Impact of television food advertising on unhealthy food preferences and eating behaviour among children: A systematic review

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Abstract
Television is still the dominant avenue for advertising food items. The television food related advertisements in India promotes fast food, sugary cereals and other food and beverages which are more in calories, fat, sugar, sodium and less in nutrients. In recent years the food and beverage industry in India has viewed children as a major target market. As a result food companies are interested in children as consumers since they watch television for long hours. This article aims to focus on how TV food advertisements pay attention to children. The impact of television food advertisements on children towards food purchasing requests is highlighted. Children who are exposed to TV advertisements are lured into making unhealthy food choices and develop poor eating behaviour. Since young children lack the ability to critically assess advertising messages and to understand their convincing intention, this paper focuses to incorporate, a positive approach to reduce the TV food and beverage advertisements on children and to emphasis the role of parents to limit television food advertising henceforth to create healthy eating preferences among children.

Keywords: Television advertisements, Food requests, eating behaviour, Policies, healthy eating.

Introduction
The concern over increasing rates of unhealthy food preferences among children is influenced by television and food advertisements. The effects of television food advertisements have been the issue of extensive research over a decade. TV viewing is significantly associated with increased consumption of unhealthy foods, including fast food, (Chang H, Nayga Jr RM. 2009) [17] and there is sufficient evidence that TV advertising influences the food preferences, purchasing requests and eating behaviour of children under the age of 12 years. If schools and families unite to provide systematic life education and food guidelines to children and adolescents, the next generation can build and lead lives with healthful dietary habits (Soonnam Joo, Seyoung Ju, Hyeja Chang, 2015) [52]. This article seeks to examine, with voluminous literature how TV food advertisements have affected children’s unhealthy food preferences and eating behavior that has been effectively summarized in a number of recent reviews. The role of the parents, community participation and the policies involved to create a healthy environment for children in relation to TV food advertisements has also been reviewed.

Objectives
- To focus how TV food advertisements attract the attention of children
- To view the effects of television food advertisements on children towards food purchasing requests
- To study how TV advertisements promotes unhealthy food preferences and develop poor eating behaviour
- To highlight the role of parents, community participation and the policies to limit television food advertising to create healthy food preferences among children
Methods
This review is based upon extensive review of books, journals, articles, PubMed data base, as well as results from many researches on Television advertisements related to food products. Policy documents and commentaries were sourced through PubMed databases and the internet search engine Google Scholar.

Children Pay Attention to TV Food Advertisements
Television watching by children has been increasing at an exponential rate over the last few years in India and abroad and they are obviously engrossed by the television advertisements they watch. As a result children are exposed to a large number of food and beverage advertisements each day. Among racial minority groups this exposure is higher. In United States children watch TV for almost four and a half hours each day (Rideout VJ, Foehr UG, Roberts DF, 2010) [48]. Children are innocent and immature. When marketer advertises a product on television children believe the messages in the advertisements since advertisements are shown in such a way as to get the attention of children. Young children do not understand it to be marketing strategy and they are extremely vulnerable target audience and get easily carried away. Older children, although they may understand that advertising is planned to sell a product, may not be able to interpret these messages critically (Kunkel D, et al., 2004) [39]. Children learn much about their social world vicariously, through observation of the media (Bandura, 2002) [7].

Marketing Techniques
Marketing Techniques Marketers use a variety of techniques to attract audiences to increase product purchases. Traditional marketing techniques in television commercials include repetition, branded characters, catchy and interesting production features, celebrity endorsements, and premiums (free merchandise that accompanies a product) (Sandara L Calvert, 2008) [60].

Television Marketing Techniques
Repetition - Repetition involves simply repeating the same commercial message over and over. The idea is that familiarity with a product increases the likelihood of purchasing and using it S. (Auty.S and Lewis C, 2004) [6].

Branded characters - Successful marketing campaigns often use branded characters—that is, media characters that are associated with a company, and hence promote its brand name—that appeal to children and youth (Institute of Medicine, 2006) [33].

Attention-getting production features - Attention-getting production features are designed to attract children’s interest in commercial content. Such features, which are heavily concentrated in children’s television advertisements, include action and movement, rapid pacing, sound effects, and loud music (D. Greer and others, 1982) [23].

