

Original Research Article

# Change in perception regarding food advertisements on Indian television following an oral health education intervention program in 7-14 year old Kashmiri children and their parents

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	International Archives of Integrated Medicine, Vol. 3, Issue 6, June, 2016.	
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	Available online at <a href="http://iaimjournal.com/">http://iaimjournal.com/</a>	
	ISSN: 2394-0026 (P)	ISSN: 2394-0034 (O)
	Received on: 26-05-2016	Accepted on: 08-06-2016
	Source of support: Nil	Conflict of interest: None declared.
<b>How to cite this article:</b> Sidiq M, Lone N, Yousuf A, Shah AF. Change in perception regarding food advertisements on Indian television following an oral health education intervention program in 7-14 year old Kashmiri children and their parents. IAIM, 2016; 3(6): 199-206.		

## Abstract

**Background:** Nowadays, electronic mass media such as television influence the behavioral patterns of their audiences, mainly children. The study aimed to investigate the extent of effectiveness of health education intervention among 7-14 year old children and their parents regarding the food advertising to children on Indian television

**Materials and methods:** A cross sectional study was conducted among 140 children between 7-14 years and their parents attending Department of Pedodontics, Government Dental College and Hospital, Srinagar. Data was collected by administering a pretested and a validated questionnaire among children and their parents. Oral health education intervention in the form of counselling by power point presentations was provided and pictorial self explanatory pamphlets were distributed among the participants. They were recalled after 3 weeks and the same questionnaire was administered again to evaluate the effect of oral health education intervention.

**Results:** After oral health education intervention regarding the Food Advertising to children and their parents on Indian television, there was a significant reduction ( $P < 0.05$ ) in the attitudes and practices which were detrimental to oral health.

**Conclusion:** Children are exposed to TV advertisements which affect children's food preferences resulting in consumption of unhealthy foods that are detrimental to the oral health. Oral Health education intervention to parents is necessary for selecting healthy foods.

## Key words

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Television advertising, Persuasive communication, Children, Oral health.

## Introduction

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Dental caries is amongst the most common oral diseases and a significant public health problem existing worldwide [1]. Dental Caries is a multi-factorial disease with behavioral and environmental factors as its main determinants. Of the many factors, sugar-rich diet is often associated with dental caries [2]. With changing lifestyle behaviors, television viewing has become a part of our day to day activity, focusing predominantly on children to promote and increase the consumption of foods with high sugar and acid content [3]. Overconsumption of these foods tend to increase the prevalence of dental caries and dental erosion [4].

Television is one such medium through which advertisements directly affect children's eating habits and their food consumption as a result of behavioral modification [5]. These advertisements of food products focus more on children since they lack the understanding of the persuasive intent of advertisements and tend to accept them as truthful and accurate [6]. A significant proportion of advertisements during children's television programs focus on food products, the majority of which adversely affect the oral health [7].

Television is recognized as an effective and influential medium for promoting the sale of food products as children tend to spend most of their free time watching television [8]. The parent's buying behaviors for their children for food products are often influenced by children's food purchase requests [9]. The food industry

spends more on advertising through mass media promoting foods which may have potentially detrimental effect on oral health of children such as confectionery, high-sugar foods and junk foods. Many food brands promote their products by marketing strategies like by giving complimentary gifts which attracts the child's attention, thus forcing his/her parents to buy it [10].

The aim of this research was to evaluate the influence of oral health education intervention among 7-14 year old children and their parents regarding food advertising to children on Indian television.

## Materials and methods

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A cross sectional study was conducted among parents of children between 7-14 years attending Department of Pedodontics, Government Dental College and Hospital, Srinagar from 1<sup>st</sup> February, 2016 to 29<sup>th</sup> February, 2016.

Systematic sampling was employed for selecting the subjects. Every 4<sup>th</sup> patient attending the Department was included in the study. Thus, a total of 146 subjects, fulfilling the inclusion criteria were selected which included the patients who were co-operative and gave the consent, having television/cable network at home, within the age group of 7 to 14 years, watching television for 2-4 hours a day and whose parents were educated with a minimum qualification of graduation. The children with special health care needs and those who were not willing to participate were excluded. Twenty two ended

questions were included in the questionnaire which included questions in English language regarding the knowledge, attitude and practices related to the influence of television advertisements on their food choices. (**Table - 1** and **Table - 2**)

Prior to being finalized, the questionnaire was pilot tested on 10 parents and the children in the Department of Pedodontics, Government Dental College, Srinagar to ascertain the appropriateness and applicability of the questionnaire. Minor changes were made in the questionnaire as per the feedback obtained from the pilot study. The findings of the pilot study were not included in the main study.

