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An Experimental Study to Determine Nutrition Profile Warning Message Effectiveness in Food Advertisements

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ABSTRACT

In our country, with the regulations implemented by the Ministry of Health, RTÜK and the Ministry of Commerce, bans on some food goods have been placed in television advertisements and the inclusion of flowband messages in food advertisements has become a legal requirement. The purpose of this research is to measure the effectiveness of flowband messages with nutritional profile content, which is mandatory in food advertisements. The main assumption of the research is that the effectiveness of the nutrient profile warning message, which is legally mandated and delivered through flowband messages, depends on the level of being seen and perceived by consumers. The effectiveness of flowband messages effectiveness was analyzed using eye tracking method, one of the neuroimaging techniques. As a result of the experimental study, it was determined that the level of focusing on the flowband message, which progresses for exactly 12 seconds in a 16-second commercial film, is 3.7 seconds. In general, it was determined that the flow band message was viewed by very few participants, and the viewers could not perceive the healthy nutrition message as catchy and accurate.

Keywords: Food Advertisements, Food Profile Model, Flow Band Messages, Eye Tracking Method, Neuroimaging, Subtitle Message.

JEL Classification Codes: M31, M37

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INTRODUCTION

The main purpose of advertisements is to inform current and potential customers about a good or service. Increasing the brand loyalty of the advertisements, strengthening the brand image, increasing the awareness of the product and brand, influencing the purchasing decisions of the consumers, and reminding the products can be listed among the important purposes of the advertisements (Dijksterhuis vd., 2005). Although advertisements have various purposes such as reminders and prompting to purchase, it is debated whether they have a direct effect on consumers' purchasing decisions. Abernethy, in her study conducted in 1991, states that watching product advertisements does not directly lead consumers to purchase behavior. Although it cannot be guaranteed that advertising messages will lead directly to purchasing behavior, there are studies showing that they direct consumers to a brand and product and increase consumption intention. It is thought that food advertisements increase the consumption level of individuals, especially children, and therefore, the audience should be directed to healthy foods with various regulations (Abernethy, 1991).

In our country, there are various practices to protect children and adults against food advertisements on television. In addition to the regulatory and supervisory institutions of the state, television advertisements are inspected by self-regulation, public inspection, and co-audit, and restrictions are imposed on these advertisements by various laws. However, despite these inspections, advertisements for unhealthy foods in some publications encourage the use of these products and make inspections difficult. The Ministry of Health, for the first time in 2018, determined the missing points in the regulations of the regulatory and supervisory institutions and prepared a list called "Nutrient Profile Model Usage Guide for Ads for Foods and Beverages for Children whose Over-Consumption is Not Recommended", which includes issues related to public health in commercial advertisements. In this list, foods consist of three categories as "Red, Orange, and Green Category". The types of food in these categories are clearly stated in the

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guide and various regulations are included for foods that are harmful to health. One of these regulations is that food advertisements in the red category cannot be made together with children's programs and it is necessary to include ticker tape warnings that encourage the consumer to eat regularly and healthily while broadcasting these food advertisements in other broadcast types (news, TV series, education, sports, etc.). ; Ministry of Health, 2022).

The aim of this study is to measure the effectiveness of flow band messages with nutritional profile content, which is mandatory in food advertisements. In the study, the effectiveness of mite bands in advertisements with nutritional profile content, which is mandatory in food advertisements, will be measured by the eye tracking method, one of the neuroimaging techniques. The study, it is also aimed to determine the effect level of the written warnings on the flow band encouraging healthy eating on the lifestyle of the consumers.

CONCEPTUAL FRAMEWORK

The effects of television advertisements on the consumer are a subject that is frequently discussed in the literature. It is possible to say that the effect of advertisements on consumer behavior has increased due to the widespread use of mass media and technological advances. Due to the increase in people's use of mass media, it became necessary to make regulations regarding advertisements and to transfer these regulations from government control to sectoral organizations. However, recently, the importance of healthy nutrition and the tendency to obesity in young individuals have brought government regulations on food advertisements to the agenda again. It is seen that these regulations are aimed at protecting the young generation all over the world but for different product groups from country to country. In this context, it can be said that advertisements for food, medicine, tobacco, and alcoholic beverage products, which are broadcast on television and target consumers under the age of 18, are limited in various ways in order to protect public health and consumers (Mahy, 2014a, p. 16). European Union regulations primarily target "unhealthy food" advertisements (Mahy, 2014b, p. 34).

