

A Content Analysis of Popular YouTube Channels Regarding Children's Food and Nutrition Literacy

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This study evaluates the content of the most popular YouTube videos worldwide in terms of the presence of messages that support or hinder children's food and nutrition literacy, using Azam Doustmohammadian and colleagues' conceptual framework of food and nutrition literacy in children. Forty-four food-related videos were selected from the three most popular child-themed YouTube channels. The results revealed that the cognitive aspects of the framework were slightly supported in the selected videos; however, negative messages were prevalent. Although there was no positive content to support children's food and nutrition literacy regarding interactive, emotional, and discussion skills, it was found that only contradictory messages were given in the emotional skills dimension. Another significant aspect of the findings, as discussed through the lens of childhood studies, is that certain types of eating behaviours were presented as more favourable than others, and many subtle moral messages were detected regarding normative assumptions about bodies, health, and food practices.

Key words: YouTube, food and nutrition literacy, children, media, content analysis

In the last decade, children's media consumption has shifted from traditional platforms such as television to social media (Coates et al., 2019). In parallel, it is underlined that children spend more time on social media than on television (Ofcom, 2018). Media tools are identified as one of the leading elements that may shape children's eating habits, as well as the social norms about food and health (Dorey & McCool, 2009; Friedman, 2025). Children's food choices and their perceptions of food are also shaped through messages via media culture (Tzoutzou et al., 2019). Even though research indicates numerous food scenes aimed at children in media content, an investigation of conveyed messages through media is still lacking (Tzoutzou et al., 2019). Thus, it is critical to evaluate whether the content of frequently used social media supports or hinders children's food and nutrition literacy.

As one of the most frequented media by children on the internet, YouTube has gained popularity in recent years. For example, 88% of children aged 3–17 in the UK watches YouTube videos (Ofcom, 2023; Castelló-Martínez & Tur-Viñes, 2020). The platform contains various kinds of content that

is viewed both by children alone and also consulted by preschool teachers as a learning resource in classrooms (Riley, 2017). Of interest to this study, social media platforms including YouTube play a significant role in shaping children's food knowledge and dietary perceptions (Coates et al., 2019). Although children's eating habits and the extent of their media use have been revealed to be correlated (Dorey & McCool, 2009), there is still a need for research to better understand how the content of social media, including YouTube videos, which are a part of children's lives, possibly shapes children's knowledge and skills related to food and nutrition literacy. The reason for conducting new research about this issue is that children can be confused about nutritional knowledge given implicitly through social media (Prybutok et al., 2024). This study aims to examine how the food content of child-themed videos corresponds or conflicts with core components of food and nutrition literacy. The findings are discussed according to food and nutrition frameworks, as well as by considering the food messages that convey social norms about food and health to children through the medium of media tools. Drawing on insights from fat studies, we bring a new perspective on the educational aspect of these media messages without promoting fear-based, weight-related discourses (Friedman, 2025).

Clarification of food and nutrition literacy

Nutrition literacy is defined by several authors as a subset of health literacy; it refers to the ability to access, interpret, and use nutrition information (Berman & Lavizzo-Mourey, 2008; Carbone & Zoellner, 2012). Velardo (2015), drawing on Nutbeam's (2000) tripartite model, defines nutrition literacy through three components: functional, interactive, and critical. *Functional nutrition literacy* involves understanding what dietary factors affect health, while *interactive nutrition literacy* involves applying this knowledge in real-life choices shaped not only by individual understanding but also by social, cultural, and environmental factors (Velardo, 2015). *Critical nutrition literacy* involves evaluating nutrition-related information, addressing social and cultural barriers to healthy eating habits, and taking action to promote equitable access to nutritious food for all (Velardo, 2015). In addition, food literacy has been defined variously as a combination of different skills and attributes that help individuals prepare safe, nutritious, and culturally acceptable meals (Desjardins et al., 2013; Thomas & Irwin, 2011) and as a range of knowledge and abilities required to use food in everyday life (Cullerton et al., 2012).

By synthesizing various definitions, Cullen et al. (2015) holistically define food and nutrition literacy as a lifelong, positive relationship with food, supported by important skills for promoting personal health and a sustainable food system across social, cultural, economic, and political contexts.

Velardo (2015) mentions potential links among health, nutrition, and food literacy, highlighting the functional, interactive, and critical dimensions that help conceptualize the concept holistically. One of the frameworks that considers these tripartite models is Doustmohammadian et al.'s (2022) conceptual framework of food and nutrition literacy in children, which includes both food and nutrition literacy components presented in two different domains—cognitive and skills—with the skills domain categorized into three dimensions: functional, interactive, and critical. The constructs included in the two main domains, cognitive and skills, will be covered in detail in the instrumentation section of this paper.

Similar to the previous definitions, Doustmohammadian et al. (2022) also attribute nutrition literacy to Nutbeam's tripartite model (2000) by highlighting the capacity to understand and perform nutritional information in three different domains: functional, interactive, and critical. Food literacy is defined as more specific than nutrition literacy because it encompasses all of the different skills, behaviours, and understandings necessary to plan, manage, prepare, and consume food and regulate food intake (Doustmohammadian et al., 2022).

