

The Review of Childhood Obesity as a Result of Advertising Child Oriented Unhealthy Food & Beverages

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Abstract

The rise of childhood obesity is one of the public health concerns in worldwide. It can be said as the sign of crisis because it is harmful to children. Therefore, this report has covered a total of 25 journal articles. Articles reviewed are regarding on the intention of food marketers to formulate a healthier child oriented food, the strategies applied to promote their food such as advergaming and product packaging, the volume of food advertisements to children as well as how these strategies have changed the mindset of children. In conclusion, most of the television commercials are unhealthy food by using fantasies and positive atmosphere to attract children's attention. Unhealthy food marketers would tend to design the food packaging with cartoon characters and bright colors as those catches the children's attention more efficiently. Children would even visit the website delivered from television commercials and product packaging which often include advergaming for them to play and increase brand recognition. Children's perspective on children food has changed dramatically due to the influence of advertisement delivered by food marketers. Most of the food marketers tend not to produce a healthier food to children. Therefore government in different country should set a rule to limit the unhealthy food advertisements delivered to children since it does play a major role in childhood obesity.

Index terms— child-oriented food, advertisement, advergaming, packaging.

1 Introduction

The rise of childhood obesity has led to public health concern in many countries. One of the factors were due to the increase of child oriented food and beverages by food marketers. Child oriented food and beverages are identified by any package that applied promotional characters, sports references, premium offers or children's television/movie tie-ins (Chacon, Paola, Joaquin;. Thus, another contributor to childhood obesity is food advertising (Ramirez-Ley et al., 2009). Due to technology advancement, children are now overexposed to mass media such as television, internet and video games (Lee, Choi, Quilliam and Cole, 2009). With such advantage, businesses attempt to promote their unhealthy foods to attract children through advergaming in Internet. However, the banning of advertising child oriented food may not be useful if food marketers do not intend to reformulate their products positively. Other than advertising, food packaging and cheap prices of unhealthy food can still attract children to buy the products. However, these are only theories. The effect of the volume of food advertisement delivered to children and food packaging is still unclear. This paper will focus on how children perspective on children food being shaped by food advertisement; increase brand recognition from advergaming; attracted by food packaging and the intention of reformulating products positively by food marketers.

2 II.

The Intention of Improving Unhealthy Child Oriented Food and Beverages Nutrition Content by Food Marketers

3 III. TELEVISION COMMERCIALS, THE FAMOUS

42 In the analysis conducted by Hawkes & Harris (2011), the potential of reducing harmful effects in child oriented
43 food and beverages were examined through investigating pledges agreed by the 52 food industries worldwide.
44 13 pledges of child oriented food marketing were developed between 2005 and 2009. There were only three
45 pledges were specifically for soft drink and fast food industries. On the same hand, only ten of the pledges
46 are international; companies are required to publish individual commitments. Most of the commitments have
47 somehow met the minimum criteria of the pledges. By reviewing the pledges, only some of them were similar.
48 In addition, permitted companies have to set food criteria that are not within the restrictions. Even though
49 pledges were established, the companies are only meeting the criteria, or just to play with the law. The help of
50 the pledges might not be helpful but at least there is a minimum criterion to avoid further childhood obesity.

51 Among the food products of child oriented, Adelaide, a supermarket in Metropolitan was surveyed by Savio,
52 Mehta, Udell and Coveney (2013). There were only 33 % of the products investigated did not change the
53 nutrient content since 2009. Among the rest, only sodium has no similarity for the ratio of positive and negative
54 reformulated products. From the result of assessed percentage change in each product, 53 products out of 120
55 products had reformulated moderately; 18 products have reformulated both positive and negatively; 42 products
56 have reformulated substantially. The result of the use of nutrient criteria showed only 5 products were either
57 reformulated positively or did not reformulated negatively. The observation of the study revealed the lack of
58 positive reformulated child oriented food products. In addition, the development of benchmarks for reformulation
59 should be developed with standard criteria to prevent reformulation of negative nutrition content to child oriented
60 food.

61 3 III. Television Commercials, the Famous

62 Advertising Medium of Unhealthy Child Oriented Food 18 percent of the 65,462 advertisements across many
63 countries being analyzed by Kelly and her group (2010) were food, the second most frequently advertised product.
64 In an overall result, 5 food advertisements were broadcasted per hour, per channel. Greece has accounted the
65 most and Brazil was the lowest rate in food advertising, only 2 food advertisements per hour per channel (Kelly
66 et al., 2010). In addition, most of the advertisements are unhealthy foods, which accounted 67 percent. Among
67 the unhealthy food category, fast food accounted the most, 12 percent especially in the United States, Canada,
68 Sweden, and Australia. However, Germany, Italy and China advertised chocolate & confectionary the most. The
69 most frequent advertised food in Brazil is supermarkets, which considered as miscellaneous. Spain and United
70 Kingdom were the country for the most advertised product of low-fat dairy foods.