In Turkey, the regulators on advertisements; are the Radio and Television Supreme Council, the Advertising Board of the Ministry of Commerce, the Advertising Self-Control Board, and the Ministry of Health. The duties and powers of these institutions are different. The most up-to-date and important of these is the "Inclusion of foods and beverages containing foods and substances that are not recommended for excessive consumption in general nutrition diets" in the seventh paragraph of article 9 titled "Commercial Communication in Broadcasting Services" of the Law No. 6112 on the Establishment and Broadcasting Services of Radio and Television. Commercial communication cannot be included with or in children's programs." It is the regulation dated 27.03.2018 that regulates how the provision will be applied. According to this regulation; In the determination of foods, the list prepared by the Ministry of Health was taken as a basis and this list was published on the RTÜK website.

In television advertisements, it has become obligatory to comply with the "Nutrition Profile Model Usage Guidelines for Advertisements Regarding Foods and Beverages for which Excessive Consumption is Not Recommended for Children" prepared by the Ministry of Health. Foods that are not allowed to be advertised (chocolate and candies, waffles, energy bars, sweet sauces and desserts, cakes, cake mix chips, crispy cookies, energy drinks, all non-alcoholic sugar or sweetener drinks, edible ice) In the "Red" category, compliance with the specified criteria Foods that will be allowed to be advertised (nuts, crackers, breakfast cereals, oil, etc.) Regulations and prohibitions apply to advertisements for food products in the "Red category". Advertisements of food products in the red category cannot be broadcast together with children's programs and on television channels aimed at children. Food advertisements in the red category are allowed to be given together with broadcasts other than children's programs, but there is a requirement that the written messages prepared by the Ministry of Health in these product advertisements should be in the form of a flow tape that can be easily read by the audience (RTÜK, 2022; Ministry of Health, 2022). As a result of these practices, it is seen that there is a significant decrease in the number of children's programs broadcast in Turkey, and there is no change in advertising preferences. Stream band messages prepared by the Ministry of Health and frequently used in food advertisements; Examples of expressions such as "Reduce excessive sugar, fat, and salt consumption for your health", "Consume 4-5 servings of vegetables and fruits a day for your health", "Consume milk and dairy products every day for your health" can be given as examples.

Literature Review on the Effectiveness of Nutrient Profile Warning Messages

There are very few studies in the literature in this field since the regulations on food products have been implemented in Turkey in recent years. According to the "Report on Monitoring Food Marketing to Children in Turkey" published by the World Health Organization

Regional Office for Europe in 2018, the most common product category in television advertisements in Turkey is food with 32.1%. The majority of television advertisements are for foods high in fat, salt and sugar. Of these advertisements on TV, 21.2% are healthy products according to the World Health Organization nutrition profile model. The majority of food advertisements aired on TV during the time periods when children watch, target children with high fat, salt and sugar content, and 78.8% of these advertised foods do not meet the criteria of the World Health Organization nutrition profile model (Bosi, Ergüder, Breda, & Jewel, 2018). This report is a descriptive study examining the suitability of TV commercials in Turkey according to the WHO nutrition profile model.

Şahin and Durlu-Özkaya (2018) examined the extent to which food safety is emphasized in food advertisements broadcast on television and found that safety emphasis ranked fourth. In their study, they stated that brand ranked first in advertisement emphasis and flavor, innovation, food safety, price/campaign and nutrients were emphasized respectively. This study is a qualitative study in which advertisements on seven TV channels were analyzed on a time-based basis (Şahin & Durlu-Özkaya, 2018).

In the study conducted by Yardım, Ilgaz, Aydın and Kaya in 2020, food and beverage advertisements for children in some international children's television channels broadcasting nationally were analyzed according to the Ministry of Health nutritional profile guide. In the study, the development of obesity in infants, children and adolescents all over the world and in our country was included and food advertisements on TV channels were evaluated. According to the study, both the frequency and duration of food and beverage advertisements containing high energy, sugar, salt and saturated fat, which are not suitable for excessive consumption by children, were found to be high. This study is a descriptive study investigating the suitability of TV commercials according to the Food Profile Guide prepared by the Ministry of Health in accordance with the RTUK regulation (Yardım etc, 2020).

In Yılmaz's (2020) study, he discusses the regulations of RTÜK, the Ministry of Health and the Ministry of Commerce in this field in our country by comparing them with the examples of the world, and states that the nutrient profile model is not effective in our country, it is not sufficiently understood by consumers and advertisers, and it has only been put into practice by making it mandatory to use flowing tape messages. Yılmaz's (2020) study is a study that examines the food profile model and its applications on TV with a descriptive approach (Yılmaz, 2020).

Çetinkaya and Hof (2021), in their study to determine the capacity of flow bands in food advertisements to influence consumers, concluded that flow bands were not noticed by consumers watching the advertisements and in this context, flow bands are not effective in terms of preventing obesity and encouraging healthy eating by not going beyond legal obligation. This study is a study in which the level of awareness of the warnings of the warning tapes is examined based on qualitative methods (Çetinkaya & Hof, 2021). This study also examined food profile studies conducted around the world on foods with high fat, salt and sugar content that are not recommended for excessive consumption.

