

PAPER

Role of television in childhood obesity prevention

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OBJECTIVE: To assess the role of television as tool for childhood obesity prevention.

METHOD: Review of the available literature about the relationship between television and childhood obesity, eating habits and body shape perception.

RESULTS: The reviewed studies showed the following: television watching replaces more vigorous activities; there is a positive correlation between time spent watching television and being overweight or obese on populations of different age; obesity prevalence has increased as well as the number of hours that TV networks dedicate to children; during the last 30y, the rate of children watching television for more than 4 h per day seems to have increased; children are exposed to a large number of important unhealthy stimulations in terms of food intake when watching television; over the last few years, the number of television food commercials targeting children have increased especially when it comes to junk food in all of its forms; the present use of food in movies, shows and cartoons may lead to a misconception of the notion of healthy nutrition and stimulate an excessive intake of poor nutritional food; and obese subjects shown in television programmes are in a much lower percentage than in real life and are depicted as being unattractive, unsuccessful and ridiculous or with other negative traits and this is likely to result in a worsening of the isolation in which obese subjects are often forced. The different European countries have different TV legislations.

CONCLUSION: The usual depiction of food and obesity in television has many documented negative consequences on food habits and patterns. The different national regulations on programs and advertising directed to children could have a role in the different prevalence of childhood obesity in different European countries. Television could be a convenient tool to spread correct information on good nutrition and obesity prevention.

International Journal of Obesity (2004) **28**, S104–S108. doi:10.1038/sj.ijo.0802802

Keywords: childhood; adolescence; television; advertising

Introduction

Over the last few decades, childhood obesity has registered a rapid increase all over the world.¹ It is very well known that obesity has its roots in both genetic and environmental factors. As for the genetic factors, it is extremely unlikely that the observed positive trend in childhood obesity prevalence could be traced to a genetic modification supposed to have occurred in such a short period of time. On the contrary, as far as the environmental factors are concerned, the high availability of food, the exaggeratedly sedentary behaviour, combined with the low exercise levels currently common in rich countries can be considered the main daily life factors that have led, and still lead, to the development of obesity.²

One of the most sedentary behaviours '*per se*' in childhood is television viewing. This behaviour could replace more

vigorous activities, and at the same time, could expose children to a large number of important unhealthy stimulations in terms of food intake.^{3–7} The role of television as the main mass medium favouring the development of obesity has been the subject of numerous studies that have led to different conclusions.^{4–8} Understanding the way through which television can favour obesity development is important in order to counteract its effect and use the same as a prevention tool.

First of all, it has been recognised that in the last few decades, obesity prevalence has increased as a function of the number of hours that TV networks devote to target children populations.^{3,5} TV shows and cartoon programmes addressed to a very young audience are now aired every day on both public/nation-wide and private/commercial channels.^{9–11} In more recent years, even pay channels exclusively devoted to children have extensively spread all over the world.^{9–11} Most of times the new way of approaching children with dedicated programmes is sponsored by companies producing toys and/or unhealthy

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food, including high-calorie, high-sugar, high-fat and high-salt products.¹²

Thus, if we want to evaluate the role of television in both developing and preventing childhood obesity, we need to assess the importance of and the relationship between time spent watching television childhood obesity and content of programmes addressed and/or watched by children and importance of advertising in food choice and consumption patterns.

Time spent watching television

Most of the studies focusing on this subject have been conducted in the USA on a national level and have shown a correlation between the time spent watching television and the nutritional status of the subjects involved.^{3–5}

Over the years, many researchers have demonstrated a positive correlation between time spent watching television and being overweight or obese on populations of different age. Most of these studies are cross-sectional,^{4,5} and therefore the relationship between television watching (cause) and obesity (effect) can only be suspected, and not asserted, as the cause–effect relationship could be reversed: obese subjects watch television for a longer time.

However, in a study conducted by Gortmaker *et al*,⁴ the odd risk of being overweight was 4.6 times greater for subjects who used to watch television for more than 5 h per day as compared with those watching for 0–1 h. In addition, Dietz and Gortmaker³ found a statistically significant association between the number of hours spent in front of television during childhood, at 6–11 y of age, and obesity 6 y later.

The most ‘long-lived’ of the longitudinal studies on this topic focused on an observation of children from preschool age through early adolescence and demonstrated that television watching is an independent predictive factor of an increased BMI,¹³ while a study limited to girls, conducted in North California for 2 y, failed to show any relationship between the time spent watching TV and the development of obesity.⁶ These different results could be ascribed not only to the different age classes of the subjects under study, but also, and perhaps most importantly, to the different lengths of the periods of observation, which was much longer in the Framingham Study. The effects of television watching on the development of obesity could be visible only after a long period of time (a period of more than 2 y) and could remain undetected after a few months or even years of observation.

