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## **Food Advertising and Consumption by Students in Huánuco (Peru)**

**Publicidad de alimentos y el consumo de los mismos por estudiantes en Huánuco (Perú)**

### **Abstract**

The significant shortcomings detected in the nutrition of students in the district of Huánuco (Peru), together with the television advertising observed for products of dubious nutritional value, led us to design and conduct a research project intended to analyse the relationship between the two: The influence of television commercials on the consumption of food products advertised in 2010, which is summarised in this article. In the study we carried out a correlative study of a sample of 120 pupils at different educational establishments. They answered questionnaires, were interviewed and underwent physical examination. We also analysed the food commercials broadcast by television channels and the nutritional value of the products. Chi-square inferential analysis was used. The research showed that the pupils' health has been adversely affected, with a serious incidence of tooth decay, a problem attributed to the consumption of certain foodstuffs. The study detected a positive relationship, which was highly significant statistically, between attachment to television advertisements and the consumption by the pupils of advertised foods which are rich in sodium, calcium, sugar and calories. Also demonstrated was the interdependence between exposure to television advertising and the consumption of foods with a high fat content, which should be monitored and controlled by government officials.

### **Resumen**

Las importantes carencias nutritivas apreciadas en estudiantes del distrito de Huánuco (Perú), junto con la publicidad televisiva de productos de dudosa calidad nutricional observada, nos llevó a plantear y desarrollar una investigación con el objeto de analizar la relación entre ambos fenómenos titulada: Influencia de los anuncios televisivos en el consumo de alimentos publicitados durante el 2010, cuyo resumen se presenta en este artículo. En la investigación planteamos un estudio correlacional con una muestra de 120 escolares de diversas instituciones educativas, a quienes se aplicaron satisfactoriamente encuestas, entrevistas y guía de evaluación física; también se analizó la publicidad emitida por los canales de televisión sobre alimentos y su contenido nutricional. El análisis inferencial aplicado fue Ji cuadrado ( $\chi^2$ ). Con esta investigación se ha demostrado que el estado de salud de los escolares está afectado, siendo muy agudo respecto a la caries dental, problema que se atribuye al consumo de ciertos alimentos. Se constata que existe relación positiva, con alta significancia estadística, entre la adherencia a los anuncios televisivos y el consumo de alimentos publicitados de alto contenido en sodio, calcio, azúcar y de calorías por los escolares estudiados; así mismo, se prueba la interdependencia entre la exposición a los anuncios televisivos y el consumo de alimentos con productos de alto contenido en grasa que merecen ser vigilados y controlados por los responsables.

### **Keywords / Palabras clave**

Nutritional habits, pupils, school, advertised products, food consumption, advertising, health, dependence. Hábitos alimenticios, estudiantes, escuelas, productos publicitados, consumo de alimentos, anuncios, salud, dependencia.

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## 1. Introduction

Children have become an attractive segment for manufacturers and advertisers, as they have more disposable income than previous generations and influence the buying decisions of their families. Companies have discovered that by developing brand loyalty at an early age they can obtain substantial profits, a situation which has led to an international debate on the harmful effects that advertising can have on children. This media study attempts to analyse the existence of a relationship between television advertising and the consumption of the food products advertised, together with the repercussions on health of such consumption. Television socialises and teaches and is present in most homes. Children are quick to pick up what is shown on television, making it a powerful factor in their environment, which influences behaviour, attitudes and values. When considering the cognitive field, the youngest children are more vulnerable to advertising and it is easier to persuade them to buy a particular food item. The studies by Mardomingo (1984: 24) concluded that publicity messages, especially those on television, were clearly the influential factor in children's eating habits. According to Morón (1995) television, publicity and consumption are different sides of the same coin, as television advertising favours familiarity with new food items and their acceptance. Today we can see in the population as a whole a new way of eating. It has little to do with people's gastronomic traditions and has developed via the consumption of items like fast food and «junk food», promoted worldwide through publicity and marketing strategies. Certain television programmes tacitly or implicitly promote concepts which are a risk to health and models which are contrary to a proper quality of life. The analysis of advertisements reveals practices and values which are not healthy. For Robinson (1993), publicity for food tends to emphasise food rich in calories and poor in nutritional value and can lead to erroneous beliefs. Contreras (1995: 78) supports this analysis, indicating the existence of a food culture in which powerful, complex social and cultural factors condition eating. From an early age children learn the eating habits of their elders, notice what food is served at parties and progressively develop their own food culture. There is a kind of furtive marketing, in which brands become part of popular culture and consumers are encouraged to spread the message. Television advertising becomes a powerful element which can easily position a product in a child's mind. As children make buying decisions indirectly through their parents or directly with their pocket money, their role as indirect customers should not be underestimated. Sometimes pressure by children determines decisions by adults to purchase products advertised on television. This phenomenon has been analysed for some time, showing the influence of food advertising and the negative eating habits of children who display nutritional disorders (Olivares, Yáñez & Díaz, 2003: 30).