In the study conducted by Jenkin, Wilson and Hermanson in 2008, in which the UK Nutrient Profile Model was evaluated in terms of unhealthy TV food advertisements, it was determined that 483 of the 1893 advertisements analyzed during 60 hours on weekday afternoons were for food products. According to the UK Food Profile, 66% of these advertised food products are high fat, salt and sugar products, while only 28% are not included in this group. A descriptive approach was used in this study (Jenkin, Wilson, & Hermanson, 2008), which provides recommendations for the reorganization of TV food advertisements with high fat, salt and sugar content in accordance with the nutrient profile for all consumer groups.

Scarborough et al. (2013) analyzed a representative data set of 336 different products and brands in 11,763 advertisements in 2008. The representative dataset consists of data from company websites, food packaging and food ingredient tables. The representative dataset was applied to eight nutrient profile models and it was found that the percentage of ads allowed by different nutrient profile models ranged from 2.1% to 52.6%. It was concluded that there was little agreement between the food profile models (Scarborough et al., 2013).

National and international studies on the compatibility of Nutrient Profile Models with TV advertisements have investigated food safety through qualitative and descriptive methods. This particular study aims to determine the extent to which the fluffy tape messages - which are mandatory in British food advertisements - impact consumers' lifestyles. Eye-tracking analysis, a form of neuroimaging technique, was employed in this study

to gauge the impact of viewing level of flow bands on the effectiveness of flow band warning messages. The objective of this study is to assess the effectiveness of advertising messages on promoting healthy nutrition through duct tape by utilizing an experimental approach. The study aims to provide recommendations to regulatory bodies, advertisers and policy makers based on the findings of the experiment. The research offers a distinct contribution to examining the compatibility between nutrient profile models and TV commercials, as well as the effectiveness of warning messages via experimental means.

METHODOLOGY

The nutrient profile model is a science that classifies and ranks foods according to their nutritional value to protect public health. This model helps to distinguish healthy foods from unhealthy foods. In our country, within the scope of the "Law No. 6112 on Radio and Television Establishment and Broadcasting Services", which entered into force after being published in the Official Gazette in February 2011, the broadcasting of foods that do not comply with the nutrient profile model in commercial communication tools has been restricted. The restriction includes the content of foods as well as the requirement to provide warning messages for the consumption of healthy products in visual communication tools. However, it is not known whether this new practice convinces consumers about healthy nutrition or whether consumers see healthy nutrition warning messages in visual communication tools within the scope of the nutrient profile model, and even if they do, the level of impact of the messages is unknown.

In this context, the aim of the study is to measure the effectiveness of the mandatory food advertisements that contain a nutrient profile. The basic assumption of the study is that the effectiveness of the legally mandated nutrient profile warning message presented through flowing tape messages depends on the level of being seen and perceived by consumers. The effectiveness of the flowband message was measured using eye tracking, one of the neuroimaging techniques that measures the eye movements of consumers. The eye tracking technique analyzes where a person looks in response to visual stimuli by tracking pupil movements. In a standard eye tracking study, data are obtained showing where, when (milliseconds) and for how long the participants look at each element of the visual stimulus (Özdoğan, 2008). Warning messages in visual communication media are analyzed on the basis of time-based visual and numerical data on viewing, average viewing, and focusing times related to the eye tracking technique. The main mass of the study consists of individuals over the age of 18. The eye tracking method is basically recording the light reflected from the cornea of the eye. In experimental studies such as the eye-tracking method, the reliability of the research is measured by the power analysis method. In order to have 90% power in static images in eye tracking analysis, it is necessary to reach at least 21 participants (Şenduran, 2019, p.6). In the usability tests conducted for the eye-tracking method, it is stated that 8 participants per participant group is sufficient (Goldberg & Wichansky, 2003, p.512). Therefore, the sample size of the study was determined as 40 participants. Twenty of the participants were female and 20 were male. The participants were chosen from the student body, academic, and administrative staff of the Faculty of Economics and Administrative Sciences at Hitit University. Prior to participation, all participants received information about the study without disclosing its content. During eye-tracking experiments, the quality of data can be affected by various factors such as dirty or damaged glasses, thick-framed glasses, advanced visual impairment, or dyslexia and other similar disorders, as well as heavy eyelashes or mascara (Sharafi et al., 2020). To ensure the validity of the experiment, these factors were considered before initiating it. Once the necessary criteria were met, the experiment commenced. At this point, the participants viewed the advertisement for "Knorr Ginger Turmeric Tomato Soup with Turmeric" on the Gazepoint Analysis screen while their eye movements were recorded.