71 Television advertisement is a major strategy used by the Australian food marketers to promote child oriented
72 food. Child oriented food and beverages have more advertisements in free to air television than popular
73 subscription channels (Hebden, King, Chau & Kelly, 2011). In addition, most of the advertisements are not
74 healthy to children. These results were obtained by recording 6 popular subscription television channels among
75 children for 4 days in February of 2009. Although non healthy food accounted for 72% of the food advertisement,
76 it contained lesser persuasive techniques than healthy and other foods. In addition, unhealthy child oriented
77 advertisement often include persuasive marketing techniques such as promotional characters and premium offers
78 to increase brand recognition and to attract children (Kelly, Hattersley, King, & Flood, 2008). On the same hand,
79 although the amount of food advertising had decreased from 7 in 2006 to 5 in 2008, the overall unhealthy food
80 advertisement remained stable (Kelly, Chapman, King& Hebden, 2010). The highest peak of television time
81 resulted children to be attracted by the unhealthy food easier. In Australia, persuasive marketing techniques
82 were mostly used in the advertisement to be broadcasted during the peak viewing times for a better effect.

83 Simultaneously, the reason for childhood obesity in Germany was due to the overexposure of attractive food
84 commercial delivered by television to children (Effertz & Wilcke, 2011). This result then revealed that the
85 declared purposes from the voluntary agreement of industry along with the European Union (EU) Pledge's
86 announcement have failed. In order to compare the effect of EU pledge towards the advertisement pattern,
87 commercials were compared from 2007 to 2010. From the year between 2007 and 2008, food products have
88 accounted 19.9 percent of television commercials in 3 children's widely viewed channels in Germany. Within this
89 percentage, 73 percent of them are non healthy food. In the television commercials, promotional characters and
90 premiums are included to attract children. By comparing the results with 2010, the percentage of 18.5 were food
91 products commercials; 98.2 were non healthy food.

92 In Mexico, children have exposed to advertisements of high energy dense foods than adults (Ramirez-Ley et
93 al., 2009). The result was collected by recording 7 days of 5 local and national channels. There were 22 percent
94 of 8299 registered advertisements were food. Average of 4 food related advertisement was delivered per half an
95 hour during children's television time. Among the advertisements, half of them were snacks with high calories.

96 On the other hand, the study done by Powell, Schermebeck, Szczypka, Chaloupka and Braunschweig (2011)
97 revealed that between 2003 and 2009, children in United States have decrease in watching unhealthy food product
98 advertisement. Yet, exposure of fast food advertising has increased 21.1 percent for age group of 2 to 5 years old
99 children. In addition, the nutritional food content that were being advertised did not improve positively.

100 4 IV.

101 5 Other Food Advertisement Strategies

102 Among the 83 interviewed children at the age from 7 to 13, only few of them know about the advertisement
103 delivered in Internet rather than television commercials. In addition, the website was visited by more than one
104 third of children based on the address delivered on Television or printed on product package (Brady, Farrell,
105 Wong, & Mendelson, 2008). Other than website address delivered through television and product package, it can
106 also be shared with their friends. By the use of only websites, food marketers use different marketing features
107 to promote their products (Kelly, Bochynska, Kornman, & Chapman, 2008). The branded education was an
108 applied techniques use by many food websites, then competitions, promotional characters, downloads, games and
109 children's section.

110 With such convenient media given to the food marketers, children are now being exposed to unhealthier child
111 oriented food advertisements through different media, uncontrollable.

112 Other than delivering website address through television commercial and product package to extend the shelf
113 life of advertisement, another strategy used in television commercials are emotional and rational product appeals
114 (Page & Brewster, 2007). A total of 147 commercials broadcasted on United States were analyzed. Many
115 product advertisements include positive adjectives to attract the children and made them believe such products
116 are able to bring happiness to them. Emotional appeals applied in the analyzed advertisements are such as 'fun',
117 fantasy, more socialize and the opportunity of being cool. In addition, Maher, Lord, Hughner and Childs (2006)
118 stated there were 85% of the television commercials included consumer related primary appeal while only 10%
119 of television commercials applied general health appeals between 2000 and 2005. Another study done by Rose,
120 Merchant and Bakir (2012) has also strengthened the evident that fantasy appeals with positive atmospheres are
121 often included in food advertising. However, most of the products were simultaneously unhealthy and are high
122 caloric food. Base on the understanding by 8 to 9 years old children, they do somehow understand the purpose
123 of advertisement, to sell products. They also have the intention to know the fact of advertisements they have
124 watched. Yet, they are still attracted by the strategies used mainly because they were unable to apply their
125 knowledge.