This research emphasizes early food and nutrition literacy messages in media content for various reasons. First,

research demonstrates that early food and nutrition literacy can boost confidence in food-related practices (Hersch et al., 2014) and promote proper eating habits (Laska et al., 2012). Studies suggest that preschoolers can discriminate good from harmful food (Sigman-Grant et al., 2014) and have positive views about vegetables (Whiteley & Matwiejczyk, 2015), especially following nutrition education programs. Second, food literacy is positively correlated with gross motor and emergent literacy skills, suggesting that cognitively and physically enriched environments may improve food and nutrition competence (Tabacchi et al., 2019).

This study aimed to determine the food and nutrition information content of videos featured in popular child-themed YouTube channels. Researchers analyzed supporting and opposing food and nutrition literacy messages in ChuChu TV Nursery Rhymes and Kids Songs, Masha and the Bear, and Little Baby Bum, the three most popular child-themed YouTube channels worldwide (Statista, 2023). The adapted Doustmohammadian et al. (2022) conceptual framework for food and nutrition literacy in children was examined when analyzing these videos. The study contributes to childhood studies, public health, and media literacy studies by emphasizing the importance of digital media in food knowledge construction and the need to evaluate not only what children are taught but also what they are shown and told through the media content they consume.

Theoretical framework

This study uses Foucauldian biopolitics, the new sociology of childhood, and Bronfenbrenner's ecological systems theory to critically discuss how media food and nutrition messages for children reflect and reinforce power structures, social and environmental conditions, and cultural norms.

According to Foucault (1978), media interventions aiming to promote proper eating habits reveal biopower (see also Karnik & Kanekar, 2012). Foucault described how biopower governs and directs lives, aiming to create healthy, normalized, and productive bodies. Children are taught to follow government beliefs and activities, including those related to diet and eating behaviours. Foucault's biopolitical approach suggests that media, especially popular platforms like YouTube (Folkvord et al., 2016), regulate children's food knowledge, attitudes, and behaviours. Most child-themed videos promote prosocial or educational ideals, yet they may contain erroneous or deceptive nutrition messages.

Understanding that children actively engage with media, this study is also guided by the perspective of the new sociology of childhood (James et al., 1998; see also Corsaro, 2010), which views children as active members of society who try to understand, think about, and make sense of their experiences, including media messages. This study views children's food and nutrition literacy as shaped by media, health messaging, power, and personal skills. The new sociology of childhood states that children actively analyze and make meaning from food messages (Qamar, 2021). Therefore, analyzing media messages is essential to understanding how such literacy is socially constructed.

This study also uses Bronfenbrenner's (2005) ecological systems theory to examine how media messages affect children's development. YouTube videos may change children's food understanding through frequent exposure and symbolic modelling. These messages are understood and supported or challenged by family, friends, home routines, and early learning contexts in the microsystem (Bennett, 2024). Media typically reflects cultural attitudes about eating, and consumer behaviours, which are often affected by advertising and economic aims. Instead of considering children as simply absorbing this content, this study examines how media messages are presented related to food and nutrition knowledge. Children are not actively involved in the study, but the content studied mirrors the key signals children are often exposed to, providing vital insights into their symbolic food contexts.

As a contrasting yet complementary perspective, fat studies (e.g., Friedman, 2025) provides a theoretical orientation for examining how food-related messages may hold subtle values that direct children to consume in alignment with “healthy” eating and “good” choices. Linking health to personal responsibility, self-discipline, and control over the body, fat studies scholars have noted that media and educational content often mirrors dominant cultural values (Durocher, 2023). Even though these messages might seem neutral or well intentioned, they can unintentionally reinforce harmful stereotypes about weight and judgments around food choices (Cameron & Russell, 2016; Monaghan et al., 2022). Although the current study does not specifically aim to evaluate body image representations, it recognizes hidden messages that stimulate eating habits shaped by social expectations. Integrating the discourses proposed by fat studies into our discussion enables us to pay attention to ideological agents. This approach facilitates a deeper understanding of the way food and nutrition messages function in children’s digital media context.

Methods

This study used qualitative research methods, specifically content analysis, to systematically and objectively analyze message characteristics (Neuendorf, 2002). Researchers systematically analyzed the most-watched child-themed YouTube channels worldwide and their food-related videos to identify what kinds of messages were present in relation to the components of the food and nutrition literacy framework developed by Doustmohammadian et al. (2022).

Sample of videos

Videos were selected from the three most popular child-themed YouTube channels. However, it was revealed that one of the top three most viewed channels was not in English. Therefore, this channel was eliminated from the selection process. Ultimately, Chu Chu TV Nursery Rhymes and Kids Songs (70.2 million subscribers), Masha and the Bear (46.6 million subscribers), and Little Baby Bum (40.9 million subscribers) were selected as the channels that videos would be selected from, based on Statista’s (2023) list of the top ten English video channels targeting children.

For further selection of videos from these three different child-themed YouTube channels, the criterion sampling strategy was utilized (Patton, 2014). In selecting the videos, the preset of criteria was decided as (1) being involved in one of the above-mentioned child-themed channels (2) being published in English, (3) being present in the “popular videos” section, (4) being viewed by more than 10 million viewers, and (5) having food-related words in the title. Food-related words were not predetermined before selection, as it is impossible to anticipate all relevant words that might come up in titles. Instead, all popular videos with over 10 million views were screened for food-related words in their titles. Aside from the popularity of the selected content, special consideration was given to detecting content related to food. Figure 1 summarizes the selection process of sample videos.