From the cultural viewpoint Sauri (2003: 54) has shown that cultural patterns determine behaviour patterns through communication processes which directly influence concepts of food and health. Broadening the analysis, the author points out that the messages transmitted in television advertisements occupy an important place in the construction of cultural identity and play a part in the development of behavioural concepts and models that contribute to the collective memory of the population, displacing values and customs which have no place in the new lifestyles transmitted by these messages. Elsewhere (2003: 238), at the same time, she points out that in the current urban context, television constitutes one of the most important institutions through which culture is constructed.

In Chile, Olivares, Yáñez and Díaz (2003) carried out research into food advertising and eating habits in schoolchildren, administering a survey to a sample of 274 children in public schools. The results confirmed the hypotheses, showing the influence of publicity on consumption.

The US Institute of Medicine (2005) demonstrated, via empirical studies, that publicity aimed at children encourages bad eating habits. The FAO and the World Health Organization (WHO) have declared that publicity has a direct effect on children's purchasing preferences. These in turn influence their parents, which leads to bad eating habits that can be harmful to health. It is recognised that publicity has been playing a negative role in eating habits, contributing to an increase in chronic problems among schoolchildren.

In Ecuador, González, Quizhpe, Armijos and Álvarez (2006) studied the influence of television on the nutrition and academic performance of the pupils at the «Abelardo Tamariz Crespo» centre.

The sample consisted of 288 children aged 8 to 13. The results of the study show that 21.1% of pupils were overweight or obese.

The Eroski Consumer Foundation (2007) reports the results of research carried out in the United States, in which the influence of food publicity was studied, evaluating the preferences of a group of 63 children in California aged three to five. They were offered the McDonald's brand hamburgers, chicken, nuggets and chips, as well as milk and carrots bought from a supermarket. The study concluded that previous publicity influenced the choice of food.

In Chile, Cáceres, Pastenes and Ibarra (2008: 10) analysed the nutritional content of food advertised for children, concluding that publicity plays a negative role as it is an important factor in the increase in obesity.

In Mexico, Moreno and Toro (2009) produced a study entitled «La televisión, mediadora entre consumismo y obesidad» (Television, mediating between consumerism and obesity). The sample consisted of 448 children of both sexes aged 6 to 13, from urban primary schools in San Luis de Potosí. They concluded that, rather than acting as a mediator, television encourages the consumption of products that lead to obesity.

A study sponsored by the Who (2010) concludes that publicity is closely related to childhood obesity, as it has a direct influence on children's purchasing preferences and they, in turn, influence their parents.

The interest of these topics can also be seen from the numerous references to them in specialised publications. «Comunicar» has published various studies dealing with issues similar to that covered by this article. They include the following:

Issue 31 contains two texts. The first is the result of research by Del Río & Del Río (2008: 65-108) and deals with the construction of reality by children as a result of their television diet. The second, by Digón (2008), is entitled: «Children's programming and sensationalist TV: entertain, misinform, miseducate». In issue 33, Sevillano, González and Rey (2009: 185-192) present the study «Television, attitudes and drugs in adolescents: research into their effects». In issue 36 researcher Quiroz (2010: 35-42), provided another contribution, entitled: «Television, seen, heard and read by Peruvian teenagers». This study is close to our own in time and space, having been carried out in Lima. We can see, then, that we are dealing with a topical subject of universal interest.

