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A REVIEW OF FOOD AND NUTRITION COMMUNICATION AND PROMOTION IN GHANA

Parbey P[1] and R Aryeetey[2]*

Phyllis Parbey

*Corresponding author email: raryeetey@ug.edu.gh

[1]University of Health and Allied Sciences, Hohoe Campus, Ghana. Department of Family and Community Health, PMB 31

[2]University of Ghana School of Public Health, Legon. Accra, Ghana

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ABSTRACT

Dietary perception, behavior, and nutritional status can all be influenced by exposure to information. Behavior change communication that is appropriately designed and implemented is critical for motivating optimal dietary behavior. On the other hand, inadvertent or deliberate misinformation can drive unhealthy dietary behaviors. As part of the process to develop food-based dietary guidelines (FBDGs) for Ghana, this rapid evidence review examined the nature, extent, sources, and medium of food and nutrition information dissemination and promotion in Ghana. PubMed, Cochrane, Google Scholar, and Open Access Theses Dissertations (OATD) databases were searched systematically using keywords to identify relevant peer-reviewed and grey literature. The review included 31 documents, after excluding 1,302 documents for ineligibility (based on irrelevant title, abstract, and duplicates). Limited reporting of undernutrition was found in print and electronic media. Unhealthy foods, including sugar-sweetened beverages, snacks, yogurt, instant noodles, candy/chocolate, and ice cream were frequently advertised through various communication media. Children are highly exposed to food advertisements, which target them. Promotional characters, animation, billboards, and front-of-store displays; product-branded books, and toys are common strategies for food marketing and advertisement in Ghana. The most frequently reported sources of health and nutrition information were television, radio, social media, health professionals, families, and friends. Children and adults experienced changes in food preferences and choices as a result of exposure to food advertised on television. The commonly used traditional media were radio and television; printed newspaper use has declined tremendously in the past decade. Social media use (particularly WhatsApp, Facebook, and YouTube) is highest in urban areas, and is growing rapidly; young adults are the most active users of social media platforms. Experts recommend regulation as a mitigation for nutrition miscommunication and inaccurate promotion. The current review highlights the need for regulation of food marketing, and advertisement to safeguard a healthy food environment in Ghana.

Key words: advertisement, promotion, diet, regulation, social media, food, Ghana

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INTRODUCTION

Due to modern technological innovations, information can be communicated these days via multiple media including radio, television, magazines, and the world wide web. Depending on the target group and coverage, different types of media can influence public awareness on a wide range of issues, including health and nutrition [1]. In particular, information disseminated through various media can influence food choice and behavior [1, 2].

Globally, changes in the food environment and food systems are driving behavior change. An important part of this change is the increased opportunities for disseminating information through advertising, labeling, and other means of product and service communication, through a variety of media. In the absence of appropriate communication interventions, exposure to misinformation can lead to poor dietary patterns and choices, and further exacerbate the current trend of increasing exposure to sub-optimal diets. Over time, sub-optimal diets result in malnutrition in all its forms including undernutrition, overweight, obesity, as well as Diet-Related Non-Communicable Diseases (DR-NCDs) [3].

In 2014, an estimated 40% of adult women in Ghana were overweight or obese (25% overweight, 15% were obese) and 16% of adult males were overweight [4]. These outcomes are partly attributable to increased exposure of the population exposed to unhealthy food environments that influence their risk of obesity and other DR-NCDs [5]. During this same period, there have been important changes in both the food system and population behavior, consistent with the nutrition transition concept [6]. However, there is limited evidence on how various media disseminates information, and how the process and channels of dissemination have changed over time in Ghana.

Evidence from other settings shows that the use of various media platforms and marketing strategies, such as popular cartoon characters, television, the internet, and social media can increase demand for food products (both healthy and unhealthy options) [7]. Exposure to promotion is known to influence children's awareness of product brands, preferences, and consequently, their purchases and consumption behavior [8]. On the other hand, the media, especially, social media, can also be viewed as an opportunity for nutrition communication, especially, for adolescents and young adults [9]. This rapid scoping review has systematically identified and synthesized existing evidence on food and nutrition communication and promotion in Ghana.