The reason for the preference of instant soup advertisement in the study is that according to the food profile model, foods that are easily prepared for consumption are in the red category. Advertisements of food products in the red category cannot be broadcast together with children's programs and on television channels for children. They are allowed to be broadcast with broadcasts other than children's programs. However, these product advertisements must include written messages prepared by the Ministry of Health in the form of flowing tape that can be easily read by viewers. The running tape remains on the screen for 12 seconds in a 16-second commercial. The nutrient profilemessage on the conveyor belt is "For your health, consume at least 5 servings of vegetables and fruits a day (total 400 grams a day)". The participants were then asked to answer a questionnaire

form regarding the experiment. Approval for the experimental research was obtained from the "Hitit University Non-Interventional Research Ethics Committee" (decision no: 2022-183) on 02/08/2022.

The survey comprises three sections. The initial segment contains five multiple choice questions to determine participant gender, age, income, education, and occupation status. The second segment utilises the Attitude Scale Towards Healthy Eating (SBITIÖ), developed by Demir and Cicioğlu in 2019, to evaluate the eating habits of the participants The Attitude Scale Towards Healthy Eating (SBITIÖ), showed a high reliability, with a score of 0.90 for the Knowledge about Nutrition (KN) factor, 0.84 for the Feeling Towards Nutrition (FEN) factor, 0.75 for the Favourable Nutrition (FN) factor, and 0.83 for the Poor Nutrition (PN) factor (Demir & Cicioğlu, 2019). In the third section, there are multiple-choice questions about the level of exposure to the nutrient profile warning message of the consumers participating in the experiment. In the analysis of the survey questions, percentage and frequency techniques from descriptive statistical methods were used. The following section presents the findings and analysis of the study.

DATA ANALYSIS AND FINDINGS

Descriptive Statistics on Demographic Characteristics of Participants

The percentage and frequency distributions of descriptive statistics regarding the demographic characteristics of the 40 participants are presented in

When the data in Table 1 are examined, it can be said that 60% of the participants in the study are single, approximately 68% of them are in the age group of 25 years and above, and 90% of them have at least a bachelor's degree. In the following section, descriptive statistics data on the participants' lodging habits are presented.

Descriptive Statistics on Participants' Nutritional Habits

Table 2 shows the healthy nutrition and unhealthy nutrition habits of the participants according to their demographic characteristics. In addition to the demographic information of the participants, their attitudes towards healthy nutrition.

Table 1. Results on Demographic Characteristics of Participants

Demographic Variable		N	%
Gender	Female	20	50
	Man	20	50
	Total	**40**	**100.0**
Marital Status	Married	**16**	40,0
	Single	**24**	60,0
	Total	**40**	**100.0**
Age	18-24	15	37,5
	25-34	13	32,5
	35-44	10	25,0
	45-54	2	5,0
	Total	**40**	**100.0**
Education	High school	**4**	**10,0**
	Licence	**19**	**47,5**
	Graduate	**17**	**42,5**
	Total	**40**	**100.0**

Table 2. Nutritional Habits of Participants According to Demographic Characteristics

Demographic Variable		Healthy Nutrition	Unhealthy Nutrition
Gender	Female	16	4
	Man	17	3
	Total	**33**	**7**
Marital Status	Married	11	5
	Single	22	2
	Total	**33**	**7**
Age	18-24	13	2
	25-34	9	4
	35-44	9	1
	45-54	2	0
	Total	**33**	**7**
Education	High school	4	0
	Licence	15	4
	Graduate	14	3
	Total	**33**	**7**

Table 2 shows that 33 participants had healthy nutrition habits and 7 participants had unhealthy nutrition habits. According to gender, most of the participants with healthy nutrition habits were male participants, while according to age, most of the participants were between the ages of 18-24. Single participants have more Healthy nutrition habits than married participants. In addition, according to educational status, it is seen that participants with undergraduate education have more Healthy nutrition habits. The following section presents the results of the experimental study analysis.

Participants' Eye Tracking Results for the Flow Band Message

Results of Imaging the Flow Band Message According to Participants' Demographic Characteristics

Table 3 shows the number of times the participants viewed the streaming message according to the eye-tracking analysis. Table 3 also shows the participants' answers to the question "Have you seen the flow band message?" in the questionnaire. The eye-tracking and survey data regarding the participants' viewing of the streaming message were compared according to their demographic characteristics

When Table 3 is analyzed, eye tracking and survey results overlap according to the gender of the participants. It is seen that female participants view the flow band message more than male participants. According to the age groups, it is seen that the participants between the ages of 25-34 view the flow band message the most, while the group that does not view the flow band message is mostly the participants between the ages of 18-24. According to the education level, it is seen that the participants with undergraduate education level view the flow band message the most. Table 4 shows the average viewing and focusing times of the participants who viewed the flow band message.