Data pertaining to this study was collected by distributing the questionnaire among children and their parents. After administering and collecting back the questionnaire, the children and their parents were counselled and provided with health education in the form of a power point presentation in the batches of 10 each regarding the benefits and detrimental effects of Food Advertising to Children on television. They were also provided with a self explanatory pictorial pamphlet for imparting health education regarding high sugar food products/ junk foods/ oral health products and the importance of maintaining good oral hygiene and periodic recalls to the dental clinics. Food advertisements were grouped as those related to cariogenic and non-cariogenic foods. The pamphlet also included guidelines and instructions which they were supposed to follow at home while watching such advertisements for three weeks including Sundays. All the subjects including their parents were recalled after three weeks and the same questionnaire was administered again. Out of the total 146 subjects, 140 subjects reported back after 3 weeks and 6 subjects were lost to follow up. Thus, a total of only 140 subjects were included at the end of the study.

Data were entered into an Excel Sheet database (MS Office Excel 2000). The Frequencies of all

the variables were determined. Data were analyzed using SPSS Statistical software 19.0. Chi square test was used for comparison of categorical data. The level of significance was set at ( $P < 0.05$ ).

## Results

A total of 140 subjects were included in the study out of which 81 subjects (57.85%) were females and the remaining 59 subjects (42.14%) were males. The results were as per **Table - 1** and **Table - 2**. After oral health education intervention, there was a significant reduction ( $P=0.001$ ) in the number of children who watched TV alone without the supervision of parents. A significant reduction in the number of children was also observed who forced their parents to buy the things which they watched on TV. The dietary preferences of the participants also changed significantly from cariogenic foods to the healthy items after the intervention. Overall, the parents showed better attitudes and practices related to the role of TV advertisements on health and oral health.

## Discussion

The present study was conducted to evaluate the influence of oral health education intervention among 7-14 year old children and their parents regarding food advertising to Children on Indian television. Although food companies and advertising agencies have used various mediums to target children, television is the most dominant medium [11].

The present study showed that more children watched TV alone without the supervision of their parents, while as after oral health education intervention the number significantly reduced. It has been observed that food companies use persuasive marketing techniques and strategies mostly in advertisements for unhealthy food products and during children's peak viewing times [10, 12]. Children are more persuaded for purchasing food products since they lack the understanding of the content and persuasive

intent of advertisements and they tend to accept those as truthful and accurate [6].

**Table - 1:** Knowledge of parents for each question before and after informative intervention.

Sr. No.	Questions	Before intervention		After intervention		P value *
		Yes n (%)	No n (%)	Yes n (%)	No n (%)	
1	Do you allow your child to watch TV alone?	104 (74.2%)	36 (25.7%)	50 (35.7%)	90 (64.3%)	<b>0.001</b>
2	Which kind of program does your child watch regularly? Cartoons Music Movies Serials News	50(35.7%) 22(15.7%) 30(21.4%) 34(24.2%) 04(2.8%)		60(42.8%) 20(14.2%) 36(25.7%) 10(7.14%) 14(10%)		0.062
3	Does your child like to watch the advertisements in between the programs?	122 (87.1%)	18 (12.8%)	128 (91.4%)	12 (8.5%)	0.068
4	Does your child get tempted and ask you to buy things that he/she watches on television?	131 (93.5%)	9 (6.4%)	95 (67.8%)	45 (32.1%)	<b>0.05</b>
5	Items you have bought when asked by your child after watching advertisements on TV? Chips Biscuits Chocolate Ice cream Flavoured juices Noodles Chewing gum Soft drinks Tooth paste Tooth brush Dental floss Mouth rinse	19(13.6%) 18(12.8%) 35(25%) 18(12.9%) 05(3.6%) 03(2.1%) 15(10.7%) 06(4.3%) 08(5.7%) 09(6.4%) 01(0.7%) 03(2.1%)		11(7.9%) 13(9.3%) 16(11.4%) 12(8.6%) 02(1.4%) 01(0.7%) 10(7.1%) 03(2.1%) 23(16.4%) 28(20%) 06(4.3%) 15(10.7%)		<b>0.001</b>
6	What tempted your child to buy the above items after watching the television advertisements? • Very attractive advertisement with music and color • The advertisement has your favorite model • You like to buy new things that you get to see in advertisements	61(43.6%) 58(41.4%) 21(15%)		55(39.3%) 62(44.3%) 23(16.4%)		0.064
P value < 0.05 (*Chi square test)						

**Table - 2:** Attitude and practices of parents regarding Food Advertising to Children (CFAC) on television before and after informative intervention.