MATERIALS AND METHODS

A rapid scoping review was conducted to synthesize information on food and nutrition communication and promotion among the Ghanaian population.

Search strategy

A systematic search of selected electronic databases and search engines (PubMed, Cochrane, Open Access Theses Dissertations, Google Scholar, and Google) was carried out in September 2020. Search terms and appropriate combinations of these terms

related to food promotion and communication were developed for various databases and search engines as shown in Table 1. All documents were combined in Zotero, and duplicates were removed before the title and abstract screening. The full-text screening and selection of the articles or materials were guided by *a priori* inclusion/exclusion criteria (described below). Also, the reference list of identified articles and materials was searched for additional studies.

Inclusion/exclusion criteria

The study included peer-reviewed articles as well as grey literature (reports, policies, dissertations, and research/policy briefs, if it is written in English, and the information (food advertising, nutrition communication, nutrition promotion, social media) is relevant to Ghana. Documents were excluded if full-text was unavailable.

RESULTS

A total of 1,333 articles and documents were retrieved. Of these, 1170 articles were excluded following duplicate exclusion and title screening. A total of 163 abstracts were then screened, and 132 documents were subsequently excluded. The remaining 31 documents were full text screened and eventually included for data extraction. A narrative synthesis approach was conducted across all studies included in this review. Figure 1 shows the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) flow diagram describing study selection.

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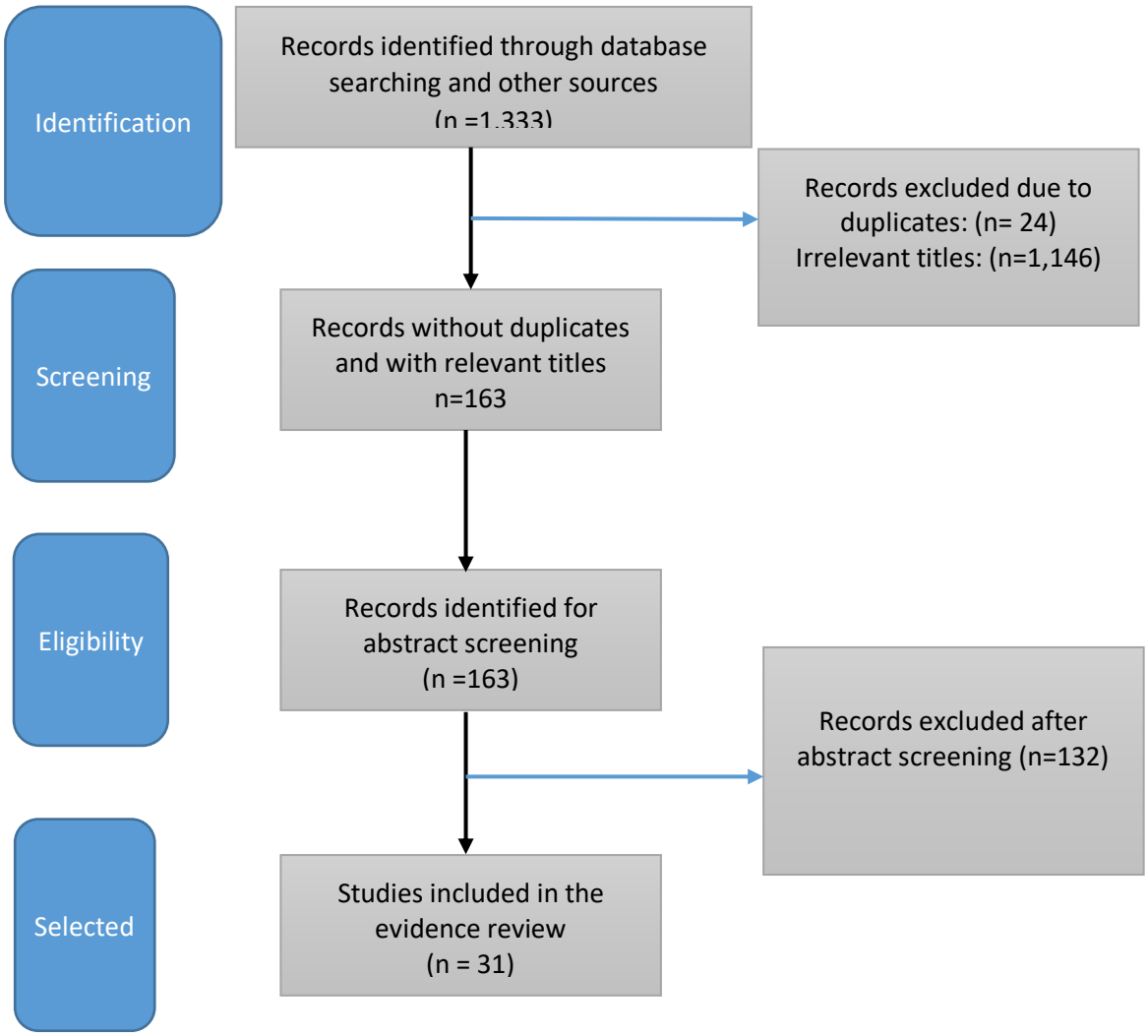