An additional proof of the impact of the amount of time spent watching television on the development of obesity can be derived from some trials in which the reduction of the time spent watching television, as the only intervention tool, has caused a reduction of body weight of the studied subjects.^{6,14}

Secondly, comparing the data published by Dietz and Gortmaker in 1985 in NHES 1963–1970,³ and those

published by Crespo *et al*⁵ in NAHNES 1988–1994 in 2001, the rate of children watching television for more than 4 h per day seems to have increased at the same pace as the rate of overweight and obesity in children. On the other hand, some children start their experience with television even at the age of 1 y; hence, one can readily understand how slowly and, at the same time, strongly the relationship between the time spent watching television and childhood obesity develops.¹⁵ Finally, it has been demonstrated that heavy-viewer children are from families where parents also spend a lot of their time in front of television.¹⁶ On the basis of these studies, the first recommendation about television intended as tool to prevent obesity would be to reduce the time spent watching television by children and also by their families.

Content of the programmes targeted to and/or watched by children

In this part, the content of television programmes in terms of food messages will be taken into account, together with the body appearance of the characters of the different kinds of programmes, from cartoons to soap operas.

It has widely been demonstrated that food shown during programmes, both for children and adults, does not meet the criteria of healthy nutrition.⁸ In most cases, characters (humans and/or cartoons) eat snacks and not complete meals, and drink soft drinks and/or alcohol, instead of water.^{8,17}

In spite of the large number of food references in television programmes the body shape of the characters is usually thin. In addition, thin and tall almost always equates with a positive hero, while fat, in the best of options, equates with funny.¹⁸ In case of a female character, thin and tall will always mean being very attractive, having a lot of male friends and dating, while fat girls have fewer friends, less social interaction and, with a few rare exceptions, no boy friend.^{19–21}

As for many other topics and aspects, television programmes depict life as either white or black: no different tone of grey seems to exist in between. Therefore, obese subjects turn out to be unpopular and unsuccessful in television, and they are so much less than in reality; whereas, in spite of eating poor food all the time, thin subjects are leaders, usually successful in their lives and in good health.¹⁸ But how and how deeply can these characters influence children and adolescents’ attitudes and behaviours?

First of all, children do not watch only programmes dedicated to them, they are often also allowed to watch, without any adult supervisions and discussions, adult programmes, where these characters are more evident.^{18,22} Obese children watch television for longer time than normal-weight ones and thus are more exposed to its messages.^{3,23} This behaviour, commonly found in many countries, should represent a source of concern for parents,

paediatricians and governments. Children's tendency to imitate adults' behaviour, especially when this behaviour is considered to be positive and powerful, can start at a very early age.²⁴

The results of a long daily brainwashing can be observed in a study performed in Southern Italy a few years ago.²⁵ In this study it has been shown that children of 6–10y of age react differently to television characters whether they are obese or not. When asked 'Who is the television character you would like to be similar to?', obese children chose a statistically significant larger number of cartoon or imaginary characters, while normal weight children chose sport champions and cultural personalities. None of the chosen characters was obese.²⁵

The influence of programmes' contents on childhood obesity development thus relies on two different aspects:

(a) Television use of food: The present use of food in movies, shows and cartoons may lead to a misconception of the notion of healthy nutrition and stimulate an excessive intake of poor nutritional food. The potential of the movies or televised model of food use in terms of increasing industrial sales is confirmed by the habit of food companies to pay the movie or TV production to place their products in movies or programmes.²⁶

(b) Television body shape depiction: This is a topic in which the ambivalence of meanings and feelings remains the main problem. Television programmes are criticised because obese subjects are shown in a much lower percentage than in real life and this is likely to result in a worsening of the isolation in which obese subjects are often forced to live. A higher percentage of obese subjects, but also of other minorities, in television programmes could lead to a greater variety of people with different body shapes and characteristics, which television viewers could watch and appreciate in a more realistic picture of the world and life, thus contributing to eradicate the still too frequent prejudice linked to body shape in our society.^{19,27}

Generally, the few obese subjects shown are depicted as being unattractive, unsuccessful, and ridiculous or with other negative traits.¹⁸ They are seldom depicted as unhealthy in terms other than 'not body built', thus, in our opinion, the best way to have a right approach to showing obesity in television is to show obesity as a cause of health problems linked to overeating and poor exercise.²⁶

But which are the programmes where this approach could be useful? The most obvious answer would be health scientific programmes including medical documentaries. Obesity, however, is more prevalent in poorly educated social classes who do not watch these programmes.²² The few studies carried out in this field show that including health information in shows, soap operas' scripts and general entertainment programmes could be efficient in terms of raising the awareness of specific health topics. The audience have been shown to use newly acquired information for changing their life styles and gaining better health or for asking more details to their physicians.^{28–30}

But, of course, this approach requires money to recruit excellent writers, actors and so on in order to counteract the actions of the companies interested in selling their products. Finally, we cannot forget that favouring an excess of poor food intake and depicting being obese only as socially and emotionally undesirable could favour a second market: that of magic slimming products.