When Table 4 is analyzed, it is seen that the average viewing time of male participants is higher than that of female participants, but female participants focus on the flow band message more. It is seen that the average viewing and focusing time of married participants is higher than single participants. According to age groups, the participants who viewed and focused on the flow band message for the longest time were in the 25-34 age range, while the participants who viewed it the least were in the 18-24 age range. According to the educational level, it can be said that the average viewing time of the participants with undergraduate education level is higher, while the participants with postgraduate education level focus more on the flow band message. Considering the average viewing times and average focusing times of the participants, it can be said that the participants viewed the flow band message, but not all participants who viewed it focused on the message.

Table 3. Results of Participants' Viewing the Flow Band Message According to Demographic Characteristics

		Viewing Flow Band Message (Eye-Tracking)		Viewing Flow Band Message (Survey)	
Demographic Variable		Viewer	Non-viewer	Viewer	Non-viewer
Gender	Female	9	11	9	11
	Man	11	9	10	10
	Total	**20**	**20**	**19**	**21**
Marital Status	Married	9	7	10	6
	Single	11	13	9	15
	Total	**20**	**20**	**19**	**21**
Age	18-24	5	10	5	10
	25-34	8	5	7	6
	35-44	6	4	5	5
	45-54	1	1	2	0
	Total	**20**	**20**	**19**	**21**
Education	High school	**2**	**2**	1	3
	Licence	**9**	**10**	9	10
	Graduate	**9**	**8**	9	8
	Total	**20**	**20**	**19**	**21**

Table 4. Average Viewing and Focusing Times of Participants Viewing the Flow Band

		Flow Band	
Demographic Variable		Average Viewing Time (sec)	Average Fixation Time (sec)
Gender	Female	0,76	4,5
	Man	0,83	3,8
Marital Status	**Total**	1,01	5,1
	Married	0,63	3,2
Age	Single	0,54	3
	Total	1,06	5,5
	18-24	0,72	3
	25-34	0,51	4,5
Education	35-44	0,71	2,49
	45-54	0,85	3,7
	Total	0,73	4,63

Table 5 shows the results of the participants' viewing of the flow band message according to their eating habits.

When Table 5 is analyzed, it is seen that 20 participants viewed the flow band message and 20 participants did not view it. When the survey data were analyzed, 19 participants stated that they viewed the flow band message, while 21 participants stated that they did not view the flow band message. According to the results of the eye-tracking analysis, 18 of the 33 participants with

Table 5. Imaging Results Related to Flow Band According to Participants' Nutritional Habits

	Viewing Flow Band Message (Eye-Tracking)		Viewing Flow Band Message (Survey)	
Nutritional Habits	Viewer	Non-viewer	Viewer	Non-viewer
Healthy nutrition	18	15	16	17
Unhealthy nutrition	2	5	3	4
Total	20	20	19	21

Table 6. Average viewing and focusing times of participants according to their dietary habits

	Flow Band	
Nutritional Habits	Average Viewing Time	Average Fixation Time
Healthy nutrition	0,63	3,70
Unhealthy nutrition	1,55	6,66

healthy nutrition habits viewed the tear tape message, while 15 participants did not. Among the 7 participants with unhealthy nutrition habits, only 2 of them viewed the flow band message, while 5 of them did not. According to the answers given by the participants to the survey question regarding the participants' viewing of the tear tape message; 16 of the participants with healthy nutrition habits and 3 of the participants with unhealthy nutrition habits stated that they viewed the tear tape message. When the eye-tracking results and survey data are compared, it is possible to say that some participants saw but did not notice the flow band message. Table 6 shows the average viewing and focusing time of the participants according to their nutritional habits.

When analysing Table 6, it can be seen that the average viewing time of the participants with healthy nutrition habits was 0.63 s, while the average viewing time of the participants with unhealthy nutrition habits was 1.55 s. When analysing the average focusing times, it can be seen that the participants with healthy nutrition habits focused on the Flow Band message for 3.70 s, while the participants with unhealthy nutrition habits focused on the Flow Band message for 6.66 s. 70 s, while the participants with unhealthy nutrition habits focused on the flow band message for 6.66 s. Considering the average looking time and the average focusing time, it can be said that the participants with unhealthy nutrition habits focused more on the flow band message.

Survey Results of the Participants Regarding the Flow Band Message

In addition to the eye-tracking method, the participants in the study were also measured using the questionnaire method. At the same time, a question about the message content was asked in order to better measure the attention paid to the underline message in the tape. Table 7 shows the participants' responses to the questionnaire regarding the underline message in the ad.

