

INFLUENCE OF WATCHING ADVERTISEMENTS ON KIDS' FOOD CHOICES

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ABSTRACT: This study aimed to determine the nature, content and duration of advertisements broadcasted during children's television programs and to understand their influence on children preferences of specific food products. After the advertisements' content analysis for three days broadcasted on two famous children television channels and one primetime channel, a questionnaire was constructed based on food products advertised. Data was collected from 150 children aged between 5-15 years. Based on the children's view obtained from the questionnaire, favorite TV channel asked was compared with the food preferences. This study explored the significant difference between children's food preference influenced by advertisements on children channel 2 as compared to channel 1 and primetime channel. In conclusion, Channel 2 has more frequent food advertisements which has influenced food choices among children. So, displaying more healthy food advertisements could be a source to educate children in making healthy choices regarding food products and consumer decisions.

Keywords: Food Choice, Advertisement, Kids' Channel, Healthy food.

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INTRODUCTION

In 1941 the first television advertisement was telecasted in the United States. Since then, many advertisements have been aired which promoted food and beverages specially aimed at children. Mass media targets children who are very young to understand the truth in advertising (Pomeranz, 2010). Thus it strongly influences children's food preference request, which is known as 'pester power'. Both parents and children are greatly affected by the media. Television is one such medium through which advertisements directly affect children's eating habits and their food consumption (Coon, Goldberg, Rogers and Tucker, 2001; Aktas, 2006).

According to Zywicki *et al.*, children are now spending more time watching television and viewing advertisements. Children are targeted by advertisers and food marketers by increasing number of commercials during television programmes, which aims at influencing their brand preference and choices, food purchases and intake (Fiates, Amboni and Teixeira, 2008). The problem of advertising is the type of food advertised along with the persuasion and the frequency of advertising of specific food i.e unhealthy food advertising percentage with respect to the frequency of viewing of the program by the child.

Lewis and Hill in 1998 found that 50% advertisements were contributed by food products and targeted children through strategies based on humor, happiness, fun and animation. Similar findings were seen

in the study conducted even after 10 years, in which a fantasy world, leisure settings, cartoon characters and celebrities were featured in nearly 77% of unhealthy food-related advertisements targeted at children (Sixsmith and Furnham, 2009).

Individual, social, environmental and cultural factors influence children's choice of food and these multiple factors interact in complex ways (Fiates, Amboni and Teixeira, 2008; Livingstone, and Helsper, 2004). Children food consumption have a direct relationship with obesity, diabetes, cancer, hypertension and coronary heart disease (Coon, Goldberg, Rogers and Tucker, 2001; Aktas, 2006). Many studies have shown increased amount of food advertisement with foods high in fat and sugar and low in fibre being the most promoted categories ("Nutrition Bulletin", 2011; Samuel and Ekundayo, 2018). Many controlled studies on children food choices have shown that children exposed to advertising choose advertised food products at significantly higher rates than those not exposed. Greater television use has been associated with higher intakes of energy, fat, sweet and salty snacks, carbonated beverages and lower intakes of fruit and vegetables (Pearson *et al.*, 2012). But the children's choice of food was not yet explored. So, the aim of the study was to determine the nature, content and duration of advertisements broadcasted in children's television programs and to understand their influence on children's choice of specific food products.

MATERIALS AND METHODS

Study area: The study was conducted at the OPD of University College of Dentistry, University of Lahore in month of August 2019.

Study population: The study included 150 parents and their children. A structured questionnaire was distributed till the target was achieved.

Sampling and Sample: This study was conducted in the OPD of University College of Dentistry, University of Lahore. Simple random sampling technique was used to collect data. By means of lottery method. One was randomly chosen from the entire list. All the children who matched the inclusion criteria were included till the targeted number was obtained.

Inclusion and exclusion criteria: Children between the age group of 5-15 years were included in the study. Those who are below and above the age group of 5-15 years were excluded. And children with special needs (physically and mentally handicapped) and those who did not want to participate in this survey were also not included.

Procedure: One popular primetime channel and two popular children television channels were recorded and seen for three consecutive days. The categorized products were as follows drinks, chips, biscuits, chocolates, carbonated drinks, ice creams, restaurants, flavored drinks, noodles, gums, cereals and jams. They were then sub categorized into the number of times and the duration

for which the advertisement was seen and the total exposure time was calculated. Based on this, a questionnaire was structured asking the children about which brands they preferred.

The questionnaire was partially open ended and was distributed in person and collected on the same time at the OPD of University Dental Hospital, University of Lahore.