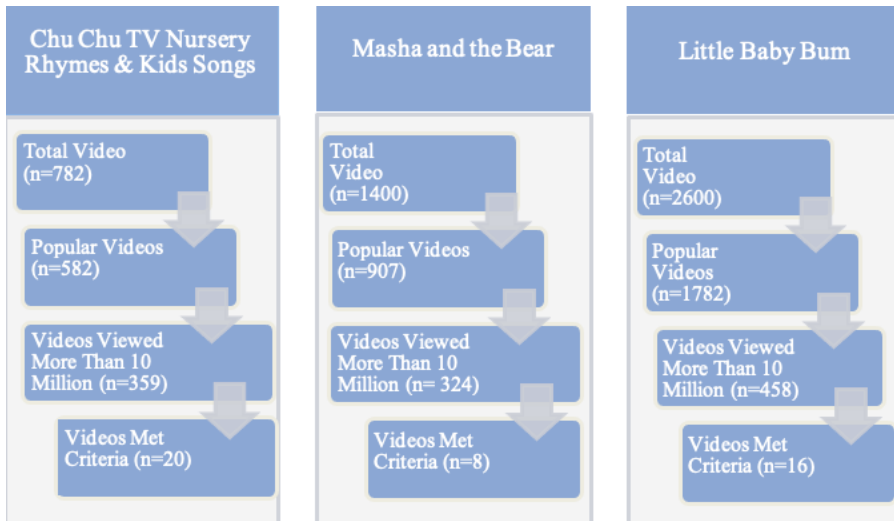


Figure 1. Selection process sample.

There were 20 food-related videos from the channel Chu Chu TV Nursery Rhymes and Kids Songs, eight from Masha and the Bear, and 16 from Little Baby Bum that met the predetermined criteria. That is why the sample for the current study comprised a total of 44 videos, including content such as nursery rhymes, songs, and stories. Although the selected 44 videos were not explicitly intended to teach children about food and nutrition, they were purposefully chosen based on their titles, which included food-related keywords. All these videos took food as a central theme, and the aim was to explore how food and nutrition literacy-related messages are portrayed in content that is popular and widely consumed by children worldwide, not necessarily content with an educational purpose. It is known that different media content contains various implicit, hidden messages, especially related to food, and studies investigating implicit messages in addition to explicit ones are lacking in the literature (Chang et al., 2018). That is why the food-related videos were purposefully selected and expected to have such messages. Analyzing any messages present in such videos provides valuable insight into the informal or incidental learning taking place during media consumption related to food and nutrition literacy.

The total duration of the 44 videos was 491 minutes in length, with a range of two minutes to 66 minutes. Table 1 summarizes the demographic information related to the sample videos in the current study.

Table 1. Demographic Information of the Sample Videos

	Chu Chu TV Nursery Rhymes & Kids Songs	Masha and the Bear	Little Baby Bum
Average number of views	60 million	474 million	68 million
Average video length in minutes	9.4 minutes	19 minutes	9 minutes
Average number of likes	151,000	1.5 million	62,000
Video content	Songs, nursery rhymes, stories	Songs, stories	Songs, nursery rhymes

Instrumentation

During the analysis of the sample videos, a codebook was prepared based on the conceptual framework for food and nutrition literacy in children developed by Doustmohammadian et al. (2022). In the framework, there are two domains of food and nutrition literacy, namely, the cognitive domain and the skills domain. Food and nutrition related knowledge, which is the main component of the cognitive domain, encompasses basic knowledge related to food and nutrition, such as knowing food groups, nutritional values, what a diverse-moderate diet is, etc. Understanding food and nutrition information, the second part of the cognitive domain, implies that a person who is food and nutrition literate has the necessary understanding to apply the knowledge to practice. So, the cognitive domain focuses on knowledge—not solely theoretical knowledge, but also understanding that helps individuals apply what they know to everyday health situations. The skills domain of the framework includes functional skills, which are the ability to access food and nutrition information from reliable sources and to apply this knowledge to everyday situations, such as checking expiration dates and ingredients while shopping. Interactive skills, the second component of the skills part of the framework, highlights the social aspects of food and nutrition literacy by focusing on the ability to communicate about food with peers, to say no to emotional cravings or unhealthy food offers, and so on. The final skills in the framework, critical skills, include media literacy (being able to analyze food-related content in the media), food label literacy (being able to interpret nutritional information on labels) and decision-making and planning skills, which include planning for family nutrition and food consumption in the household (Doustmohammadian et al., 2022). Because this study examined popular food-related YouTube videos' implicit and explicit messages that may help or hinder children's food and nutrition literacy and the sample videos' major audience is young children, Doustmohammadian et al.'s framework, which was developed for primary school-age children (aged 10-12), needed to be tailored to young children's development. Also, because our study analyzed videos and their messaging rather than children's food and nutrition related knowledge, some of the framework's components were not feasible to use.

Adapted version of the food and nutrition literacy framework for children. The original framework focuses on individual competencies in children aged 7–11; hence, many items, especially those necessitating sophisticated reasoning, were inappropriate for our dataset of children's YouTube videos. We concentrated on observable, narrative-driven representations that could either facilitate or impede these competencies, as our analysis focused on the videos themselves rather than on individual literacy levels. Accordingly, most components of the food

and nutrition related knowledge domain were retained in the adapted framework, with exceptions such as knowing nutritional values and micronutrients, sources of information, and understanding acquired nutritional information. Items like the interaction between food intake and physical activity, awareness of production/expiry dates, signs of contamination, and knowledge of food chains were also excluded. Similarly, while many interactive skills remained, components under functional and critical skills were largely excluded. These included the ability to search and obtain the required food and nutrition information from reliable sources, ability to analyze advertising and nutritional claims in the mass media, ability to interpret nutritional information on labels and nutritional markers, manage food choices and limit them in terms of selection, economic management to buy food, and ability to plan for their health, family, and surroundings.