Table 7 shows the participants' responses to the questionnaire regarding the flow band message in the advertisement. While 19 of the 40 participants (47.5%) stated that they had seen the subtitle message, 21 participants (52.5%) stated that they had not seen the flow band message. It can be seen that only 11 of the participants (27.5%) stated that the content of the flow band message was about "daily fruit and vegetable consumption". Therefore, it can be said that 8 of the 19 participants who reported seeing the flow band message only saw the content of the message and did not perceive the message. An analysis of Table 7 shows that 10% of the participants were prompted to consume fruit and vegetables by the flow band message in the advertisement, while 90% were not influenced by it. Considering that the purpose of the flow band message is to guide and encourage consumers to eat healthy within the framework of the nutrient profile, it can be said that the flow band message was not noticed by the viewers and was not effective in influencing healthy eating behaviour.

Table 7. Survey Results of the Participants Regarding Flow Band

Demografik Değişken		N	%
Did you see the subtitle message?	Yes	19	47,5
	No	21	52,5
	Total	**40**	**100.0**
What is subtitle message content?	Daily fruit and vegetable consumption	11	27,5
	Daily salt consumption	3	7,5
	Reading packaged product labels	4	10
	I do not know the subtitle message content	22	55
	Total	**40**	**100**
Did the subtitle message encourage you to eat fruit and vegetables daily?	Yes	4	10
	No	36	90
	Total	**40**	**100.0**

CONCLUSIONS

The nutrient profile model, which is an important step in separating healthy foods from unhealthy foods, is the classification of foods according to their nutritional values in order to protect public health. Especially with the increase in obesity, restrictions have been imposed on the broadcasting of advertisements of foods with low nutritional value in communication tools. The restriction includes the content of foods as well as the obligation to give warning messages for healthy product consumption in visual communication tools. However, it is not known whether this very new practice convinces consumers about healthy nutrition or whether consumers see healthy nutrition warning messages in visual communication tools within the scope of the nutrient profile model, and even if they do, the level of impact of the messages is unknown. From this point of view, the aim of the study is to measure the advertising effectiveness of flowing band messages with nutrient profile content, which are compulsorily applied in food advertisements. The basic assumption of the study is that the effectiveness of the legally mandatory nutrient profile warning message presented through flow band messages depends on the level of being seen and perceived by consumers. According to the results of the study;

- Eye-tracking and survey results coincide according to the gender of the participants. It is seen that female participants view the flow band message more than male participants. According to the age groups of the participants, it can be said that the participants between the ages of 25-34 view the flow band message the most, while the group that does not view it is mostly the participants between the ages of 18-24. Easily prepared foods such as instant soup are more preferred by the young generation, especially by students. However, it has been observed that the flow band message does not attract the attention of the participants aged 18-24. Similar to this result, in a study conducted on the alpha generation with eye tracking method, it was concluded that the participants spent an average of 0.5 seconds (7% of the total viewing time) on written messages (Thomsen and Fulton, 2007).

- According to the results of the eye tracking analysis, 18 of the 33 participants with healthy eating habits viewed the running tape message, while 15 participants did not. Participants with healthy eating habits focused on this message, which emphasised daily fruit and vegetable consumption, for an average of 3.7 seconds. This message, which specifically emphasised healthy eating, was seen but not perceived.

- According to the survey results, 19 out of 40 participants (47.5%) stated that they saw the flowing tape message, while 21 participants (52.5%) stated that they did not see the flowing tape message. According to the eye-tracking results, 20 participants saw the flow band message, while 20 participants did not see it. In this respect, the survey results and eye-tracking results overlap. When the participants were asked about the content of the subtitle message, only 11 of them (27.5%) stated that the content of the flow band message was