126 According to Castonguay, McKinley and Kunkel (2012), 'health' messages were included in more than half
127 of the child oriented food advertisements. The contents that were being analyzed in the study were 'health'
128 messages and nutritional content. Health messages are such as 'whole grain', 'reduced fat' and 'heart healthy' or
129 nutrition from fruit was included into the recipe. Result showed that most of the products are high in calorie,
130 such as sweetened cereals and fast foods. This result was obtained after analyzing of 534 of food advertisements
131 in television shows for children. The advertisements were collected by recording 3 months of channels for children
132 between 7a.m. to 10p.m. The strategy of using 'health' messages had blurred the line between healthy and non
133 healthy food, especially by the children.

134 For fast food companies, they have no target customers simply because their products are acceptable by
135 everyone. Yet, they tend to increase sales by promoting their products through social media or school marketing
136 (Soba & Aydin, 2011). Other than those two strategies, Fast Food Company would also try to increase their
137 brand recognition and good will to keep the old customers, attract new customers and use as a tool to promote
138 their company's new and existed product. Even though the market of fast food companies are big, they have
139 to make sure they have met customer satisfactory. The criteria set by customers are good service, apply legal
140 procedures of companies, provide proper help to customer, the fact of the product and provide empathy while
141 doing business (Soba & Aydin, 2011).

142 In Guatemala, selling the cheap unhealthy snacks near the school environment is the main strategy of food
143 industry through various marketing techniques in order to promote to children (Chacon, Letona, & Barnoya,
144 2013). The results were collected by purchasing child oriented snack in stores within 200 square meters of 4
145 urban community schools. 106 packages in 55 stores were purchased as reference for the study and products were
146 classified by the use of United Kingdom's Nutritional Profiling Model. Promotional character on the package
147 is the most heavily used strategy by food marketers. In addition, US dollar of 0.19 is the median price of the
148 snacks. By selling unhealthy child oriented food, it allows most of the students to purchase unhealthy food since
149 they are affordable. The result has also revealed that 97.1 percent of the products are less healthy even though
150 41% has nutritional related health claim.

151 6 a) AdvergAMES

152 According to Lee, Choi, Quilliam and Cole (2009), children often play games that use of unhealthy foods as an
153 element, such as candies. From the games they have analyzed, there were less than 3 percent were serve as the
154 purpose of educating children regarding issues of nutrition's and health. There were 3 steps taken by this group
155 of study in order to obtain these results. Firstly, to search for food products that was promoted to children
156 by food marketers. Secondly, to analyze the advergAMES' content targeted to children through websites of top
157 food marketers. Lastly, to identify food products' nutritional content in advergAMES by selecting randomly. The
158 overall study revealed that the top selling food marketers' website contains a lot of games, especially for children.
159 The advergAMES mainly contain brand logo, product package, food item and brand 'spokescharater' to increase

7 CHILDREN'S PERSPECTIVE ON KIDS' FOOD

160 popularity. Most of the food that was promoted falls into the category of such as baked goods, snakes, poultry
161 and dairy products which are high in sugar level.

162 Another similar study was done by Paek and the group (2013). The first step of the study was the only different
163 step taken, the identification of audiences' characteristics. The results of this study revealed the Children's Food
164 and Beverage Advertising Initiative (CFBAI) has sponsored 119 advergimes from a total of 143 advergimes
165 investigated; 79.5% of 44 advergimes has reached children. There was about 87% of the advergimes has no
166 age limit. On the other hand, advertisement breaks and the information of healthy lifestyle were found in 71%
167 of advergimes. The study had also revealed that brand integration of the food marketers had increased due
168 to advergimes. The food content of the advergimes was simultaneously mostly unhealthy. Lastly, the children
169 identify the food products from the knowledge of advertisement breaks and brand identifiers.