Ethical approval: Approval from the Medical Superintendent of the Dental Hospital, Head of Community and Preventive Dentistry Department were obtained. Ethical approval was obtained from the ethical committee of University Dental Hospital University of Lahore.

Pre-test: A pilot study of 20 samples was done to assess the validity of the questionnaire. Results of the pilot study were not included in the analysis.

Statistical analysis: Data collected was entered into the spreadsheets. IBM SPSS statistics Software version 20.0 was used for data analysis. As descriptive statistics, frequencies and percentages were calculated whereas comparison was done using Chi-square test.

RESULTS

As demographic variable, gender was taken. The survey has been conducted among 150 people, out of which 64% were Females and 36% were Males.

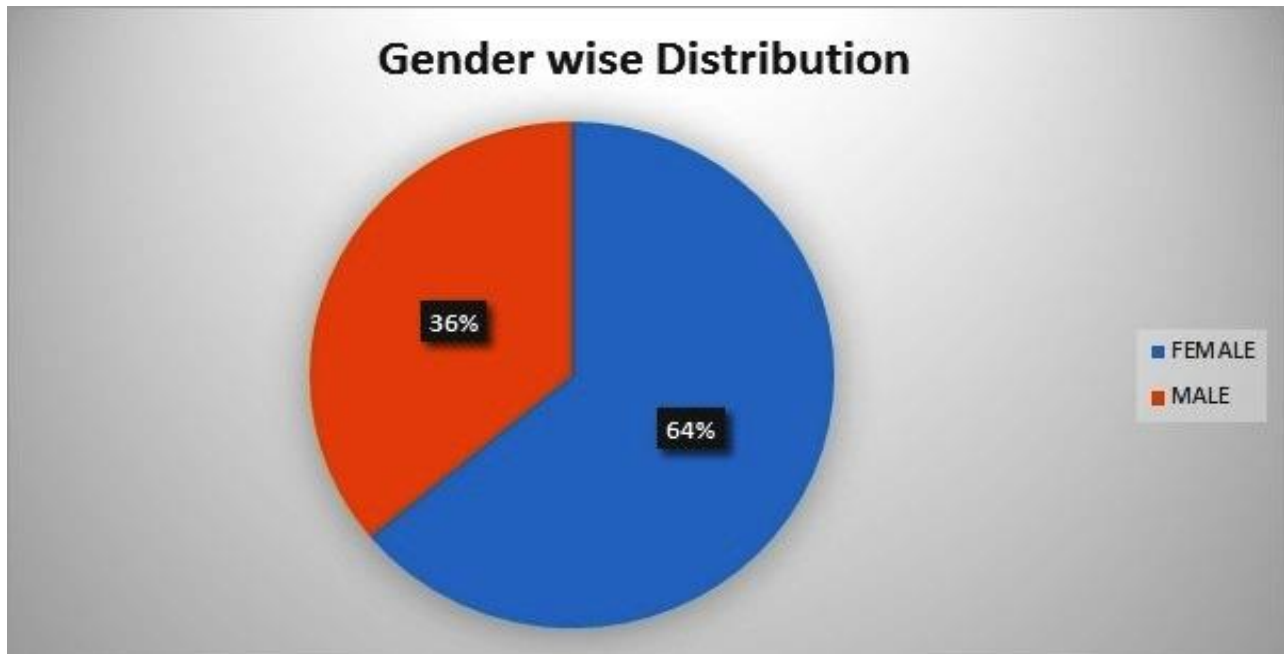


Figure-1: The gender wise distribution of study population.

The descriptive statistics was used to explore the choice of food items among children. Most preferred health drink opted was Opler's Milk (48.7%). Most preferred chips was lays (59.3%). 38.7% children opted cocomo as most preferred biscuits. 44.7% children opted Dairy Milk as most preferred chocolate. Corenetto was the most preferred ice cream (51.3%) among children participated in the study. Among the entire participants, 43.3% preferred Coke in carbonated drinks. McDonald

was highly preferred among children (45.3%). Among flavored drinks, Rooh Afza was highly rated as preferred drink among children. Maggi noodle were rated high as preferred noodles (46.7%). Most preferred chewing gum was Fresh-up (46.0%).Among cereals, majority of children responded with other choices (46.7%) as compared to fauji and Kellogs cereal. Mitchells jam was preferred by majority of children (60%).

Table 1: Frequency and Percentage of Food choices.