## **2. Material and methods**

### **2.1. The problem**

The research we have conducted, which this study is part of, is justified for the following reasons. Firstly the child population of Huánuco (Peru) continues to be exposed to television advertising that encourages the consumption of products of no nutritional value, leading to extensive nutritional disorders in schoolchildren, such as malnutrition, obesity or being overweight. The issue is also important as nutritional imbalance can lead to illness from an early age and helps to perpetuate the population's lack of development and a low quality of life. Moreover, in the current urban context, television is the medium that has the greatest impact on the population, especially on children and teenagers.

In response to these problems a project was drawn up with the aim of determining the influence on food consumption of television advertising aimed at schoolchildren in the Huánuco district in 2010, with a view to providing a scientific answer to the question: «What relationship is there between attachment to television advertising and the consumption of the food items advertised?». The results of the study will allow improvements to be made in the area of publicity and in consumption of the food items studied. Its findings have already been made available to local government officials and will benefit the population at risk.

### **2.2. Objectives**

To identify the social and demographic characteristics of the pupils in the study. To establish what publicity for food products was broadcast by television channels and aimed at schoolchildren in the Huánuco district, to examine their viewing habits, determine the eating habits of the children in the sample, identify health problems linked to their diet, and analyse the influence of television advertising on consumption by schoolchildren in the Huánuco district of the food products advertised in 2010.

### **2.2. Variables**

- Dependent variable: Consumption of food items advertised on television.
- Independent variable: Exposure to television advertisements.

Among the other possible variables whose effects it was desirable to monitor, in the interests of methodological coherence with the aims of the study, we find it useful to consider the role of mothers, grandmothers, aunts, teachers or other people with an influence on the diet of the sample studied. We believe it to be obvious and almost axiomatic that the diet in a home or school depends partly on decisions taken by adults responsible for the care and education of children and adolescents. These adults are primarily mothers and fathers and secondly teachers and those who prepare school menus. Any dietitian can explain that the key to attacking the problems of tooth decay and obesity (two of those quoted in the article) lies with mothers who are not sufficiently well informed or give in too easily to their children's requests or demands, exhibiting weakness from the point of view of the educator. Sometimes mothers act as mediators between television advertising and the desire of children and teenagers to eat what they see in advertisements. Mothers have two important tools at their disposal: they can educate children in healthy eating habits, rationing and selecting what they see on television, and can make decisions on the family diet. However, in this first study, we thought it more pertinent to analyse in depth the role of television, reserving for a future occasion the study of independent variables such as the role of mothers, teachers and others. This work could even include a comparative study with a view to developing a comprehensive educational programme, involving different social agents with responsibility for the nutrition of children and teenagers.

#### **2.4. Means of gathering information**

- Visiting schools or, if necessary, homes.
- Informed consent form from pupils' parents or tutors.
- Confidentiality and data protection agreement.
- Various questionnaires.

#### **2.5. Data Processing**

Revision, coding, classification, presentation and interpretation of results using descriptive and inferential analysis. The inductive-deductive method was used to draw conclusions and generalise results.

#### **2.6. Sample Selection**

The sample consisted of 120 subjects, divided equally between boys and girls. They were classified in three age groups, each accounting for 33.3% (40) of the total: 6 to 8 years, 9 to 11 years, and 12-14 years. A majority (65%) were from private schools (78 children). The following were excluded from the study: children without a television at home, children not attending school regularly, children who did not agree to take part in the study.

### **3. Results**

Among schoolchildren, watching television is the most popular recreational activity (46.7% name it as their favourite). 95% spent an average of 1-2 hours watching continuously while 93.3% watched for a total of 1-4 hours per day. 40% reported that they had television in the living room at home. However, 38.3% reported that they had television in more than two places at home, the bedroom being the place most frequently mentioned (50%). The favourite programmes of the youngest children (aged 6 to 8) are almost exclusively cartoons and the same preference is found in the 9 to 11 group. The oldest group prefer television series and news programmes. The following chart shows children's preferences concerning the content of publicity, according to age groups.