To ensure the validity of the adapted version of the conceptual framework for food and nutrition literacy in children (Doustmohammadian et al., 2022), the revised version was sent to three experts in the field of early childhood education and one expert in science education, all of whom specialize in food and nutrition in early childhood. In addition to the excluded items, one item, fostering picky eating behaviour, was added to the framework since, in the analysis, it was found in the videos repeatedly. The items in the adapted version of the food and literacy framework for children are shared in Table 2.

Table 2: Adapted Version of the Food and Nutrition Literacy Framework for Children

*: Added item

1. Cognitive
1.1 Food and Nutrition Related Knowledge
1.1.1 Nutrition Knowledge
1.1.1.1 Knowing the preparation steps of foods
1.1.1.2 Knowing how to prepare healthy snacks
1.1.1.3 Knowing healthy and unhealthy foods
1.1.1.4 Knowing the importance of main meals and snacks
1.1.1.5 Knowing the relationship between common noncommunicable diseases and dietary patterns
1.1.1.6 Knowing moderate diet
1.1.1.7 Knowing diverse diet
1.1.1.8 Knowing balanced diet
1.1.1.9 Knowing food groups
1.1.2 Food Safety Knowledge
1.1.2.1 Hygiene before/during/after food preparation and eating
1.1.2.2 Recognizing safe places to buy foods
1.1.2.3 Knowing the basics of food storage

1.1.2.4 Understanding the importance of production and expiry dates
2. Skills
2.1 Interactive
2.1.1 Discussion Skills
2.1.1.1 The ability to reason for opposition to other unhealthy eating behaviours
2.1.2 Emotional Skills
2.1.2.1 The ability to resist unhealthy food cravings and desires
2.1.2.2. Fostering picky eating behaviour*
2.1.3 Interactive Skills
2.1.3.1 Ability to exchange food and nutrition information with others

Data analysis

Sample videos were analyzed by content analysis method. After the selection process, the sample videos and the codebook prepared were organized in MAXQDA 2024 software. Videos without English subtitles were transcribed to make the analysis more comprehensive by examining the text, audio, and visual content. After preparing and organizing the data for analysis, all videos and transcriptions were reviewed multiple times to increase familiarity with the content. Since a codebook was prepared, deductive/concept-driven coding strategies were employed (Saldaña, 2011). The coding process was completed according to the different components of the revised framework.

Trustworthiness

To support the study's trustworthiness, researchers employed several strategies recommended by Lincoln and Guba (1985). For example, the peer debriefing method was used to ensure credibility. An external researcher with no interest in food and nutrition in early childhood education acted as a devil's advocate, discussing different codes and categories with the study's researchers (Lincoln & Guba, 1985). To create transferability, rich and thick descriptions were provided regarding the sample videos and reporting phase of the findings (Creswell, 2009; Lincoln & Guba, 1985). Furthermore, expert opinions were consulted when it came to the codebook, and revisions were made based on their feedback to enhance external validity (Creswell, 2009). Finally, to support the study's reliability, the intercoder reliability method was utilized. Two videos from each channel were selected randomly, resulting in six videos coded by an external coder. The researchers and external coder reviewed and discussed coding disagreements until they reached 100% agreement.

Ethical considerations

The current study did not involve human participants or participant-generated content that might violate ethical principles. The sample videos were selected from open-access channels and did not require additional permissions.

Limitations

Due to practical constraints, the study's sample videos were limited by selection criteria, though the top-viewed child-themed channels offer many more videos for future research. Moreover, while one criterion for video selection was nutrition-related words in the title, some videos may have covered food and nutrition literacy components

even though they didn't focus primarily on these topics. To minimize such limitations, researchers checked each video's description to ensure that relevant food and nutrition content was not overlooked. Lastly, the analysis focused only on the top three child-themed English-language YouTube channels. So, the findings are limited to the scope of the chosen channels.

Results

Analysis of the videos revealed that among the 44 videos selected, 43 of them either supported the knowledge and skills outlined in the framework or conveyed opposing negative messages to children. Although the cognitive aspects of the framework were slightly supported in the selected videos, none of the skills presented in the framework occurred in the videos; on the contrary, negative messages related to these skills were present. The analysis showed that 35 of the videos included some content supporting children's food and nutrition related knowledge. However, among those videos, 26 of them also included negative messages associated with food and nutrition-related knowledge. Moreover, it was uncovered that none of the videos supported the discussion of, or the emotional and interactive engagement of, children's food and nutrition skills. On the contrary, 18 of the videos contained some negative messages related to these skills. This section provides a detailed report on the analysis of the sample videos. First, findings related to the cognitive aspect of the framework, involving food and nutrition related knowledge, are reported with both positive and negative results. Then, the skills aspect of the framework is reported with only negative findings, as no positive findings were identified. The flow of the findings is presented in Figure 2.