Animation - The use of animation in ads also may blur the line between advertising and programming. Mary Story (2007) [45] found that 28% of food advertisements aimed at children are animated and 48% are partially animated. Many studies proved that the children are more exposed to the characters shown there and the products endorsed by these cartoon characters which may imbibe bad food habits in children as most of the ADs projected are fast food and cold drink related and not about healthy diet.

Celebrity endorsements - Celebrity endorsements also help sell products. Children who like those celebrities are expected to purchase these products (Ibid) [25].

Premiums - They also use premiums, such as a small toy in a McDonald’s Happy Meal, to increase product purchases by children online and on television (S.L. Calvert, 1999) [12].

Product placement - Over Coke cans in an arcade-style basketball advergame called Live the Madness, their performance is enhanced: they can run faster, for example, or dunk the basketball. The implicit message is that Coke will make you a better athlete (Mack. A, 2004) [46].

Integrated marketing strategies Another new marketing trend is the use of integrated marketing strategies, particularly with branded characters driving interest across media platforms. 66 Companies charge advertisers a fee for licensing popular children’s characters for multimedia applications in TV, books, CDROMs, games, and movies to sell products (T. Tarpely, 2001) [53].

Video news releases Video news releases, in which companies circulate stories about their products, are a form of virtual advertising that is used on television by every single news organization. Video news releases, which are cheaper than traditional advertisements, are neither presented nor labeled as advertisements, thus potentially breaking down the more critical stance that older viewers take when viewing an advertisement that they understand is trying to sell them a product (L. Mazur, 1996) [43]. Sandra L Calvert, (2008) [50] addresses product marketing to children and shows that marketers have targeted children for decade. The reality is that food advertising to children is designed to increase or maintain the sales of a particular brand (Fredrick Annie 2006). [21]

The effects of television food advertisements on children towards food purchasing requests
Television food advertisements have more impact on children’s food request and food selection than the advice of their parents. For most children and teens, to see the face of an identity they respect, either real or fictional - endorsing a product is enough motivation for them to purchase it, or to influence their parents to purchase it for them (Cubito,) [20]. The preschool aged children’s requests were affected by the television advertisements because they mostly requested candy/chocolate, ice cream, cake, fruit juice and soft drinks-items that were advertised on television (Powell, et al., 2007) [47]. It was also observed that the foods which were requested by most of the children during shopping at the supermarket were foods that were high in fat and sugar which were found more in the advertisements (Aleathia Cezar, 2008 & Aktas Arnas Yasare 2006) [14].

A recent review on the effects of television food advertising on preschool and school-age children's food behavior concluded that children exposed to advertising will choose advertised food products at significantly higher rates than children who were not exposed. Findings from food purchase request studies have consistently shown that children's exposure to food television advertising increases the number of attempts children make to influence food purchases their parents buy. Purchase requests for specific brands or categories of food products also reflect product advertising frequencies (Coon KA et al, 2001) [18].
The results Aktaş Armas Y 2006 [1], revealed that 40.3% of the children asked their parents to purchase the goods that they saw on the television advertisements and that 8.9% of them argued with their parents and/or cried in order for their parents to buy that particular product. It was found that the children tended to request more sweetened products such as candy, ice-cream, biscuit, cake or soft drinks. It was concluded that more than half of the food presented in television advertisements were rich in fat and sugar. Children ask their parents to buy the goods they see on television advertisements both while watching television and while shopping. Television advertisements especially affect young children's unhealthy food consumption.

**Children Food Attitudes and Preferences**

Children are more likely to consume foods that portray in food advertisements as enjoyable with taste and appeal. While multiple factors influence eating behaviors and food choices of youth, one potent force is food advertising (Story M, et al., 2007) [24] The study by Helen G.Dixon et al., (2007) [29] "The Effects of Television Advertisements for Junk Food versus Nutritious Food on Children's Food Attitudes and Preferences," was designed to enhance the evidence base concerning the persuasive impact of TV food advertising on children’s food-related attitudes and beliefs. According to Dixon et al., the social cognitive theory predicts that children learn from behaviors symbolically modeled in mass media, as well as from role models in their immediate social environment. A study by Diabetes Foundation of India (DFI) found that TV commercials have such impact on schoolchildren that they consider eating fatty foods fashionable. At least 54% of children surveyed preferred buying foods shown in commercials and 59% said they would continue to buy such foods (Bhardwaj et al., 2008)[9].