Figure 1: PRISMA flow diagram describing study selection

Quality assessment

Each document included in the review was rated using the quality assessment tool for quantitative studies [10]. This tool assesses the quality of the document based on 6-criterion namely: selection bias, study design, confounders, blinding, data collection method, and withdrawals and dropouts. Each criterion had a rating of good, fair, or weak (details on the use of the tool and ratings can be assessed online). The overall rating of each document was high quality, moderate quality, or weak quality. About half of the documents were high quality (54.8%) and 45.2% were moderate quality.

Food and nutrition reporting in the media

There is limited evidence on food and nutrition reporting in the news media in Ghana. Only one study reported on this, indicating that media reporting on nutrition is uncommon. However, the report indicated that there is a high opportunity for leveraging women and children's issues to increase food and nutrition reporting in the

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media. As an illustration, a workshop on media reporting resulted in increased reporting of food and nutrition in the media [11].

Foods such as sugar-sweetened beverages (25.8%), snacks (12.8%), milk and yogurt (12.4%), instant noodles (7.1%), candy/chocolate and ice creams (6.4%), and breakfast cereals and beverages (5.3%) were frequently advertised on television. As fruits (2.0%), water and vegetables (1.5%) were less advertised on television. In some parts of Accra (72.7%) and the Volta region (37.0%), outdoor advertisements were mainly on sugar-sweetened beverages. A study that employed content analysis of television (TV) food advertising among primary school children in Sagnarigu, in the Northern region, revealed that alcoholic beverages (53.9%) and infant and toddler foods (54.5%) advertisements were shown during children's TV viewing period [12, 13, 14, 15, 16].

Exposure to food advertising by age group

Two documents were reported on food advertising among children. A study by Amegashie [17] reported that the majority (77.2%) of school children (5-13 years) were exposed to food advertisements at least once a week. In this study, a small percentage (5.2%) of outdoor advertisements was located directly next to child-oriented facilities such as schools and playgrounds. Thirteen percent of advertisements were child-targeted, and all of them were associated with Nestlé's Milo brand; none were associated with Pepsi or Coca-Cola advertisements [14].

Strategies adopted in food advertising and marketing in the country

Three documents reported evidence on strategies adopted in food advertising in the country. The use of Posters (78.3), branding (vendor cart) (30%), painting (23.7%), billboards and front store display (20.8%) and small signs were mainly used for outdoor advertisement. It was found that almost half of the outdoor advertisements featured people, 34% of whom appeared to be 18 years or older while 13% were images of children. Promotional characters such as sports icons, Ghanaian personalities (were used especially for sugar-sweetened drinks), animations and cartoon characters (29.0%) and characters that portray happiness, fun and pleasure (14%) were used for television advertisement [14, 16, 17]

Main sources of health/nutrition education and information

Fourteen documents reported evidence on sources of health/nutrition information. Three documents published articles on sources of nutrition information on breastfeeding and ophthalmic nutrition. The most commonly reported source of such information were health professionals (97.1%), media (92.7%), TV (55.1%) and radio (49.1%) [18, 19, 20]. The sources of other nutrition-related health information such as hand washing, immunization, use of insecticides treated bed net (ITN) were radio (81.4%), TV (75%), health professionals (97.1%), social media (1.8%), family and friends (25.4%) [21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31].