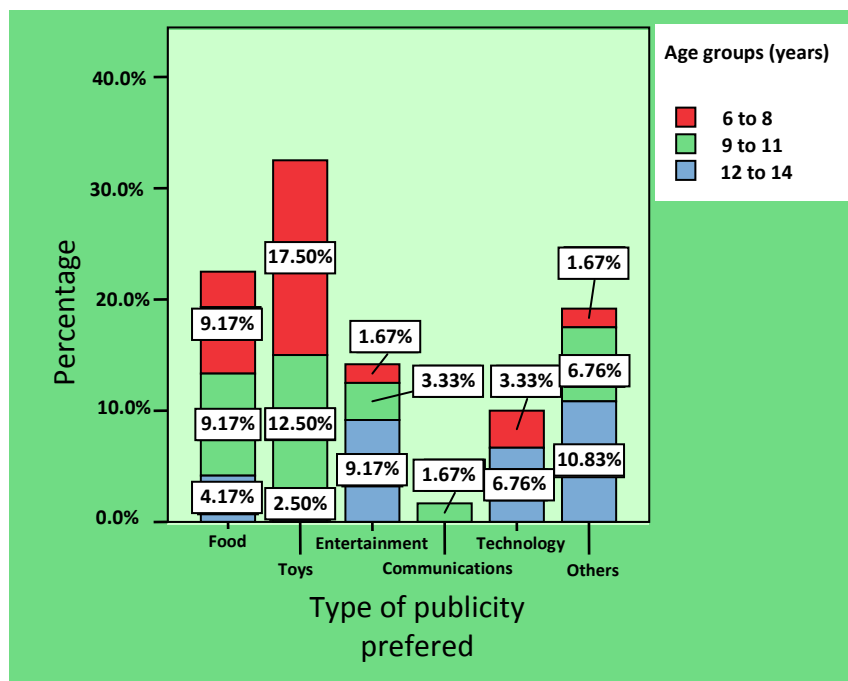


Figure 1. Preferences by age.

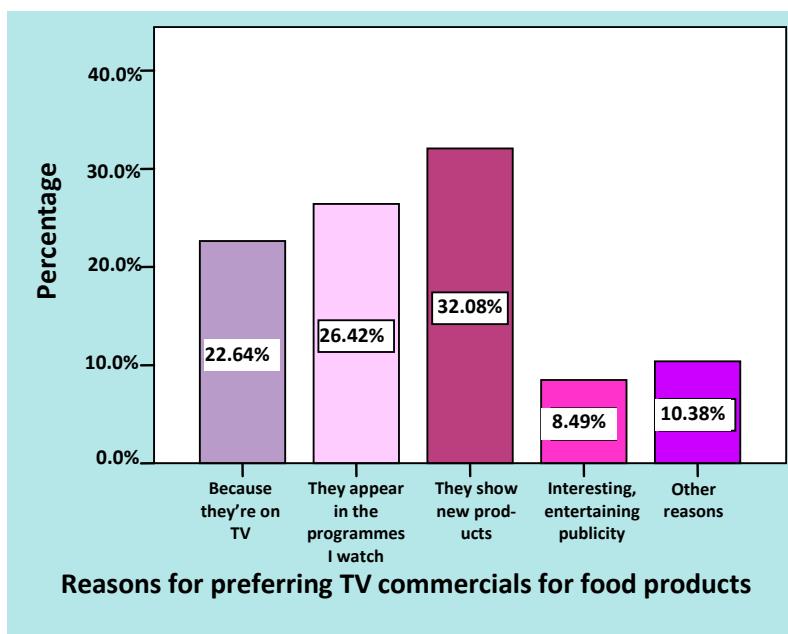
One of the questions in the study referred to the consumption of food items while children were watching television. Their replies show that 43.3% regularly ate while they were watching television. 18.3% ate fruit, while similar percentages ate popcorn, cereals and other junk food. According to the study, attachment to television advertising for food items on free-to-air channels was as follows:

	(n = 120)	
	No.	%
<b>Frequency of viewing</b>		
Always	24	20.0
Nearly always	82	68.3
Never	14	11.7
<b>Reason for viewing</b>		
Not applicable	14	11.7
Because it's on TV	24	20.0
It's in the programmes I see	28	23.3
They show new products	34	28.3
The adverts are interesting and entertaining	9	7.5
Other	11	9.2
<b>Interest in nutritional information</b>		
A great deal	26	21.7
Not much	40	33.3
None	54	45.0
<b>Perception of guarantees of quality</b>		
Always	4	3.3
Nearly always	48	40.0
Never	68	56.7
<b>Easy to purchase</b>		
Very easy	28	23.3
Easy	68	56.7
Difficult	2	1.7
Very difficult	22	18.3
<b>Total</b>	120	100.0

Table 1. Television-related factors that influence the consumption of the food items studied.