**TV advertisements exaggerate unhealthy food preferences and develop poor eating behaviour**

Although children’s food choices are affected by many factors, TV food marketing is an important one. Companies relentlessly bombard children with messages to eat too much – TV food marketing is an important one. Companies often advertised to children (Harris JL, Graff SK, 2011) [26]. The study of Aktaş Armas Y (2006) [1] found that the time devoted to children's programs was approximately 121 min and the advertisements during this period were approximately 35 min. A total of 344 of the 775 television advertisements shown were related to food. It was also found that most of the food advertisements were about candy/chocolate, chips, milk and milk products such as cheese, yoghurt, and breakfast cereals.

Junk foods, such as pizzas, burgers and soft drinks, are heavily promoted during children's TV viewing time. This develops a craving for fatty, sugary and fast foods in kids, thereby affecting their health adversely (Debra M. Desrochers and Debra J. Hol, 2007) [21]. The study of Aktaş Armas Y (2006) [1] found that the time devoted to children's programs was approximately 121 min and the advertisements during this period were approximately 35 min. A total of 344 of the 775 television advertisements shown were related to food. It was also found that most of the food advertisements were about candy/chocolate, chips, milk and milk products such as cheese, yoghurt, and breakfast cereals.

**The Effects of TV Food Advertisements on Children’s Health**

Children who are bombarded with junk food TV adverts will almost double the amount of unhealthy snacks and sweets they eat, alarming research has revealed. Youngsters who are already overweight or obese are even more at risk and will increase their consumption by up to 134 per cent, the study shows. The findings come from research at Liverpool University which draws a clear link between the TV advertising of foods high in fat, sugar and salt and rising obesity (Sean Poulter, 2007) [51]. Harris. J.L et al (2009) [27] suggests that the prevalence of obesity is increasing in nearly every country to the point that over-nutrition rivals under-nutrition. The burgeoning obesity epidemic has resulted in efforts to tackle factors considered to promote an “obesogenic environment” which includes marketing of unhealthy foods to children (Huang L Mehta.K, Wongml, 2012) [31].

In 2014, Mekam Maheshwar et al., [44] states that “Junk food advertisements have profound effect on children’s eating habits since they are frequently displayed during prime time without legal or official regulation.” Scientific reviews have also shown that a significant portion of television promotional expose children to “non-core” food products which have low nutritional value and cause child obesity. Children are becoming more focus target market for many advertisers, and they are putting their extreme efforts to capture this valuable target market. Most of the advertisers are advertising those foods products which have above the standard level fats, more calories and salt such as confectionery, soft drinks, crisps and savory snacks, fast food (Ofcom, 2004) [54] and pre-sugared breakfast cereals are included in the daily lives of the children. This eating pattern is leading children towards heart disease, diabetes, hypertension and obesity in later stage of the life (Ofcom, 2004) [54].

Fast food ads targeting children heavily promotes unhealthy and mall nutritious food like instant food, junk food and sachet packed food. Diabetes, obesity, hypertension, cardiovascular diseases (CVDs), gall bladder ailments, cancer, psycho-social problems, breathlessness, sleep disorders, asthma, arthritis, weak bones and reproductive hormone abnormalities have now become a great concern (Casim & Langton, 1996) [13].

**Protect children against the unhealthy influence of television and food advertising**

Alethia Cezar (2008) [14] states that Food marketing is aimed at children at an early age and it is directly affecting their food choices, food preferences and eating habits. At this age, children are learning that through food advertisements certain food products and fast food restaurants equate fun and

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happiness which promote poor nutrition content products which can increase nutritional health related issues at an early age.

How do we protect children against the unhealthy influence of television and food advertising? Proposed solutions fall into three broad categories: 1) public service announcements and other media messages to communicate to children the importance of eating healthy foods; 2) parent-child communication and media literacy education to teach children to defend against unwanted advertising effects; and 3) reductions in children’s exposure to unhealthy messages on television, either through parental restrictions on the amount of television that children view or restrictions on the amount of advertising for unhealthy products presented on children's television (Jennifer L and et al., 2010). [35]

The role of parents to create healthy environment to their children in relation to advertisement

The role of parents and legal system plays crucial role in preventing the anti-health ads influencing the children’s eating habits. Due to the growing numbers of hours that children sit in front of the television, less physical activity and the epidemic of childhood obesity. Parents should restrict eating foods with poor nutrition content and also limit television viewing time, remove television sets from children’s bedrooms, monitor the shows children are watching and to watch television with the children (Aleathia Cezar, BSN, 2008) [4].

