels, lunch en koffiepauzes!

En nee hoor **Toni,** jou zou ik zeker niet durven vergeten in het lijstje! Toni, al vrienden voor dat we ons collega's konden noemen. Jouw nuchterheid is echt goud waard! Ik heb zoveel van je geleerd in de zin van gewoon doen wat goed voelt. Enorm dankbaar dat wij eigenlijk nooit heel veel "werk-gerelateerde woorden" hebben uitgewisseld, maar dat we gewoon konden praten over de duizend en één andere zaken waar we ons mee bezig houden buiten het werk. Merci om te zijn wie je bent en om ook echt altijd 100% voor me klaar te staan.

Naast alle werk-gerelateerde ingrediënten zijn er nog heel wat andere ingrediënten die enorm belangrijk zijn geweest. Eerst en vooral, **een grote dank je wel aan al mijn vrienden**. Stuk voor stuk zijn jullie allemaal toppers! Merci om te checken hoe het me gaat, me van achter mijn laptop te sleuren om leuke dingen te gaan doen, op vakantie te gaan en vooral om me in m'n vrije tijd te laten ontspannen en niet te laten nadenken over het werk! **Hélène**, dank je wel om mijn bestie voor altijd te zijn en altijd klaar te staan. **Amber,** ondertussen lopen we al heel ons leven lang hetzelfde schooltraject. Bedankt voor de geweldige vriendschap van over de jaren heen en om me altijd in alles te steunen! **Freya,** merci om altijd klaar te staan om met mij shotjes te doen - je bent fantastisch! Het **Drankwerpen** en **All-Inclusive** team dank jullie wel om altijd klaar te staan en vooral om altijd klaar te staan voor toffe tripjes, break-the-week drankjes in de Vischmijn en feestjes! Vooral **Steffi** en **Ellen**, bedankt voor de zalige diners, drankjes, vriendschap - toppertjes voor altijd! Ook aan de drie beste kinesisten van het land, **Navarre**, **Audrey**, **Glenn**, thank you voor zowel de leuke ontspannende weekenden en vakanties aan het strand als ook om mij weer te fixen wanneer alles vast zat! Vooral Navarre dank je om iedere keer mijn rug en schouders los te maken als die weer helemaal vast zaten van te lang achter mijn laptop te zitten! Merci ook aan **het hele interclub padelteam**, zowel de spelers als de supporters! Het moment van het jaar waar ik als trouwe supporter naar uitkeek en wat een extra drijfveer was om mijn werk af te hebben zodat alle focus naar het supporteren kon gaan!

Het volgende onvergetelijke ingrediënt bestaat uit **mijn allerliefste familie**! Aan al mijn familieleden, bedankt om altijd klaar te staan en om de beste supporters te zijn! Jullie zijn de beste familieleden waar ik voor zou kunnen wensen. Mijn lieve **oma's** (oma Anna & oma Laura) en **opa Nono**, jullie staan dag in en uit altijd klaar met lekker eten. Jullie hebben me werkelijk het belang van samen eten en delen

aangeleerd. **Thomas,** dank je wel om altijd even te polsen hoe het gaat en om me te helpen in mijn eerste studie van mijn doctoraat! **Joren**, dank je wel om altijd klaar te staan, zoals ook verschillende surveys invullen of een proefexamen te testen! **Benjamin**, thank you for proofreading some parts of my Ph.D., your feedback was so valuable! Mijn crazy zussen en broers, dank jullie wel om me altijd net wat meer werk te geven en om nog meer problemen te moeten oplossen naast mijn doctoraat. Haha, grapje, bedankt om altijd jullie kritische visies over lay-outs en stukken tekst te geven. **Amber**, dank je wel om altijd klaar te staan om feedback te geven! **Lotte**, dank je wel voor alle leuke lunchpauzes tijdens het werk. **Laurence**, dank je wel om me te laten stressen over iets anders dan het werk door te kijken naar je tenniswedstrijden ;). Mijn allerliefste schoonfamilie, jullie ook bedankt voor alles! **Simon**, bedankt voor me om te helpen met alle technische snufjes. **Christine**, bedankt om altijd klaar te staan en om voordat dat ChatGPT bestond mijn Nederlandstalige teksten te willen nalezen op spellingsfouten. **Annemieke**, bedankt om altijd te vragen hoe alles gaat, effectief mijn gepubliceerde papers te willen lezen, en alle levensadviezen. En dan natuurlijk, als belangrijkste aandeel van mijn liefste familie, mijn ouders. **Mama**, ook al ben je hier niet meer om dit mee te maken. Ik weet dat je van boven meekijkt en enorm trots bent. Ik heb zoveel van jou geleerd en naar mijn mening ook één van de belangrijkste levenslessen geleerd. Namelijk, "geef nooit op en blijf in jezelf geloven want je kan alles". **Papa**, je bent zo een groot voorbeeld voor mij. Dag en nacht een kritische blik op hebben en ook over mijn werk altijd de juiste kritische vragen weet te stellen. Het zorgt ervoor dat ik enorm gegroeid ben als persoon. Dank u wel om ervoor te zorgen dat wij alles konden doen wat we maar wilden en dat we de beste educatie hebben gekregen. Jullie zijn de beste ouders!

Tenslotte, **Thommy - Thomas**, bedankt voor alles. Ik denk dat ik dit veel te weinig zeg tegen je, maar zonder jou zou ik nergens staan (letterlijk 😉). Ook al begreep je vaak echt niks van wat ik vertelde of waren je adviezen voor mijn doctoraat niet altijd even succesvol, je stond wel altijd klaar. Ik sleur je letterlijk altijd overal mee naartoe en zonder jou zouden de afgelopen vier jaren niet zo zijn gelopen. Ondertussen kennen ook al mijn collega's jou omdat je simpelweg te lief bent en me met alles helpt! Lasagnebladen maken voor het InFlOOD-diner, DJ zijn op het FSW kerstfeest, taxi spelen van de luchthaven en terug - je bent van alle markten thuis en wil je voor geen geld kwijt! Je bent de allerbeste ❤️!