	Nestiva	Milk Pack	Olper's	Others
Most preferred health drink	40(26.7%)	37(24.7%)	73(48.7%)	0(0.00%)
Most preferred chips are	Potato Sticks 38(25.3%)	Lays 89(59.3%)	Slanty 23(15.3%)	Others 0(0.00%)
Most preferred biscuits are	Cocomo 58(38.7%)	Bisconi Chocolate Chip 45(30%)	Prince Biscuits 45(30%)	Others 2(1.3%)
Most preferred chocolate is	Kit Kat 38(25.3%)	Dairy Milk 67(44.7%)	Perk 45(30%)	Others 0(0.00%)
Most preferred ice cream is	Corenetto 77(51.3%)	Magnum 51(34%)	Zapper 11(7.3%)	Others 11(7.3%)
Most preferred carbonated drink	Sprite 36(24%)	Coke 65(43.3%)	Pepsi 27(18.0%)	Others 22(14.7%)
Most preferred restaurant is	KFC 28(18.7%)	McDonald 68(45.3%)	Subway 9(6.0%)	others 45(30%)
Most preferred flavored drink	Milo 67(44.7%)	Rooh Afza 68(45.3%)	Oolala 11(7.3%)	Others 4(2.7%)
Most preferred noodles are	Knorr 54(36.0%)	Maggi 70(46.7%)	Kolson 24(16.0%)	Others 2(1.3%)
Most preferred chewing gum is	Fresh up 69(46.0%)	Ding Dong 63(42.0%)	Trident 18(12.0%)	Others 0(0.00%)
Most preferred cereals are	Kellog's Corn Flakes 40(26.7%)	Fauji Cereals 40(26.7%)	Others 70(46.7%)	
Most preferred jam is	National 10(6.7%)	Mitchells 90(60.0%)	Shezan 11(7.3%)	Others 0(0.00%)

Chi-square was used to explore the influence of watching kids' channels on the food choices among children. Significant difference was found between watching the specific kids' channels and preferred health drinks ($X^2=34.705$, $P<.001$). Olpers was highly preferred by the children (26%), Nestle Nesvita was preferred by 25.3% children and Milk Pack was preferred by 17.3% children who usually watch kids' channel 2. Overall, the preferences for health drink was found to be influenced by kids' channel 1, channel 2 and prime channel among the children. No significant difference was found between watching specific kids' channels and preferred chips ($X^2=3.432$, $P=.488$). Lays was highly preferred by the children (41.3%), Potato Sticks was preferred by 16% children and Slanty was preferred by 11.3% children who usually watch kids' channel 2 which was higher as compared to channel 1 and prime channel. Significant difference was found between watching a specific kids' channels and preferred chocolate ($X^2=9.566$, $P=.048$).

Dairy Milk was highly preferred by the children (32.7%), Kit Kat was preferred by 19.3% children and Perk was preferred by 16.7% children who usually watch kids' channel 2. Overall, the preferences for chocolate was found to be influenced by kids' channel 1, channel 2 and prime channel among the children. Chewing gum preference was found not to be statistically significantly different while comparing with watching a specific kids' channels ($X^2=6.745$, $P=.150$). Fresh up was highly preferred by the children (34.7%), Ding Dong was preferred by 28.0% children and Trident was preferred by 6.0% children who usually watch kids' channel 2. The difference between watching a specific kids' channels and preferred cereals was found to be non-significant ($X^2=3.606$, $P=.462$). Cereals other than Kellogg's and fauji were highly preferred by the children (34.7%), Fauji cereal was preferred by 18% children and Kellogg's cereal was preferred by 16% children who usually watch kids' channel 2. Non-significant results were found

between watching the specific kids' channel and its influence on preferred Biscuits ($X^2=8.771$, $P=.181$). Cocomo was highly preferred by the children (30.7%), Bisconi Chocolate chip was preferred by 19.3% children and Prince Biscuits was preferred by 17.3% children who usually watch kids' channel 2, whereas, 68.7% participants of the study responded that they prefer other biscuits than in options. For ice-cream preferences, non-significant results were found with regards to the influence of watching the specific kids' channel ($X^2=6.532$, $P=.366$). Cornetto was highly preferred by the children (34.7%), Magnum was preferred by 24.0% children and Zapper was preferred by 6% children who usually watch kids' channel 2, whereas, 4.0% participants of the study responded that they prefer other biscuits than in options. Non-significant results were found between watching the specific kids' channel and its influence on preferred carbonated drink ($X^2=8.842$, $P=.183$). Coke was highly preferred by the children (32.0%), Sprite was preferred by 14% children and Pepsi was preferred by 12% children who usually watch kids' channel 2, whereas, 10.7% participants of the study responded that they prefer other carbonated drinks than in options. For restaurants' preference, non-significant results were found with regards to the influence of watching the specific kids' channel ($X^2=11.329$, $P=.079$). McDonald was highly preferred by the children (34.0%), KFC was preferred by 9.3% children and Subway was preferred by 2.7% children who usually watch kids' channel 2 which