Parents play a major role in the aspect of a child’s exposure to television media. Adults have the ability to think critically about the purpose and meaning of messages and how those messages can and will influence the minds of children. Family discussions should take place about commercial advertisements and the goal of the companies so children understand what they are seeing. Lifestyle habits start from a young age in direct relation to the behavior and education level of parents. This fact will have an immense impact on the continual cycle that perpetuates from generation to generation. It is also the responsibility of the advertisers and food industries to provide healthy choices as opposed to only unhealthy ones. The chance of this happening however is slim and idealistic, perfect as it may seem. (Mekam Maheshwar, et al., 2014) [44].

Dr. T. N. Murty et al (2013) [46] in their research it is evident that Nearly 92 % of the parents surveyed feel that there is need for regulation as far as food related advertisements are concerned and about 66% said that, either the advertisements of unhealthy food products should be banned or the Ad Message should be regulated by including the warning against excess consumption. 12% parents accepted that all the food Ads targeting children should be totally banned and about 22% of them said that the use of children in food advertisements should be banned, as when children themselves advocate such products, it becomes difficult for the parents to convince their kids for not eating.

The policies to limit television food advertising to create healthy environment to the children

It is observed that young children are more susceptible to the persuading nature of advertisements. This is because of the reason that children in their earlier stages of television viewing do not differentiate between a commercial and a programme. It is distressing that children are spectators of advertisements primarily because young children are open to thousands of commercials in India (George, 2003) [34]. Formal product advertising restrictions should be established to change marketing practices directed at children. Restrictions can begin with large companies curbing their advertising of popular unhealthy snacks and promote healthy, nutritious snacks.

“Since television commercials of foods high in fat, sugar or salt greatly influence eating habits of the young and impressionable and make them vulnerable to non-communicable diseases, World Health Organization (WHO) has urged countries to reduce exposure of children to such marketing by implementing a set of international recommendations” (Vineeta & Pandey 2011) [40].

The most common control measures that provide protection to children across the ad world are self-regulatory measures, which basically are the control exercised by the advertising agencies against children exploitation (Boddewyn J, J. 1992) [45]. Mekam Maheshwar, et al., 2014 [44] also suggests, the majority of health-and-nutrition-related claims in food advertisements are nutrient content claims, rather than the more informative health claims. Food marketers appear to be reluctant to use health claims; this is could be due to television slot limitations or the required use of regulatory language. It may also be due to legal ramifications. That is, health claims need to be supported by significant scientific evidence. Otherwise, the advertiser may face charges for breaking regulations of Advertising Standards Council of India (ASCI). Establishing guidelines and/or public policies that maximize the private sectors’ interest and ability to incorporate useful health-and-nutrition-related claims in food marketing seems to be much needed. They advise that healthy foods are not advertised nearly as much as unhealthy foods, which continues to be a major public health concern. This seems to suggest a pressing need for marketing promotions that focus on healthier food options, particularly targeting vulnerable populations such as children.

Consumer protection refers to protection of children from harmful content that affects children’s innocence and naivety (Rocha et al., 2004) [49].

Over the past few years, numerous proposals have been made in many countries like France, Italy, Brazil, Ireland etc. to restrict the food advertising to children. Like other developed countries, India too has legal and widespread rules for children defence against advertisements. The legal regulatory systems of India along with other developed countries is as below


- Advertisements should not misinform children to trust that consumption of product advertised will result directly in personal changes in intelligence, physical ability or exceptional recognition. Such claims if made in advertisements should be supported with adequate scientific substantiation. All nutritional and health benefit claims in foods & beverage advertisements are mandatory to be validated scientifically.

- Unless a food product has been nutritionally designed as a meal replacement, it should not be portrayed as such.

- Messages in advertising to children will represent accurately the products, in a way that is in keeping with their ability to understand.

- Advertisements should not show over consumption of Foods & Beverages. It should reflect moderation in consumption and portion sizes appropriate to occasion or situation. Advertising of promotional offers on Food & Beverage products should also not show extreme consumption.

- Advertisements should not undermine the role of parental
care and guidance in ensuring proper food choices are made by Children.