Population groups that own communication media devices (such as radio, TV, telephone, smartphone, computer)

Three nationally representative household surveys reported findings on television ownership. The findings from the Demographic and Health Survey (DHS) data indicate

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an increase in television ownership by households from 2008 to 2014 (43%-62%). The 2014 Living Standards Study (GLSS6) 2014 found television ownership to be 57.2%. Television ownership was found to be higher in urban settings compared to rural areas [32, 33, 34].

Information across all the papers indicated that >50% of Ghanaian households own a radio. However, there has been a slight decrease in radio owner possession over time. Also, higher proportions of households in the rural areas (59.2%) own radio compared to those in the urban settings (43.8%) [32, 33, 34].

The findings across four studies on the ownership of mobile phones indicated that >50% of Ghanaians possess mobile phones. There has been a sharp increase in ownership between 2008 and 2014. In a more recent study, four out of every five households in the country own a mobile phone. The ownership is higher in urban areas than in rural settings [32, 33, 34, 35]. Two studies reported on the ownership of computers. There was a gradual increase in the ownership of computers, as observed between 2014 and 2018. The ownership is higher among males compared to females [33, 34, 35].

Population groups active on social media

Three studies reported on social media use. There has been a rapid growth in the use of social media (about a 12% increase between 2018 and 2020). The social media platforms that were frequently reported were: WhatsApp (82%), Facebook (71%), YouTube (62%), Instagram (61%), Facebook messenger (51%), Twitter (37%), and Snapchat (37%). Younger persons and those with higher education levels are the most frequent users of social media [36, 37, 38].

Commonly used traditional media in the country

Three studies reported evidence on the use of radio, television, and newspaper. The use of radio and television as a source of information was >50% as newspaper use was <20% among the Ghanaian population. The use of radio and television at least once a week was found to decrease between 2008 and 2014. Also, the use of newspapers has declined tremendously. The exposure to media was found to be high among men than women, high educational level, and economic status [32, 33, 36].

The influence of advertisement on food choices and preferences

Only one study provided evidence on the influence of advertisement on food choices and preferences. Most mothers (71.8%) reported that they were influenced by the nutritional benefits of the advertised foods. Fifty-five percent of parents reported that their child's preferences had changed due to the exposure to food advertisements [17].

Experts' recommendations on the use of media for the promotion of food and nutrition issues

Experts recommend the provision of legal legislations by the government and its agencies to regulate the communication and promotion of foods especially advertisements that promote food high in sugar, salt, and trans-fatty acids within the school environment, other children's settings as well as print and electronic media [3,

16, 17]. Also, experts recommend paid advertisements such as campaign posts on Facebook which increases exposure and is achieved at a low cost. Specifically, on breastfeeding, experts recommend input from a variety of sources with unique perspectives on the content, culture, dissemination platforms, including end-users [39, 40].

DISCUSSION

This review was designed to describe the media and strategies used for communicating and advertising food and nutrition information in Ghana. The evidence showed that there is no structured approach to nutrition information dissemination in Ghana. This is probably a reflection of the limited priority given to food and nutrition issues in Ghana. The fact that a workshop on media reporting contributed to increased food and nutrition coverage also suggests that there is limited awareness and capacity of nutrition reporting among media practitioners [11]. It is important to note, however, that the media has focused on promoting commercial products and services through advertising [41]. These findings show that there is a need for deliberate actions to increase capacity for leveraging media for nutrition communication. Such effort should complement the implementation of global recommendations to protect populations, especially young children, from the unhealthy marketing of commercial food products and services. This is especially important because a majority of commercially promoted foods are processed and have a high quantity of unhealthy ingredients (lipids, simple sugars, and salt) [42].