was highest percentage as compared to channel 1 and prime channel, whereas, 22.7% participants of the study responded that they prefer other restaurants than in options. Significant difference was found between watching a specific kids' channels and preferred Flavored drink ($X^2=21.768$, $P=.001$). Rooh afza was highly preferred by the children (33.3%), Milo was preferred by 26.0% children and Oolala was preferred by 7.3% children who usually watch kids' channel 2. Overall, the preferences for flavored drinks was found to be influenced by kids' channel 1, channel 2 and prime channel among the children. For noodles' preference, non-significant results were found with regards to the influence of watching the specific kids' channel ($X^2=9.229$, $P=.161$). Knorr noodles was highly preferred by the children (28.7%), Maggi was preferred by 28.0% children and Kolson was preferred by 11.3% children who usually watch kids' channel 2 which was highest percentage as compared to channel 1 and prime channel, whereas, 0.7% participants of the study responded that they prefer other noodles' brands than in options. Non-significant results were found between watching the specific kids' channel and its influence on preferred Jam brand ($X^2=4.080$, $P=.666$). Mitchells was highly preferred by the children (42.0%), Shezan was preferred by 16% children and National was preferred by 4.7% children who usually watch kids' channel 2, whereas, 6.0% participants of the study responded that they prefer other Jam brands than in options.

Table 2: Difference between kids' channels and their impact on food preferences among children.

	Preferred Health Drink			
	Nestle Nesvita	Milk Pack	Olpers Milk	None
Kids' Channel 1	0.0%	1.3%	17.3%	0.0%
Kids' Channel 2	25.3%	17.3%	26.0%	0.0%
Prime Channel	1.3%	6.0%	5.3%	0.0%
$X^2=34.705$, $P<.001$				
	Preferred Chips			
	Potato Sticks	Lays	Slanty	None
Kids' Channel 1	4%	12.0%	2.7%	0.0%
Kids' Channel 2	16%	41.3%	11.3%	0.0%
Prime Channel	5.3%	6.0%	1.3%	0.0%
$X^2=3.432$, $P=.488$				
	Preferred Chocolate			
	Kit Kat	Dairy Milk	Perk	None
Kids' Channel 1	3.3%	5.3%	10%	0.0%
Kids' Channel 2	19.3%	32.7%	16.7%	0.0%
Prime Channel	2.7%	6.7%	3.3%	0.0%
$X^2=9.566$, $P=.048$				
	Preferred Chewing Gum			
	Fresh Up	Ding Dong	Trident	None
Kids' Channel 1	6.0%	8.0%	4.7%	0.0%
Kids' Channel 2	34.7%	28.0%	6.0%	0.0%
Prime Channel	5.3%	6.0%	1.3%	0.0%
$X^2=6.745$, $P=.150$				

Preferred Cereals				
	Kellogs corn flakes	Fauji cereals	None of above	
Kids' Channel 1	6.7%	6.0%	6.0%	
Kids' Channel 2	16.0%	18.0%	34.7%	
Prime Channel	4.0%	2.7%	6.0%	
X²=3.606, P=.462				
Preferred Biscuits				
	Cocomo	Bisconi Chocolate Chip	Prince Biscuit	None of above
Kids' Channel 1	3.3%	6.7%	8.7%	0.0%
Kids' Channel 2	30.7%	19.3%	17.3%	68.7%
Prime Channel	4.7%	4.0%	4.0%	0.0%
X²=8.771, P=.187				
Preferred Ice Cream				
	Cornetto	Magnum	Zapper	None of above
Kids' Channel 1	10.7%	4.0%	1.3%	2.7%
Kids' Channel 2	34.7%	24.0%	6.0%	4.0%
Prime Channel	6.0%	6.0%	0.0%	0.7%
X²= 6.532, P=.366				
Preferred Carbonated Drink				
	Sprite	Coke	Pepsi	None of above
Kids' Channel 1	6.7%	4.7%	5.3%	2.0%
Kids' Channel 2	14.0%	32.0%	12.0%	10.7%
Prime Channel	3.3%	6.7%	0.7%	2.0%
X²=8.842, P=.183				
Preferred Restaurant				
	KFC	McDonalds	Subway	None of above
Kids' Channel 1	6.0%	6.0%	2.7%	4.0%
Kids' Channel 2	9.3%	34.0%	2.7%	22.7%
Prime Channel	3.3%	5.3%	0.7%	3.3%
X²=11.329, P=.079				
Preferred Flavored Drink				
	Milo	Rooh Afza	Oolala	None of above
Kids' Channel 1	14.7%	3.3%	0.0%	0.7%
Kids' Channel 2	26.0%	33.3%	7.3%	2.0%
Prime Channel	4.0%	8.7%	0.0%	0.0%
X²=21.768, P=.001				
Preferred Noodles				
	Knorr	Maggi	Kolson	none of above
Kids' Channel 1	2.7%	12.0%	3.3%	0.7%
Kids' Channel 2	28.7%	28.0%	11.3%	0.7%
Prime Channel	4.7%	6.7%	1.3%	0.0%
X²=9.229, P=.161				
Preferred Jam				
	National	Mitchells	Shezan	None of above
Kids' Channel 1	1.3%	9.3%	7.3%	0.7%
Kids' Channel 2	4.7%	42.0%	16.0%	6.0%
Prime Channel	0.7%	8.7%	2.7%	0.7%
X²=4.080, P=.666				