- Visual presentation of foods and beverages in advertisement should not mislead the consumers of the material characteristics of the products advertised.

Statutory components in India

Thus it is pretty evident that statutory components are widespread and deliver protective measures children in India (Cassim & Bexiga, 2007) [14]. Each country has its own self-regulatory system and is over looked by the advertising and media industries and implemented through Code of Practices. This Code is mostly based on the International Code for Advertising Practices, 1997(ICC, 2007) and provides guidelines for the protection of children against the exposure of harmful material. Children’s advertisements should not deceive children to trust that individual usages of the products advertised will help them in unique gratitude and also their security should not be attacked in any way (Advertising Standard Council of India, 2005). In India after continued criticism of advertising to children, advertisers have formulated self-regulatory systems to ensure the delivery of true and accurate content to children. But still the regulatory approach towards advertising to children in India is not structured like developed countries. The self-regulatory monitoring body in India is the Advertising Standards Council of India which was set up in October 1985-by media owners, advertisers, advertising agencies and allied professionals like consumer researchers, film makers, processors etc and regulates the content of advertising in accordance to consumer interest(Akhter Ali and et al.,) [11]. All advertisements relating to infant food have been banned from November 1 with the government issuing a notification of the law on Thursday. Parliament had recently amended the law, called the Infants Milk Substitutes, Feeding Bottles and Infant Foods (Regulation of Production, Supply and Distribution) Act, 1992 (Times of India, 2003) [50]. India’s food safety regulator banned the brand from sale over tests that it said showed the noodles contained excessive levels of lead. The world’s biggest food company is challenging the 5 June order from the government’s food safety regulator. The company had already been pulling the product from sale when the Food Safety and Standards Authority of India (FSSAI) imposed the ban following similar moves by governments of some Indian states (www.theguardian.com, 2015) [61].

The Committee for Advertising Practice

The Committee for Advertising Practice is close to ratifying a plan that would see the introduction of advertising restrictions on all food and drink products in non-broadcast media - except for fruit and vegetables. Ofcom (2004) [49] has banned the advertising of junk food to children, determined by a nutrient-profiling model developed by the Food Standards Agency to identify products high in fat salt and sugar. Specifically, a ban on licensed characters - but not the likes of manufacturer’s own icons such as Tony the Tiger - and the use of celebrities who overly appeal to young children. (Mark Sweeney, 2007) [41]. On Tuesday, Walt Disney Co. announced it will ban all junk food advertising from its TV channels, websites and radio programs catering to children (Time Subscribe, 2012). [55]

Community Should Limit Advertisements of Less Healthy Foods and Beverages

Community involvement should actively participate in limiting the advertisements of less healthy foods and beverages. Therefore, limiting advertisements of less healthy foods might decrease the purchase and consumption of such products. Legislation to limit advertising of less healthy foods and beverages usually is introduced at the federal or state level. However, local governing bodies, such as district level school boards, might have the authority to limit advertisements of less healthy foods and beverages in areas within their jurisdiction. Although consumption of sugar-sweetened beverages occurs most often in the home, schools and child care centers also contribute to the problem either by serving sugar-sweetened beverages or by allowing children to purchase sugar-sweetened beverages from vending machines. Policies that restrict the availability of sugar-sweetened beverages and 100% fruit juice in schools and child care centers might discourage the consumption of high-caloric beverages among children (CDC, 2006) [13].

Conclusion

This article infers that children live and grow up in a highly sophisticated marketing environment that influences their preferences and behaviours. Globally, children are exposed to high volume of food advertising on television. Food marketers target children to influence brand awareness, brand preference, brand loyalty, and food purchases among children. Substantial scientific evidences substantiate a relation between unhealthy TV food advertisements and children's food choices, purchases, and consumption. Consequently there is a need for the government to tighten the regulations on TV food advertising to children. Food Products and its contents which are unsuitable for children should not be advertised or endorsed on TV directly. Parents are to be sensitive to the amount of food advertising exposure their children receive and its impact on their food preferences. They should educate their kids about eating unhealthy food as part of a balanced diet.

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Author Contributions

S. Vijayalakshmi and Mark Keith Faraday designed the study and prepared the manuscript. Dr. S. Vasantha edited the content of the article and Kanchana. T and Wilfred Lawrence performed the proof reading. All authors have read and approved the final version of this manuscript.

Conflicts of Interest

All authors declare no conflict of interest.

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