COGNITIVE ASPECT	1 SUPPORTING FOOD AND NUTRITION RELATED KNOWLEDGE	<ul style="list-style-type: none"> · nutrition knowledge · food safety knowledge · knowledge of food and its preparation
	2 CONTRADICTIONARY INFORMATION ON FOOD AND NUTRITION KNOWLEDGE	<ul style="list-style-type: none"> · incorrect nutrition knowledge · incorrect food safety knowledge · incorrect knowledge of food and its preparation
SKILLS ASPECT	3 SUPPORTING INFORMATION NOT FOUND	
	4 CONTRADICTIONARY MESSAGES ON SKILLS RELATED TO FOOD AND NUTRITION	<ul style="list-style-type: none"> · contradictory emotional skills

Figure 2. Flow of the findings.

Cognitive aspect of the framework: Supporting food and nutrition related knowledge

Food and nutrition related knowledge includes nutrition knowledge and food safety knowledge. Findings of the study highlight that whereas 31 out of 44 videos contained content that supported children’s nutrition knowledge, only 15 videos encompassed some messages related to food safety knowledge. All the food and nutrition related knowledge content detected in the sample videos is summarized in Table 3.

Table 3. Positive Content Related to Food and Nutrition Related Knowledge

Theme	Categories	Codes
Food and nutrition related knowledge	Nutrition knowledge	Supporting children’s knowledge of healthy and unhealthy foods (n=13)
		Fostering children’s understanding of a moderate diet (n=2)
		Fostering children’s understanding of a diverse diet (n=3)
		Fostering children’s understanding of a balanced diet (n=3)
		Supporting children’s knowledge of food groups (n=7)
Food safety knowledge	Knowledge of food and its preparation	Fostering hygiene before, during, and after food preparation and eating (n=14)
		Supporting children’s knowledge of safe places to buy food (n=1)
		Supporting children’s knowledge of basic food storage (n=1)
		Supporting children’s knowledge of food preparation steps (n=12)

Nutrition knowledge. It was found that in most videos, some nutrition-related knowledge was presented to children. The sample videos included messages about healthy and unhealthy foods (n=13). In general, many videos targeted vegetables (carrots, peas, broccoli, etc.), fruits (mango, orange, banana, watermelon, etc.), or foods that are sources of protein (eggs, milk). The main aim of this content in the videos was to help children understand why consuming different foods is essential and what benefits different foods have for the human body. The scenario below is presented as an example.

A child is dancing with broccoli, pepper, eggplant, and carrot. They all sing a song together about consuming vegetables. The song lyrics are: “Eat your vegetables; they are crunch, crunch, and yummy. Eating your vegetables can help you grow stronger and taller.” (Little Baby Bum, V5)

Although it was minimal, it was also found that some of the videos fostered children’s understanding of a moderate diet by modelling (n=2). In these videos, the characters and children were recommended to avoid eating so much unhealthy food and to minimize their portions when they wanted to taste some foods that may be harmful. An example scenario is provided below.

The main character and her brothers eat some ice cream and want to eat more. However, the father does not let the children eat more and emphasizes that they can eat some tomorrow, not today. The song’s lyrics are: “We want ice cream, we want ice cream, dear daddy, dear daddy. The ice cream is yummy, the ice cream is yummy. Can we please? Can we please? No, no ice cream, no, no ice cream, dear children, dear children. We will eat some tomorrow, we will eat some tomorrow; it is time to sleep.

(ChuChu TV, V6)

There were also some videos in which the main character was recommended to have a diverse diet, as well as videos modelling a diverse diet so that children could learn what a diverse diet should be (n=3). In these videos, characters consumed different food groups, including vegetables, fruit, grains, meats, and dairy products. The scenarios below provide some examples of the content fostering a diverse diet.

The main character in the video comes home from playing outside and washes his hands before eating. Then, he eats. The plate consists of chicken, potato, beans, lettuce, and different fruits, including a small apple and some strawberries. (Little Baby Bum, V7)

Although they were very limited, there were also some videos that included some balanced diet practices, which help children to foster their understanding of what a balanced diet is and what to consume within the scope of it (n=3). In these videos, some plates were presented with foods from different food groups in appropriate portions. The details are explained in the following example:

The main character in the video is asked what he wants to be in the future, and he conveys that he wants to be a chef. Then, he prepares a meal for his friends. He makes pasta, meatballs, and salad and prepares fruits for his friends. (ChuChu TV, V10)

In some videos, children were informed about food groups (n=7). In general, fruits and vegetables were presented to children; other food groups such as grains, meats, and dairy products were missing. Related to fruits and vegetables, the scenario below provides an example of content that supports children's knowledge of food groups.

A mother tries to teach her child, the main character, about three different fruits: apples, grapes, pears. It is emphasized that these foods are fruits and are healthy for the human body. (ChuChu TV, V8)

Food safety knowledge. Although not as common as messages about food and nutrition, some food safety knowledge was also presented to children in the sample videos. First, in 14 of the 44 videos, there was some content regarding hygiene before, during, and after food preparation and eating. In these videos, the main characters washed their hands before eating, washed fruits/vegetables before consuming them, used gloves while serving the food, and used clean materials to make the meals.

Bear, the main character, prepares an apple pie. Before preparing it, he washes his hands and the dishes he will use while preparing the pie. After cooking the pie, he puts a tablecloth on the table and sets the table with washed and clean forks, spoons, plates, and glasses. (Masha and the Bear, V5)

Out of the 44 videos, only one included content about safe places to buy food. In this video, desserts were purchased from a clean patisserie with freshly made food.