Importance of advertising in food choice and consumption patterns

Over the last few years, which have seen a steep increase in childhood obesity in line with increased number of hours spent by children watching television, the number of television commercials targeting children has increased as well.³¹ In the late 1970s, the estimated average of advertisements viewed by children in the USA was about 20 000 television advertisements per year; during the 1990s the estimated amount doubled.³¹ This shocking increase has a very good reason. Children and adolescents have by now acquired a remarkable 'purchase' power, which is based on the money made available by their parents and by their power to influence family decision-making when buying products. This influence has been calculated to amount to about 200 billion US \$ in 2004.³² Among all the types of commercials, food advertising is the most frequent, especially when it comes to junk food in all of its forms: high-fat, high-sugar, high-salt foods, sodas and sugared beverages, and, of course, advertising for fast food restaurants, and more recently, ready-to-eat frozen food, which is often nutritionally unbalanced.^{31,33,34}

The documented negative consequences of these commercials on food choice and nutritional status are many and may be summarized as follows:

- (1) The higher the number of commercials watched, the greater the number of purchase-influencing attempts directed at parents in the supermarket by children from 3 to 11y of age.³⁵
- (2) TV on during meals, worse eating pattern in the family. TV off during meals, higher intake of fruit, vegetables, etc. in children from 8 to 11y of age.³⁶
- (3) Adolescents frequently eating fast food use to watch more television than their peers.³⁷
- (4) Even a short (10–30s) exposure to food advertising can influence food preferences of children 2–6y of age. The effect doubles if the same advertising is shown twice during the same break in children 2–6y of age.³⁸ This last piece of evidence is of utmost importance because it shows the strong effect of advertising at the age in which eating habits and patterns get established.

The structure of commercials follows strict rules according to the age targeted and the best methodology for influencing food acceptance. The values shown are mostly those of family, friendship and love; the settings are often familiar to

children: school, open spaces and home. The advertised food is a significant factor and actor in this idealized and 'glossy' location, which is strictly associated with feelings such as happiness, friendship, fun, beauty and fitness. Often the food is shown as the best way and tool to bring about these feelings and/or to make positive situations happen (personal unpublished data).

Of course, the subtlest rules of seduction are used to introduce the advertised food adjusted to the target audience. If the target is the very young child, the most frequent slogan is a general but very understandable 'It is good!'. To reach the parents, who generally buy the product, the language is more professional and reassuring and thus a number of specific and special nutritional characteristics of the product are listed. Often the advertised food offers toys as an added value, thus increasing the number of children who request their parents for that specific food.^{39,40} In addition, often food advertising is performed by cartoons very well known by the children and this technique is very efficient in stimulating children to ask for that specific food.^{33,41,42}

As for the products addressed to adolescents and bought by them, usually the characteristic highlighted generally is that 'It is a light food, not rich in calories!', while on the emotional side, the high social approval coming essentially from peers is stressed (personal unpublished data).

Modifying the structure and the frequency of food advertising is no easy task because of the numerous economic interests in this field, even though it is an interesting path to be travelled.

The use of the same method, cutoff point and reference tables in Europe has allowed scientists to obtain quite a comprehensive overview of childhood obesity prevalence in the different European countries and a positive trend from North to South has been observed.⁴³ Environmental factors are differently spread among the children living in the different European countries and this results in different values of childhood obesity prevalence. Among these factors, the different national regulations on advertising, namely food advertising for children, are likely to play an important role in either favouring or hindering the development of obesity. It could not just be a chance that the countries with a stricter legislation on advertising for children in television such as Scandinavian countries and Belgium have a lower prevalence of childhood obesity in Europe, while countries where the legislation is still lacking or not complied with have a significantly higher prevalence of obesity in childhood such as Italy, Spain, Greece and so on.

Conclusion

We have many reasons to limit and reduce our children's television watching time in order to prevent an obesity epidemic. However, it must be stated also that governments should consider television programmes a perfect tool to

spread correct health information. It could be a good start just to restrict advertising addressed to children in all the European countries.

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