The government of Ghana has recognized the importance of promoting health and nutrition information. Recently in 2019, the Ghana Health Service elevated health promotion from a department to a division. Earlier in 2015, the food and drugs authority has also banned celebrities from advertising and endorsing alcoholic beverages. Beyond these actions, there is a need for further actions to build the capacity of government, and civil society organizations to leverage existing media to expand the scope and intensity of food and nutrition communication. In addition, there is a need to strengthen the sanctions regime against media practitioners who do not follow existing regulations on food and nutrition promotion and advertising.

The review shows that while print media is on the decline, electronic media, particularly, radio and television remain important means of receiving information in Ghana. In addition to these, social media and the internet were also reported as rapidly increasing as a source of health and nutrition information. Because mainstream government agencies have not yet taken advantage of the internet and social media, there is a need for prioritizing its use in food and nutrition communication. This is important because of the rapid growth of social media over traditional media. Social media also has advantages of social media marketing thus, enhancing the reach and reduced cost, and may therefore be recommended as a cost-effective mechanism to educate the public on the recommendations from the Ghana FBDGs [43].

Food and beverages such as sugar-sweetened beverages (SSBs), snacks, milk and yogurt, instant noodles, candy/chocolate, ice creams, and breakfast cereals were mainly

advertised in the media with little nutrition information. Food advertisements were targeted towards young children as alcoholic beverages and infant and toddler foods were found to be shown during children's peak viewing periods. However, according to the revised Food and Drugs Authority (FDA) regulations on alcoholic beverage advertisement, advertisements should not be aired on radio or TV between the hours of 6:00 am and 8:00 pm [44]. World Health Organisation (WHO) has also reported that advertising and other forms of food and beverage marketing, especially to children, are extensive and primarily concern products with a high content of fat, sugar, or salt [7]. Similar findings were found in a study conducted in the USA where marketers targeted and sold foods high in sugar and fat to young children and adolescents as future adult consumers with purchasing power [45]. The increased advertisement of unhealthy foods such as those with saturated fats, trans-fatty acids, free sugars, and salt can be related to the changing trend in the food environment and food systems [3]. Food advertising needs to be regulated since eating habits and behaviors are acquired in the early stages of life and will typically continue into adulthood [46].

Promotional characters were mainly used for sugar-sweetened drinks on TV advertisements as well as animations, cartoon characters, and advertisements that portrayed happiness, fun, and pleasure. Also, for outdoor ad advertisement of foods, billboards, small signs, paintings, front-of-store displays, and branded storage units were adopted. In the USA, similar findings were observed as television, in-school marketing, product placements, kids' clubs, and toy products were strategies used to advertise foods high in sugar and fat to children and adolescents [45]. The evidence has shown that television advertising is common across countries and concluded to some effect on diets and diet-related behavior [47, 48]. In as much as the use of traditional media dominates food advertising, there is a need for future research to explore digital marketing exposure in the Ghanaian context as a result of increasing media use globally. Digital marketing has attracted considerable attention as a modifiable risk factor for unhealthy diets and weight gain [48].

Exposure to food advertisements influences food choices and habits. Evidence from this review showed that others were influenced by the nutritional benefits of the advertised foods. Also, children experienced changes in food preference as a result of exposure to food advertisements watched on TV. Mostly televised advertisements on foods have been shown to influence food choices and preferences. Even among adults and children, the advertisements raise their awareness of the food brands and influence their choices and behaviors [49, 50]. Experts, therefore, recommend the provision of legal legislations by the government and its agencies to regulate the promotion and advertisement of unhealthy foods especially advertisements appealing to children and within their setting. Also, there is need to explore social media as a cost-effective mechanism to promote food and nutrition campaigns.