According to the data from the study, 68.3% report that they almost always see advertisements for food products. Surprisingly, 45% of the pupils do not pay attention to the nutritional information provided for these products. 40% assume that they have a guarantee of quality. Lastly, 56.7% say that the products advertised on television are easy to purchase.

Preliminary filtering was carried out to identify the products that pupils recognised in advertisements shown on different TV channels. Regarding the nutritional value of the products advertised, the main components of Lay's crisps («Papas Lays: del campo a tus manos») are sodium and carbohydrates. The advertisement for the product lasts 45 seconds and is shown on six free-to-air channels. It is shown most extensively on «América TV» and «Panamericana», 12 times a day on each, making a total of 540 seconds per day on each channel. It is also shown extensively on other channels, total time ranging from 360 to 450 seconds per day. Total: 2,700 seconds of publicity per day (45 minutes). Another product, «Yogurt Gloria» (yogurt), which has a high content in calcium, is advertised on three free-to-air channels, the advertisement lasting 30 seconds. It is shown most often on «TV Peru»: 10 times a day, making a total of 300 seconds' publicity per day on the channel. It is also shown extensively on other channels, for a total time of 240 seconds per day. Total: 3,240 seconds (54 minutes) of publicity per day, adding the time for all channels.



**Figure 2. Favourite food items.**

The diagram shows that there are three fundamental reasons for preferring a television advertisement for a food item: because it shows products which are new to the market, because the advertisements are broadcast during schoolchildren's favourite programmes, and because they appear on television. The greatest concentrations of pupils with high and medium average product attachment are found among consumers of the products advertised.

#### **4. Discussion**

The findings of this research provide useful information about the viewing habits common to nearly all the pupils in the study. Cumulative viewing time during the day amounts to 1-4 hours [93.3% of the sample (112 pupils)], habits which coincide with those recorded by Hernández and Parra (1997), who observed that adolescents and pre-adolescents spent an average of 4.1 hours per day watching television and 1.7 hours playing with video games or watching videos. Ávalos (2009) reported that schoolchildren in Colombia spend about 20 hours per week in front of the television. The studies by Callejo (2008) similarly show that the heavy consumers identified watch nearly four hours of television every day.

When we analyse the variables of attachment to television advertising and the consumption of food items with a high sodium content by the pupils studied, we see that there is a high, very significant correlation [ $\chi^2= 13.531$ ;  $GL=2$ ;  $p=0.001$ ]. These results coincide with those of other studies. Television advertising is dominated by products whose frequent consumption is described by

dieticians and nutritionists as inadvisable and unhealthy, food items which encourage eating habits among children and young people which are distant from, or indeed opposed to, the requirements of a balanced diet, leading to cardiovascular problems and increased blood pressure, among other problems.

The research of Olivares, Yáñez and Díaz (2003), carried out in the Mexico City Metropolitan Area, shows that children in levels 5 to 8 of primary education watch television more than 3-4 hours per day. It was also found that they habitually consumed advertised products such as «Papital Lays» (crisps), «Yogurt Gloria» (yoghurt), «Mantequilla Gloria» (butter), «Oreo» and «Sublime» (chocolate biscuits). This finding is supported by the analysis carried out by Sauri (2003), who reports that children develop their tastes and preferences for food items as a result of television advertising. Their favourite advertisements were those for packaged products such as crisps, chocolates, biscuits and sweet drinks. 69.7% of the children said they liked watching the advertisements. 88.7% remembered an advertisement for a food product. Based on these results, she concluded that advertising on television is a powerful weapon that can easily establish the presence of a product in a child's mind. The publicity liked most by pupils is for toys, followed by that for food items. The analysis of the content of advertisements carried out by the Australian Consumers' Association shows that advertisements for food products account for 44% of all television advertising between 3.00pm and 6.00pm, the time when most children are watching. Within the category of food items, the subcategory sweets, biscuits, chocolates and snacks has the strongest presence on television when children are watching.