The chef working in the patisserie prepares a cake. The patisserie is introduced to the viewers as a place where fresh cake can be bought. (Little Baby Bum, V1)

Finally, only one of the sample videos contained messages supporting children's knowledge of basic food storage. The video clearly showed that ice cream should be placed in the freezer so as to stay fresh and not melt.

The main character's father takes ice cream from the freezer and eats it, sharing it with the children. He returns the container of ice cream to the freezer. (ChuChu TV, V6)

Knowledge of food and its preparation. In 12 of the 44 videos, food preparation steps were explained to children in detail, providing them with information on how to prepare basic food. To illustrate, in some of the sample

videos, different foods made with dough were presented. The ingredients to make a dough, how to roll it out, and how to cook it were presented. The scenario below is one example.

Bear starts to prepare strawberry jam. He first collects berries from the garden and washes them. Then, he places lots of sugar in a pot and melts it on the stove. Adding water and berries, he mixes the ingredients together with a wooden spoon. (Masha and the Bear, V1)

Cognitive aspect of the framework: Contradictory information about food and nutrition related knowledge

Although some of the videos have included content that supported children’s food and nutrition related knowledge, a considerable number of videos presented contradictory information (n=26). Within the scope of the sample videos, it was detected that some content conveyed incorrect nutrition knowledge (n=19) or incorrect food safety knowledge (n=18) to the children. Table 4 summarizes the incorrect food and nutrition knowledge presented.

Table 4. Incorrect Food and Nutrition Related Knowledge Content Detected in the Sample Videos

Theme	Categories	Codes
Incorrect food and nutrition related knowledge	Incorrect nutrition knowledge	Incorrect messages on a moderate diet (n=9)
		Incorrect messages on a diverse diet (n=7)
		Incorrect messages on a balanced diet (n=11)
	Incorrect food safety knowledge	No hygiene before/during/after food preparation and eating (n=17)
	Incorrect knowledge about food and its preparation	Incorrect information on food preparation and eating (n=6)

Incorrect nutrition knowledge. In a considerable number of videos, the main characters were modelling the exact opposite of moderate diet practices (n=9). In most of these 9 videos, the characters consumed excessive amounts of food, which may provide risky messages to children regarding a moderate diet.

The parents of the main character prepare different meals for their children. They act like servers in a restaurant, taking orders from the children. The children want hamburgers, pizza, and noodles. The parents give the children big portions of hamburgers, pizza, noodles, and French fries. (ChuChu TV, V13)

Similarly, some incorrect implications were presented regarding diverse diets for children (n=7). In these videos, children constantly ate from one specific food group without adding diversity to their plates or meals.

The main character asks his mother what his lunch box includes today. The mother responds that there is plenty of pizza in the lunch box, without any additional foods from different food groups. (ChuChu TV, V17)

Incorrect messages regarding a balanced diet were also present in the sample videos (n=11). In these videos, the characters consumed one food group in excessive portions, a practice that could cause health issues.

Bear collects lots of fruits to make jams, including apples, berries, and strawberries, and leaves them in the garden. He goes to get the necessary tools to make jam, such as pans, spoons, ingredients, etc. When he returns, he sees that Masha, the other main character (a child) has eaten all the fruits he collected. Masha has eaten three baskets of fruit at one time. (Masha and the Bear, V1)

Incorrect food safety knowledge. In the food safety knowledge section, the only negative message identified was related to hygiene. Analysis revealed that some sample videos contained instances of poor hygiene practices before, during, and after food preparation and eating (n=17). These videos showed behaviours such as not washing hands before eating or preparing food, eating unwashed fruits, stepping on the eating table, using the same spoon for tasting and mixing food, and finding foreign objects in the food. In one video, for example:

Two characters roll dough to make ravioli. A third character is chasing a caterpillar to catch it. First, the caterpillar comes to the table where the dough is being rolled, and then the child who is chasing it steps onto the table, which is full of prepared ravioli. (Masha and the Bear, V2)

Incorrect knowledge of food and its preparation. The analysis of the videos showed that although it was rare, some incorrect information on food preparation and eating was presented to the children (n=6). These videos included information on making specific recipes, but some incorrect information was present that might cause misconceptions in children. The scenario below is presented to exemplify this kind of incorrect information.

Characters are preparing a special type of ravioli. The entire preparation process for the meal is presented from beginning to end. However, where they needed to roll out the dough, the main character misused the rolling pin and rolled the pieces of dough by hitting them one by one. (Masha and the Bear, V2)

Skills aspect of the framework: Discussion, emotional, and interactive skills related to food and nutrition

The analysis revealed that none of the sample videos contained any discussion, emotional, or interactive skills related to food and nutrition. On the contrary, some contradictory skills were presented in the videos (n=19).

Skills aspect of the framework: Contradictory messages on skills related to food and nutrition

When the sample videos were examined, it was found that contradictory messages were present for only emotional skills. There were no contradictory messages relating to discussion or interactive skills, as there were no encouraging or instructional messages for these skills either. Table 5 summarizes the contradictory messages on skills related to food and nutrition.

Table 5. Contradictory Messages on Skills Related to Food and Nutrition

Theme	Categories	Codes
Contradictory messages on skills related to food and nutrition	Contradictory emotional skills	Fostering unhealthy food cravings and desires (n=15)
		Fostering picky eating behaviour (n=5)

Contradictory emotional skills. Some of the sample videos contained visual and verbal messages that might foster children’s cravings and desires, making them harder to cope with (n=15). Consuming these foods was encouraged by mentioning how tasty they are or using visual effects to make them look delicious.