CONCLUSION

Food and nutrition information was rarely reported in the media; there is limited reporting of undernutrition. Sugar-sweetened beverages were commonly featured in advertising and children are frequently exposed to food advertisements. The use of

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promotional characters, animation, billboards, front-of-store displays, product-branded books, and toys were strategies adopted for food marketing and advertisement. The main reported sources of health and nutrition information were television, radio, social media, health professionals, families, and friends. Social media use is high in urban areas and growing rapidly; young adults are the most active users of social media (WhatsApp, Facebook, and YouTube are the preferred platforms). The most commonly used traditional media were radio and television; newspaper use has declined tremendously. Experts recommend regulation to guide food and nutrition communication and promotion. The current review has shown the need for government and stakeholders to support regulation of food marketing and advertisement to safeguard a healthy food environment in Ghana.

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Table 1: List of search terms, date of search and database and search engines searched

Database	Keywords and combination
PubMed 5th-8th September 2020	Food AND Nutrition AND media And Ghana; Food and Nutrition and Advertisement AND Ghana; Food advertising AND Marketing AND Ghana; Nutrition information AND Nutrition education AND Ghana; Telephone OR Radio OR smartphone OR computer OR communication devices AND Ghana; Magazine OR newspaper OR television OR radio OR billboards AND Ghana; Expert recommendations AND Media And Nutrition AND Food And Ghana
Cochrane 10th-13th September, 2020	Food AND Nutrition AND media And Ghana; Food and Nutrition and Advertisement AND Ghana; Food advertising AND Marketing AND Ghana; Nutrition information AND Nutrition education AND Ghana; Telephone OR Radio OR smartphone OR computer OR communication devices AND Ghana; Magazine OR newspaper OR television OR radio OR billboards AND Ghana; Expert recommendations AND Media And Nutrition AND Food And Ghana
Open Access Theses Dissertations 15th-18 September 2020	Food AND Nutrition AND media And Ghana; Food and Nutrition and Advertisement AND Ghana; Food advertising AND Marketing AND Ghana; Nutrition information AND Nutrition education AND Ghana; Telephone OR Radio OR smartphone OR computer AND Ghana
Google Scholar 21st-24th September 2020	Food AND Nutrition AND media And Ghana; Food and Nutrition and Advertisement AND Ghana; Food advertising AND Marketing AND Ghana; Nutrition information AND Nutrition education AND Ghana; Telephone OR Radio OR smartphone OR computer AND Ghana

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Table 2: Summary of Selected Eligible Studies

Authors	Study site	Study population	Paper Quality	Summary of findings
[3]	Ghana	19 local experts	High	The experts recommended the provision of legislation to regulate the promotion, sponsorship and advertisement and sale of food and drink within the school environment as well as print and electronic media
[4]	Ghana	General population	High	About 80.3% in the country own a mobile phone and 57.2% own a television set. Proportions owning communication devices was much higher in Accra. Ownership of radio was higher in rural areas compared to the urban settings
[11]	Ghana	The general population	High	There was little structured media reporting on nutrition and nutrition-related issues
[12]	Sagnarigu district	400 primary school children aged 9-11 years	High	About 4,551 advertisements per week was shown on TV, of which 8% were food-related
[13]	Ghana	1926 TV channels	High	The foods advertised were sugar sweeten beverages, snacks, milks and yogurt, instant noodles, candy/chocolate and ice creams, breakfast cereals, and beverages. Energy-dense nutrient-poor food adverts dominated across all three TV channels