DISCUSSION

Food advertising and marketing aimed at children affects the children's brand awareness, preference, loyalty and purchase. In this study, it was observed that the consumption of cariogenic foods is

influenced by advertising and marketing (Needlman, 2009). Advertisements during children's television are for food products that are high in sugar content and thus adversely affect the oral health. These findings are similar to other studies conducted earlier (Najeeb, Zafar, Khurshid, Zohaib and Almas, 2016). Children's

preferences for foods and drinks has been proven to be associated with exposure to television advertisements (Fleming-Milici and Harris, 2016; Borzekowski, and Robinson, 2001; Cairns, Angus, Hastings, and Caraher, 2013; Andreyeva, T., Kelly, I., and Harris, J., 2011). Previous observational studies have shown that greater screen time is associated with greater consumption of energy dense, nutrient poor foods and drinks (Borzekowski, and Robinson, 2001; Cairns, Angus, Hastings, and Caraher, 2013; Andreyeva, T., Kelly, I., and Harris, J., 2011; Halford *et al.*, 2008; Haroon, Queshi, Nisar and Nisar, 2010). Bredbenner and Darlene (2000) suggested that television advertisement creates misconception among children about the nutritional values of foods and how to maintain good health. However evidence suggests that rather than television, advertising is particularly detrimental (Kelly *et al.*, 2015). The advertisements shown on children's channels have greater influence on children as compared to primetime channels. But the fact is that children are more influenced by parents, playmates and peer pressure rather than mass media itself (Dhar and Baylis, 2011).

Previously the concept of joint family was prevalent in which children lived together. They spend most of their time playing outdoors and board games, as a result children spent very less time in front of the television, and hence its influence on the children's mindset was also less. However nowadays the concept of nuclear families is growing. Children do not have any source of entertainment of their liking and hence, spend most of the time watching television. This in turn influences their desire to buy the different brands that they come across on television.

Fig-1 shows that there were a total of 150 participants out of which 96 participants were females and 54 were males. Food items consumed by children are advertised for a greater duration on the children channels as compared to primetime channel. There is an impact of advertisements on children and their eating habits, statistically it was irrelevant as primetime channel too advertised food products as potentially detrimental to health.

Analysis of the recordings from other studies revealed that a higher amount of advertising time was spent on food products; a high percentage of all advertising time was devoted to potentially cariogenic products (Fleming-Milici and Harris, 2016). Many food brands promote their products by giving complimentary gifts which attracts the attention of children more. So they in turn force their parents to buy that particular product.

Nutritionist and health care advisors should advice parents to limit exposure of television. Health advocates should raise the public policy issue of advertising the young child. A few countries have decided that the influence of advertisements on children

is strong enough to take policy actions. Sweden has banned advertisements targeted at children less than 12 years of age. Australia has also banned food and beverage advertisement for preschool children. A province in Canada, Quebec has also banned fast food advertisements on television (Dhar and Baylis, 2011).

Limitations of the study are that only 2 kids channel and one primetime channel was included in the study. In the future research it is advised that number of kids channels, number of days for watching commercials along with the number of parents and children should be increased.

Conclusion: It is suggested that rather than banning advertisement directed at children, it is better to expose children to advertisement and educate them to make intelligent media and consumer decision.

Recommendations: It is not possible to put a ban on advertisements. Rather children must be educated and made aware to make intelligent decisions for themselves. Food advertisement should be restricted before, during and after all the television programs aimed specifically for children. An approach for active promotion of the choice of healthy food from the time birth onwards should be proposed.

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