The main character and his friends go on a journey to a world made of chocolate. There, all of the

characters consume chocolate. The lyrics of the song they sing are: Chocolate yummy chocolate, so super sweet. Chocolate yummy chocolate, favourite treat to eat. (Little Baby Bum, V11)

Apart from encouraging children to have food cravings, some videos also modelled picky eating behaviour, which might result in children acquiring a habit of not liking certain kinds of food (n=5). In these videos, the main characters did not want to eat vegetables in general.

Two children are waiting for their mother to give them their meals. The mother gives them some carrots, but the children do not want to eat the carrots, and they cry. Then, the mother gives them peas, which results in the same reaction in the children. (Little Baby Bum, V6)

Discussion and conclusion

The study findings will be elaborated in terms of two main aspects, *cognitive* and *skills*, derived from the adapted version of the conceptual framework for food and nutrition literacy in children developed by Doustmohammadian et al. (2022). Some of the video content aimed to inform children about “healthy” and “unhealthy” food, which is addressed in the cognitive aspect of the framework. A detailed analysis of the videos revealed that an emphasis on healthy and unhealthy food for the purpose of supporting children’s food and nutrition literacy was seen in 13 of 44 videos. Although the limited number of such videos is noteworthy from a food and nutrition literacy perspective, from a more critical standpoint, it can be concluded that even well-intentioned nutrition messages may reinforce societal norms about what constitutes “right” and “wrong” ways of eating, carrying moral undertones that frame some foods as “good” and others as “bad.” As Friedman (2025) notes, such hidden messages are risky in terms of weight-based moral judgments.

Another significant finding was that the videos generally did not contain any ideas for fostering children’s understanding of a diverse, moderate, and balanced diet. Beyond representing a critical educational gap for preschoolers, this absence is also part of a broader formation that shapes how food and health are portrayed in children’s media. Rather than offering diverse representations of eating, the videos present a narrow framework that normalizes specific food consumption patterns and shapes how children perceive and engage with food. As emphasized by Matthes et al. (2024) and Burns and Hurt (2011), these kind of representations in children’s media can subtly promote unfavourable changes in eating habits. Findings of those studies, as well as ours, emphasize the need to critically evaluate the ideological and educational content of media before it is presented to children.

This study also reveals a significant point that should be considered in terms of food safety knowledge. Interestingly, our research findings show that, while videos including content for fostering hygiene before, during, and after food preparation are present, the number of videos including misleading information about hygiene before, during, and after food preparation and eating is higher. For example, stepping on the eating table can mislead children rather than providing them with accurate information about food hygiene. As revealed in a previous study conducted by Eves et al. (2010), children already have misconceptions about food hygiene, such as needing to wash hands if they are obviously dirty, which means they may not figure out the underlying reason for the desired behaviours and the possible consequences, such as foodborne illnesses. Our research findings can shed light on the possible causes of where these misconceptions stem from by elaborating the media tools. Moreover, regarding food safety knowledge, we found only one video with content about both safe places to buy food and supporting children’s knowledge of basic food storage, meaning that children are not being adequately informed about food safety practices. This finding brings a significant perspective that needs to be focused on, as understanding where to purchase safe food, how to process it to eat, and how to apply appropriate hygiene practices are key components of food safety that can help prevent foodborne illnesses (WHO, 2022). In this regard, the limited content revealed about food

safety knowledge, especially for young children, is quite concerning. According to the World Health Organization (2022), children under 5 years old carry 40% of the foodborne illness burden, and almost 1 in 10 people get ill after food contamination, resulting in 420,000 deaths annually in the world. Therefore, educating children on basic food safety in terms of food hygiene and safety is essential for instilling lifelong habits that promote health and prevent contamination (Eley et al., 2022). Instead of providing potentially misleading or normatively structured messages about food safety, the content of children's media could be a tool for initiating discussions with children about hygiene and safety issues related to food consumption. This approach encourages a critical engagement with media sources rather than allowing children to passively accept content directly from producer to consumer.

In terms of knowledge of food and its preparation, we found that 12 of the 44 videos included food preparation and cooking. Although at first glance this may seem positive in terms of informing children about how to prepare or cook food, when the contents are examined, it is noteworthy that the food preparation process is misrepresented to children (e.g., rolling out dough by hitting it with bare hands only). Exposure to such content may lead to the development of misconceptions in children's understanding.

The analysis also revealed that the foods for which preparation was shown were high in carbohydrates and sugar, and their portions were far above the amount suitable for children. Similarly, Boyland and Halford (2013) found that most of the content presented to children in media tools is geared toward foods high in fat, sugar, and salt. These results may show that such scenes presented to children in social media can trigger food cravings and desires in children, as stated by Ofcom (2018) and Matthes et al. (2024). Since these kinds of videos are presented with joyful music, bright visuals, and playful dialogue, they subtly carry the message that unhealthy food consumption is fun, exciting, and emotionally rewarding. These messages are not only risky in terms of conveying incorrect nutritional knowledge, but they also contribute to a wider cultural norm that links food with pleasure. Within this norm, the moral ideal of moderation emerges as a necessary control mechanism, eventually affecting children's understanding of eating through broader social norms (Durocher, 2023).