The publicity identified by the study follows the AIDA model (attention, interest, desire, action), which lists the steps necessary to achieve the desired effect on the audience: capturing their attention, awakening their interest in the product, fostering their desire to have it, encouraging them to buy it (Rodríguez, 2007: 44). Studies by the Eroski Consumer Foundation (2010) have shown that the habitual consumption of foods rich in sugar, fats and salt create an imbalance in children's diets and bad eating habits are directly and proportionally related to future anomalies such as obesity and diabetes. As the report says: «Sweets: zero for nutrition». These items have no nutritional value and, because of their high sugar content, they often lead to tooth decay, obesity and bad eating habits.

The results of the study enable us to make the following recommendations:

- Regarding education policy: Programmes should be designed focusing on the development of good eating habits and customs linked to diet and life-style, especially in schools, which are directly in contact with pupils.
- Regarding health policy: A law should be drawn up regulating the food and nutrition of schoolchildren. The health and education sectors should work together on nutrition. Educational strategies should be developed to modify the behaviour of schoolchildren, advice on nutrition for the pupils most at risk and training for teachers and others who will act as role models should be provided. Staff in medical centres should pay special attention to training families and organising activities to promote health with parents, as both home and school should be places where good dietary habits are encouraged.
- On the commercial level: The search for a balance between healthy food and current lifestyles is a challenge for the producers of snacks; they must develop new formats that reflect nutritional value, changing their scale of values to favour the well-being of the end consumer, not only by offering attractive prices but also by searching for sources of nutrients to meet new needs and support the trend for the whole family to consume healthy food. Education in nutrition should be developed jointly with publicity for food products, and urgent attention paid to the promotion of products with no harmful effects.

## 5. Conclusions

- 46.7% of the sample studied prefer watching television to enjoying other leisure activities. 95% (114 subjects) spent an average of 1-2 hours watching continuously while 93.3% (112) watched for a total of 1-4 hours per day. 40.0% (48) reported that they had a television in the living room, while 38.3% (46) have one in more than two parts of the house, the bedroom being the favourite place for 50.0% (60) of respondents.
- The favourite channel for 38.3% (46) was channel 15 («América TV»). The most popular type of programme was cartoons, preferred by 58.3% (70), followed by television series, the favourite of 21.7% (26). The series «Al fondo hay sitio» and cartoons on cable TV are the favourites of 28.3% (34). The most popular publicity is for toys, followed by food, mentioned by 22.5% (27).
- A majority of pupils [80.0% (96)] are moderately attached to television advertising for food products on local channels. 85.8% (103) are consumers of the products advertised on television.

- The products advertised are as follows: «Papas Lays: del campo a tus manos» (crisps), «Yogurt Gloria», «Mantequilla Gloria» (butter), «El Sublime con galleta» and «El Oreo dúo» (biscuits) and the following nutritional data was recorded.

- The nutritional state of 85.8% (103) of the pupils in the study was good or normal, while 8.3% (10) were at risk of being underweight and 2.5% (3) at risk of obesity. 3.3% (4) were underweight.

- There is a positive, highly statistically significant relationship [ $\chi^2=9.97$ ; GL=2;  $p=0.007$ ] between the variables attachment to television advertising and consumption of the food products advertised. When we analyse the variables exposure to television advertising and consumption of food items with a high sodium content, we see that there is a high, very significant correlation [ $\chi^2=13.531$ ; GL=2;  $p=0.001$ ].

An analysis of the variables exposure to television advertising and consumption of food items with a high calcium content shows that there is a high, statistically significant correlation [ $\chi^2=11.059$ ; GL=2;  $p=0.004$ ]. Watching television advertisements determines the consumption of these products.

In the case of the variables exposure to television advertising and consumption of food items with a high sugar content, we find a moderate but statistically significant correlation [ $\chi^2=7.621$ ; GL=2;  $p=0.022$ ]. Television advertising influences the consumption of these products.

- It was also found that consumption of products with a high calorie content is influenced by television advertising, there being a high positive statistically significant relationship [ $\chi^2=11.229$ ; GL=2;  $p=0.004$ ].

- The variables exposure to television advertising and consumption of food items with a high fat content are independent [ $\chi^2=2.31$ ; GL=2;  $p=0.315$ ].

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