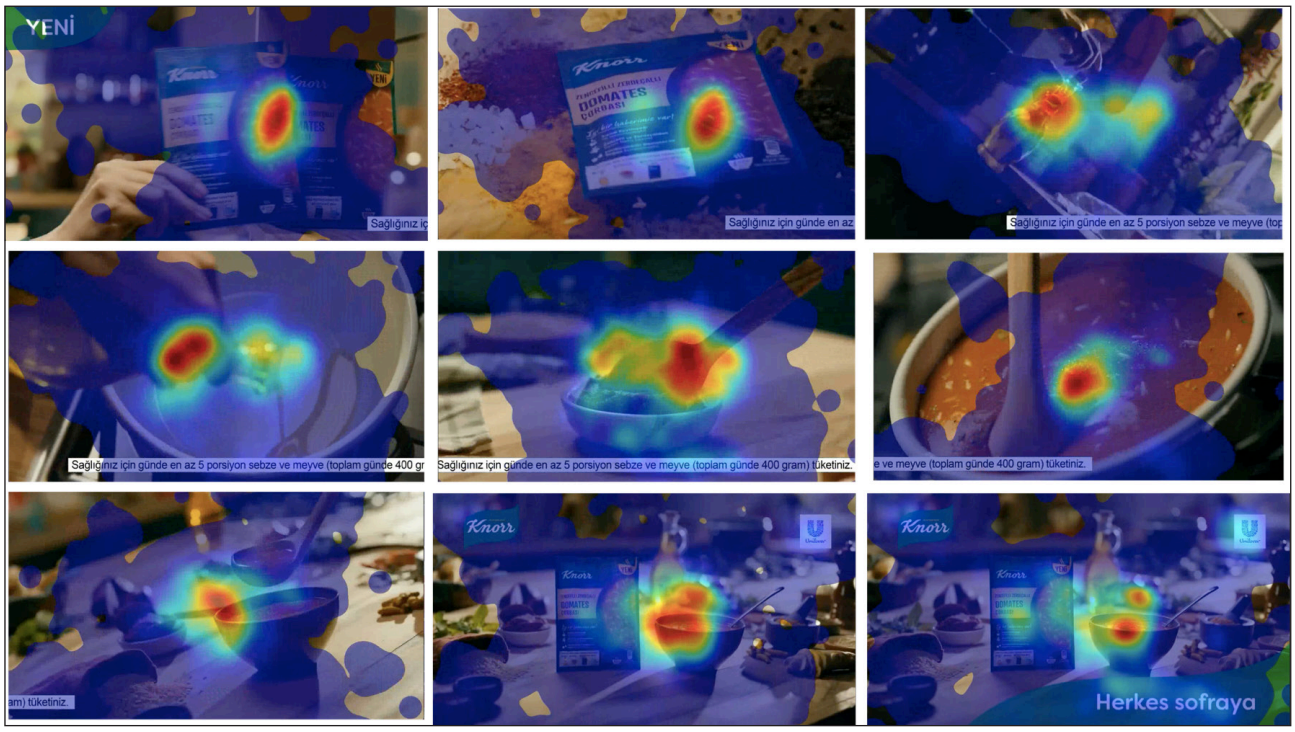

Figure 1. Heat Map of Knorr Advertisement

about "daily fruit and vegetable consumption". In this respect, the results of the research coincide with the study conducted by Çetinkaya and Hof (2021). The message is seen, but the message is not perceptible and memorable enough. Similar studies attribute the fact that the messages are not memorable to the subtitle speed. In the study conducted by Szarkowska and Moron (2018) with the eye-tracking method, it was observed that slow subtitles had more focus than fast subtitles. In addition, it was stated that the longer the subtitle duration, the higher the number of re-views to the subtitle area (Szarkowska and Moron, 2018).

In the experimental study conducted within the scope of the study, it would be more effective to evaluate the heat map related to eye-tracking analysis in order to see how much all participants focused on the advertisement message related to the flow band message and to determine which areas are the most effective in the advertisement. Accordingly, the heat maps related to the advertisement are shown in Figure 1.

When Figure 1 is examined, it is seen that the level of focus of the participants on the flow band message, which continues for 12 seconds in the 16-second commercial film, is very low. The middle point where the soup takes place throughout the advert is the most focused area. Especially the fact that the advert progresses as a story and the food attracts more attention than the brand shows that the flowing band messages will not achieve the desired result. Similar studies conducted with eye tracking technique show that the middle part attracts more attention in videos (Kim et al., 2019; Kim, 2022). In this respect, it is thought that it would be more effective to place the nutrient profile messages at the end of the advertisement and in the middle of the screen, as in public service announcements, instead of placing them at the bottom, which is the most inconspicuous part of the screen.

REFERENCES

Abernethy, A. M. (1991). Television exposure: Programs vs. advertising. *Current Issues and Research in Advertising, 13(1-2), 61-77.*

Bosi, T. B., Ergüder, T., Breda, J., ve Jewell, J. (2018). Türkiye'de Çocuklara Yönelik Gıda Pazarlamasının İzlenmesi Raporu, 2018 (No. WHO/EURO: 2018-2966-42724-59597). Dünya Sağlık Örgütü. Avrupa Bölge Ofisi.

Çetinkaya, E., ve Hof, S. D. V. H. (2021) Gıda Reklamlarına Görünmez Sınırlama: Akar Bant Uyarıları Üzerine Nitel Bir Araştırma. Türkiye İletişim Araştırmaları Dergisi, (38), 1-1.

Demir, G. T. ve Cicioğlu, H. İ. (2019). Sağlıklı beslenmeye ilişkin tutum ölçeği (SBİTÖ): Geçerlik ve güvenirlik çalışması. Gaziantep Üniversitesi Spor Bilimleri Dergisi, 4(2), 256-274

Dijksterhuis, A., Smith, P. K., van Baaren, R. B., & Wigboldus, D. H. J. (2005). The unconscious consumer: Effects of environment on consumer behavior. Journal of Consumer Psychology, 15, 193–202.