Moreover, from a Foucauldian perspective, consistently exposing children to specific types of food consumption via media tools can be regarded as an element of broader political issues that regulate children's food desires, eating habits, and perceptions of what is normal to consume. Thus, the media serves not only as entertainment but as a subtle form of control by reinforcing consumption habits and normative health discourses in parallel to commercial interests.

In addition to the content presented in the analyzed videos, this study also revealed missing categories of the framework. Even though the above-mentioned aspects of food and nutrition related knowledge were found to be presented to children by modelling or encouragement, many other types of knowledge were not mentioned in the videos, despite all the selected videos being related to food and nutrition. Within the scope of nutrition knowledge, none of the videos foster children's understanding of "the importance of main meals and snacks" or "the relationship between common diseases and dietary patterns." In addition, none of the videos provides information on "the importance of the production and expiration date of foods," which is an aspect of food safety knowledge that can minimize avoidable foodborne illnesses (Patnaod & Pivarnik, 2000) by improving public knowledge (De Boer et al., 2005), especially starting with children at younger ages (Eley et al., 2022). The absence of these critical elements of the framework reflects how children's eating habits are shaped, not solely by their individual choices, but also by the societal narratives presented or not presented to them (Varela et al., 2024). From a fat studies perspective, this gap emphasizes the need for broader societal and media-based support rather than placing the burden solely on individual responsibility (Bombak, 2016; Durocher, 2023). These findings signal the underutilized potential of YouTube videos, which are prevalent in preschool classrooms and the homes of young

children. Both the absence of information and the presence of messages favouring specific kinds of food illustrate how mechanisms of government function through media, leading children and adults to adopt specific norms without critically questioning the underlying structural factors such as commercial influences or socioeconomic constraints (Foucault, 1978).

The analysis revealed that food-related videos give messages that increase children's food cravings and desires (e.g., setting out on a journey to a world of chocolate) and foster picky eating behaviour (e.g., reacting to and resisting eating vegetables by crying). Similar findings about food desires in previous research also revealed that food cues given via media tools can cause physiological and psychological effects such as increased salivation and dreaming about eating more food which may lead to excessive food intake as a chaining situation (Folkvord et al., 2016). Also, Yalçın et al. (2022) found that children who have more than two hours per day of screen time are more prone to be picky eaters. The seemingly innocent scenarios presented in the videos produce normative consumption patterns for children and create emotional responses to food. In the videos, children are encouraged to crave such foods, yet these same desires are later subjected to body-based stigma. Additionally, scenarios that depict children rejecting vegetables through exaggerated emotional reactions construct a moral hierarchy of foods, which in turn makes children's eating habits no longer personal choices but rather broader moralized behaviours, as suggested by Friedman (2025). When viewed through the perspective of Bronfenbrenner (2005), the findings of the current study emphasize the need for systemic interventions at the exosystem and macrosystem levels, particularly in terms of media regulation and policy development to regulate proper media reviewing among children. Addressing these issues requires broader societal responsibility to reshape the environments in which children form their food-related perceptions.

Another notable finding of this study was that most of the skills components within the adapted framework were not present in the sample videos. Regarding discussion skills, although the framework includes the ability to reason and critically reflect on food-related messages, none of the videos conveyed or modelled such a message. Regarding emotional skills, the ability to resist food cravings and desires is included in the framework. However, none of the videos presented such content. Finally, the ability to exchange food and nutrition information with others is present in the framework. However, such an instance was not modelled or taught to children in any of the videos. As highlighted by Eves et al. (2010), children's eating habits are shaped by misconceptions formed through memorizing desired behaviours without fully understanding or critically reflecting on food-related judgments. However, early childhood is a significant period to support children in their developing relationship with food and to encourage a reflective and inclusive understanding of eating (Eley et al., 2022). Although media content aimed at children has a remarkable potential to support food and nutrition literacy in young children, this potential remains largely underutilized. The findings of this study highlight the urgent need to critically review such food-related content in children's YouTube videos, enhance its educational value in terms of food and nutrition knowledge, and reduce the stigmatizing narratives heavily embedded in food-related messages in the videos.

Implications and future directions

This research has potential implications for early childhood educators, teacher education programs, parents, and global YouTube channels producing large amounts of children's content. This study highlights the importance of media literacy, particularly the ability to critically analyze media messages (Herdzina & Lauricella, 2020). It is essential to promote critical dimensions of media, nutrition, and food literacy among stakeholders responsible for selecting and monitoring young children's media exposure. Teacher education programs should prioritize media and nutrition literacy to equip early childhood educators with the skills to critically select and supervise media content in educational settings.

To teach young children to critically evaluate media, early childhood educators should include media literacy activities. Since media content utilized in schools does not support most of the food and nutrition framework, the study suggests integrating nutrition and food-related content, without reinforcing stigmatizing social norms about body size. Teachers should plan and incorporate these aspects into their lessons to compensate for the missing parts. Parents should practice parental mediation, which involves co-viewing with their children and discussing the video content to clarify its messages (Zimmer et al., 2019). YouTube filters children's content, but it does not ensure pedagogically and morally safe content. Further enhancements may involve subject-specific experts evaluating content for explicit and implicit messaging and increasing positive content.

Although this study focused on video content, future research should explore how children make sense of such messages. Recognizing children as active contributors rather than passive subjects (Formosinho & Barros Araújo, 2004) offers deeper insights into their interpretations. Further studies could also assess how food-related media portray cultural values and power structures, as well as which food traditions are highlighted or overlooked, uncovering possible biases in children's food-related media.

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