Sr. No.	Questions	Before intervention		After intervention		P value *
		Yes n (%)	No n (%)	Yes n (%)	No n (%)	
1	Do you think food advertisements on television have an effect on your child's oral health?	62 (44.2%)	78 (55.7%)	121 (86.4%)	19 (13.5%)	<b>0.001</b>
2	Do you think parental supervision should be necessary for children watching TV?	69 (49.3%)	71 (50.7%)	111 (79.3%)	29 (20.7%)	<b>0.001</b>
3	Do you feel child lock for certain channels is necessary for children while watching TV?	41 (29.3%)	99 (70.7%)	62 (44.3%)	78 (55.7%)	<b>0.05</b>
4	Do you feel Food Advertising to Children on television increases the consumption of junk food in children?	74 (52.9%)	66 (47.1%)	96 (68.6%)	44 (31.4%)	<b>0.001</b>
5	Does the advertisements of oral health products increase the knowledge of your children towards following a better oral hygiene?	59 (42.2%)	81 (57.8%)	76 (54.3%)	64 (45.7%)	<b>0.05</b>
6	Do you think Television viewing exposes children to advertisements promoting foods with high sugar and acid content which are detrimental to oral health?	47 (33.6%)	93 (66.4%)	82 (58.6%)	58 (41.4%)	<b>0.001</b>
7	Do you think the eating habits of children are considerably influenced by food advertising and promotion?	56 (40%)	84 (60%)	87 (62.1%)	53 (37.9%)	<b>0.001</b>
8	Do you feel the food marketers use persuasive marketing techniques like free gifts with purchase for buying unhealthy food products?	64 (45.8%)	76 (54.2%)	89 (63.5%)	51 (36.4%)	<b>0.001</b>
9	Do you feel there is a need of restrictions on advertising of high sugar/salt/ fat foods during children's television programs?	73 (52.1%)	67 (47.9%)	112 (80%)	28 (20%)	<b>0.001</b>
10	Do you think overconsumption of sweetened and acidic foods is linked to increasing prevalence of dental caries and dental erosion?	57 (40.7%)	83 (59.3%)	81 (57.9%)	59 (42.1%)	<b>0.001</b>
11	Do you think statutory warnings regarding the chances of getting caries on food items/ wrappers are important?	55 (39.3%)	85 (60.7%)	102 (72.9%)	38 (27.1%)	<b>0.001</b>
12	Do you feel you should motivate your child against watching advertisements that are detrimental to oral health?	63 (45%)	77 (55%)	99 (70.8%)	41 (29.2%)	<b>0.001</b>
13	Do you think the advertisements that are detrimental to oral health should not be telecasted during peak hours?	74 (52.9%)	66 (47.1%)	108 (77.1%)	32 (22.9%)	<b>0.001</b>
14	How do you select your toothpaste?					

	As advised by the dentist	62(44.3%)		53(37.9%)		<b>0.05</b>
	As advised by TV advertisement	44(31.4%)		72(51.4%)		
	On your own	34(24.3%)		15(10.7%)		
15	Did the presence of a dentist in any of the TV ads motivate you to visit a dentist?	69 (49.3%)	71 (50.7%)	102 (72.9%)	38 (27.1%)	<b>0.001</b>
16	Do you wish to bring your family to a dentist once in every 6 months?	56 (40%)	84 (60%)	92 (65.7%)	48 (34.3%)	<b>0.001</b>
P value < 0.05 (*Chi square test)						

The present study revealed that after oral health education intervention, 58.6% of the study participants believed that TV exposed children to advertisements promoting foods with high sugar and acid content which are detrimental to oral health. These findings are similar to a study, where it was reported that half of the TV food advertisements introduced food with high amounts of sugar and fat [13]. Similar findings were reported by previous studies, where 95.3% and 57% of food advertisements were found to be of cariogenic or erosive products [14, 15]. The present study revealed that the 44.3% of children were tempted by the advertisement that had their favorite model and 39.3 % of the children were attracted to advertisements with music and color. Regarding, the advertisement appeals for cariogenic food advertisements, emotional (85.5%) appeal had the highest frequency [16]. The present study revealed that after intervention 79.3 % of the participants believed that parental supervision was necessary for children while watching TV. Countries like UK, US and Australia have mandatory or voluntary restrictions for particular foods, based on nutrient profiles [17, 18].

It was observed that children forced their parents to buy more cariogenic food items as compared to other items. But after intervention, a significant reduction in buying those foods was observed. The findings were similar to another study, where a higher proportion of food and drink advertisements potentially detrimental to oral health were telecasted during children's television programmes [14]. Consistent with previous research findings [19], this study found that the use of persuasive marketing techniques

was distributed mainly over children's programs. A study done among Indian school children to evaluate the influence of television advertisements on children, the relationship with oral health revealed, higher caries prevalence among children who watched television and asked for more food and soft drinks [2]. The present study also revealed that most of the parents considered statutory warnings on food items/ wrappers important, regarding the chances of getting caries. Parents should be educated about the consequences of persuasive marketing techniques and self-regulations should be imposed by parents to protect children against these marketing strategies to avoid the promotion of over-consumption of such foods [20].

Thus, it is recommended that parental supervision is necessary for children watching TV and statutory warnings regarding chances of developing caries should also be incorporated on wrappers of food items which are detrimental to the oral health. The children should be educated regarding the advantages and disadvantages of TV advertising. Parents need to spend time with their children to support and modify their media habits. Therefore, future research must specifically focus on media content directed at children. The extent of independent TV viewing allowed to children should be recognized and supervised by the parents. Restrictions should be imposed on television advertising of unhealthy foods. The policymakers and television advertising regulatory authorities should intervene and restrict the number of advertisements that are detrimental to the oral health which will reduce the exposure of children

to advertising of potentially unhealthy food and drink products.

## Conclusion

Children are exposed to TV advertisements which affect children's food preferences resulting in consumption of unhealthy foods that are detrimental to the oral health. Oral Health education intervention to parents is necessary for selecting healthy foods for their children.

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