Goldberg, J. H. ve Wichansky, A. M. (2003). Eye tracking in usability evaluation: A practitioner's guide. In the Mind's Eye (pp. 493-516). North-Holland.

Jenkin, G., Wilson, N. ve Hermanson, N. (2008). Identifying "unhealthy" food advertising on television: a case study applying the UK Nutrient Profile Model. Public Health Nutrition, 12(5), 614-623.

Kim, J. (2022). Differences in Visual Attention of Seniors When Compared to Juniors According to the Location of Subtitles in a Video Manual. Archives of Design Research, 35(1), 75-91.

Kim, S.-Y., Jung, J.-B., Park, J.-H., & Nam, K.-C. (2019). A Study on the Influence Exerted on Subtitle Locations in Videos by the Deterioration of Working Memory Ability due to Aging. Korean Society for Emotion and Sensibility. Korean Society for Emotion and Sensibility. https://doi.org/10.14695/kjsos.2019.22.4.31

Mahy, A. (2014a). Setting the scene. A. Mahy (Dü.), *Advertising food in Europe: A comparative law analysis içinde (ss. 9-29). Berlin: Lexxion.*

Mahy, A. (2014b). Structure of the comparative analysis: Shedding some light on the questions raised. A. Mahy (Dü.), Advertising food in Europe: A comparative law analysis içinde (ss. 31-44). Berlin: Lexxion.

Özdoğan, F. B. (2008). A Conceptual Study On Eye Trackıng And Its Applıcatıons In Marketıng. Gazi Üniversitesi Ticaret ve Turizm Eğitim Fakültesi Dergisi, (2), 134-147.

*RTÜK (2020) "*Aşırı Tüketimi Tavsiye Edilmeyen Gıdaların Reklamlarında Kullanılacak Akar Bant Mesajları https://arsivdosya.rtuk.gov.tr/assets/Icerik/Download/guncel-akar-bant-mesajlari-2020.pdf?download=true (accessed 10 March 2022).

Health Ministry (2018)."Çocuklara Yönelik Aşırı Tüketimi Tavsiye Edilmeyen Gıdalar ile İlgili Reklamlar için Besin Profili Modeli Kullanım Rehberi" https://hsgm.saglik.gov.tr/depo/Yayinlarimiz/Rehberler/Besin_Profili_Modeli_Kullanim_Rehberi_1.6.2018.pdf (accessed 10 April 2022).

Scarborough, P., Payne, C., Agu, C. G., Kaur, A., Mizdrak, A., Rayner, M. ve Boyland, E. (2013). How important is the choice of the nutrient profile model used to regulate broadcast advertising of foods to children? A comparison using a targeted data set. *European journal of clinical nutrition, 67(8), 815-820.*

Sharafi, Z., Sharif, B., Guéhéneuc, Y. G., Begel, A., Bednarik, R., ve Crosby, M. (2020). A practical guide on conducting eye tracking studies in software engineering. Empirical Software Engineering, 25(5), 3128-3174.

Szarkowska A, Gerber-Moro´n O (2018) Viewers can keep up with fast subtitles: Evidence from eye movements. PLoS ONE 13(6): e0199331. https://doi.org/10.1371/journal.pone.0199331

Şahin, E. ve Durlu-Özkaya, F. (2018). Televizyonda Yayınlanan Gıda Reklamlarında Gıda Güvenliğine Yapılan Vurgunun Tespit Edilmesi. *Turizm Akademik Dergisi, 5(1), 265-275.*

Şenduran, F. (2019). Göz Takip Sisteminin (Eye Tracker) Spor Biliminde Kullanılması: Yeni Araştırmacılar İçin Kılavuz, Beden Eğitimi ve Spor Bilimleri Dergisi, 17(4), 1-13.

Thomsen, S. R., and Fulton, K. (2007). Adolescents' attention to responsibility messages in magazine alcohol advertisements: an eye-tracking approach. J. Adolesc. Health 41, 27–34. doi: 10.1016/j.jadohealth.2007.02.014

Yardım, N., Ilgaz, S., Aydın, F.B. ve Kaya, M. (2020). Ulusal yayın yapan bazı uluslararası çocuk televizyon kanallarında çocuklara yönelik gıda ve içecek reklamlarının Sağlık Bakanlığı besin proili rehberine göre değerlendirilmesi. Turk Kardiyol Dern Ars, 48(3), 278-288 doi: 10.5543/tkda.2019.54524

Yılmaz, Y. (2020). Televizyonda aşırı tüketimi tavsiye edilmeyen gıda reklamları için besin profili modelinin değerlendirilmesi, *Uluslararası Halkla İlişkiler ve Reklam Çalışmaları Dergisi, 3(2), 106-130.*