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[14]	Accra-Cape Coast Highway	77 Outdoor advertisements	High	Seventy-three percent of advertisements featured SSBs, and Coca-Cola accounted for 59.7% of advertisements. Thirteen percent of advertisements featured children and 5.2% were located near schools or playgrounds
[15]	University of Ghana, Legon Campus	503 outdoor advertisement	High	The most advertised food product was sugar-sweetened drinks (37.0%). Different promotional techniques deployed included the use of claim pronouncement, promotional characters, emotional appeal, premium offer, and price promotion
[16]	Ghana and Kenya	Audit of outlets and advertisements	High	Sugar-sweetened beverages was found to be a common item advertised in Accra and Ho. Paintings, billboards, and posters were advertising strategies observed
[17]	Adabraka	149 Parent-child pair (child aged 5-13 years)	Moderate	Television, product-branded books, billboards and school signpost were the strategies adopted in food marketing to children
[18]	Accra Metropolis (Accra Mall and Makola Market	192 young adults (18-25 years)	High	Media (online resources) serve as a source of nutrition information
[19]	Sekyere—South	380 nursing mothers	Moderate	Sources of information on exclusive breastfeeding were health facilities (97.1%) and media (1.8%)

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	District of Ghana			
[20]	Tamale and Cape Coast	492 adults	Moderate	Television (55.1%), Radio (49.1%) and Health worker (34.1%) were sources of information
[21]	Kumasi	34 Women aged 18 years and above	Moderate	The most common sources of health information was television, radio, friends, and family
[22]	Kumasi-Ejisu-Juaben Municipality	28 Pregnant adolescents	High	Traditional sources such as families and friends were sources of information
[23]	Nkoranza, Kintampo and Accra	51 lay adults	Moderate	The sources of information mentioned were medical professionals and medically ill individuals
[24]	Kintampo Municipality	508 pregnant women	Moderate	Radio and place of worship were sources of information
[25]	Kumasi	adults aged 18 years and above	Moderate	Television and radio were sources of information
[26]	Tamale	women in reproductive age (15-49 years)	High	Sources of information were health workers (42.8%), radio/TV (31.8%) and family members/friends (25.4%)

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[27]	Kumasi	775 mother child pair aged 12-59	High	Television (74.7%) and radio (73.1%) served as major source of information for NID
[28]	Obuasi Municipality	200 Barbers	Moderate	Radio was the main source of health information for HBV and HCV among barbers
[29]	Ghana	11788 household survey	Moderate	The most effective form of receiving a malaria-related message was from a health worker and the dedicated radio (81.4%) program “HeHaHo”
[30]	Kumasi	264 women aged 18-64 years	Moderate	Schools and television were the most preferred methods of educating the public
[31]	Five regions	Women with children under 5 years	Moderate	TV, Radio, community event and social media were sources of information
[32]	Ghana	General population	High	The ownership of radio was 74%, mobile phone 57%, television 43% and refrigerator (26%) among the households. Ownership was higher in the Urban households
[33]	Ghana	General population	High	The ownership of radios was 69%, color televisions (62%), and mobile telephones (85%). Possession of color televisions, mobile phones, and refrigerators increased while possession of radios has decreased slightly

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[34]	Ghana	General population	High	Four out of every five households (80.3%) in the country own a mobile phone, 57.2% own a television set. Ownership of radio was higher in rural than urban areas
[35]	Ghana	General population	High	About 7.2 percent of the population aged 12 years or older own at least one type of computer device. Also, 74.3% of the population use mobile phones however, only 63.8% own these devices.
[36]	Ghana	General population	Moderate	The most used social media platforms are WhatsApp, Facebook, YouTube, Instagram, Facebook messenger, Twitter and Snapchat. Younger persons and those with higher education levels are the most frequent users of social media
[37]	La-Dadekotopon Municipal Assembly	120 students (aged 17-22 years)	Moderate	Mobile phone was the main device used to access social media. Facebook is the favourite social media platform
[38]	Ghana	General population	Moderate	About 25% and 21% of adults reported use of internet and smart phone ownership among adults in Ghana. Men were more likely to own smartphone compared to women
[39]	Ghana	60 campaign materials on Facebook and Twitter	High	On Facebook, materials posted with paid advertisements had significantly higher exposure and engagement compared with the control arm. aid advertisements are an effective mechanism to increase exposure and engagement of campaign posts on Facebook

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[40]	Ghana	60 campaign materials Technical experts Mothers		In designing a social media campaign on breastfeeding, input from a variety of sources with unique perspectives on the content, culture, dissemination platforms, including end users should be considered

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