170 The limitation of both studies, unable to identify the effect of advergimes was however covered by the study
171 done by Dias and Agante (2011). Dias and Agante (2011) stated that only food that was advertised through
172 games was chosen by children. Children participated in the study were first assigned to either play healthy or less
173 healthy advergimes. Children were then assigned to answer the post treatment picture questionnaire regarding
174 the choice of immediate food, nutritional knowledge and favorite food. Even though two groups of children chose
175 the food according to the game they have played, they share the similar knowledge about nutrition of food.
176 Children chose the food according to the game they played because they were not able to employ the nutritional
177 knowledge during the selection of food. b) Product packaging strategies and their effect From the collection of
178 child oriented food and beverages in a major supermarket of Adelaide, South Australia, there were 157 products
179 were child oriented and mostly non healthy food, high fats and sugar (Mehta, Phillips, Ward, Coveney, Handsley,
180 & Carter, 2012). In order to promote the unhealthy child oriented foods, more than 16 marketing techniques
181 were applied. The most used techniques are graphics, cartoons and celebrities. More ridiculously, 55.5 percent
182 of non healthy foods claimed for nutrition and health such as low sugar.

183 Through the analysis of food package contents, the result showed that food packaging has lead children in
184 India to overexpose towards food promotions (Pavleen, 2013). Other than that, children in India often prefer
185 to consume beverages, confectionary, baked products, snacks, ready to cook products and ice creams (Pavleen,
186 2013). The target of the study is parents of children at the age of six to seven living at Amritsar city. Two
187 steps were taken for this study, firstly to collect information on what brand of food would be bought for the
188 respondents' children then analyze the marketing tactics used for food packaging. During the content analysis
189 of product packaging, it was found out packages often includes package semiotics, cross promotions, novelty
190 packaging, premium promotions and price promotions (Pavleen, 2013). However, the most used tactics product
191 packaging by Indian companies is bright colors and price promotions when compared to Multinational Companies.
192 The rest of the promotional elements have emerged in Indian market, such as nutrition claims.

193 Throughout review of strategies used by many food marketers in advertising unhealthy child oriented foods,
194 the study about the effect of the strategies were the limitations. However, this area of study was conducted
195 by Elliott (2009). The focus group for this study is from grade 1 to 6, separated by gender and age groups.
196 The result revealed that younger children prefer or attracted by the cross merchandize but the older children
197 attracted by the colors, design and image of the package. In addition, children often prefer package with special
198 characteristics such as unusual color or feature. The reason of it is children thought it would be fun to eat.
199 Gender also affects the choices, girls emphasize on nutritional content; boys focus on interactivity of food. Boys
200 would pick the product with packaging that allows them to play along such as to squeeze it. According to the
201 study, the perspectives of healthy food by children are only fruits and vegetables. Other than that, the focus
202 group would say package with words they do not understand refer to healthy food. Children at young age also
203 do not read the nutritional content printed on the package but to look for logo such as 'fat free'. From this
204 study, it showed that children are easily attracted by nutrition claim food and unique design as they have no
205 solid knowledge of nutrition at such young age.

206 Pires and Agante (2011) on the other hand studied the effect of food packaging towards children by transferring
207 the unhealthy food package visual appearance content to the healthy food packages. Other than that, the
208 comments of junk food by children are attractive, packaged in a better way and well promoted. In this study,
209 areas of focus are children's package evaluation; the package attitude toward the product; perceived healthiness;
210 purchase intention (Pires& Agante, 2011). 10 to 14 years old of 408 Portuguese children were selected to complete
211 the questionnaire distributed. This age group was chosen as they have the proper nutrition knowledge to aware
212 healthy food. During the study, children preferred product with bright colors and promotional characters even
213 though both are the same products, sliced apple. The reason from the focus group is as simple as those elements
214 caught their attention easily. Therefore the study showed that product packaging does help in influencing
215 attitudes of children and the intention to purchase the product. By referring to the result, it gave the opportunity
216 to food marketers who tend to improve their products positively and increase sales simultaneously by modifying
217 the product packaging.

218 V.

219 7 Children's Perspective on Kids' Food

220 Stated by Elliott (2011), banning unhealthy child oriented products advertisement only contribute little solution
221 to childhood obesity. Therefore, this study focuses on how children determine food that belongs to them while

222 choosing from variety choices. Despite of age, location and sex, children categorized junk food, sweetened products
223 and baked products as foods for children. When ask for child oriented foods through packaging, package with
224 cartoon characters has attracted their attention; cartoon characters design categorized the products for children
225 indirectly. The third perspective of junk food is the concrete dimensions, such as shape, color and small size
226 of the food. Overall in children perspective, the processed, high sugar and low nutrients are the food specially
227 produced for them. According to children, these concrete dimensions has developed 'fun' food concept mainly for
228 children. In contrast, adult foods categorized by children are the unprocessed foods which are fruits, vegetables
229 and meat.

230 8 VI.

231 9 Discussion

232 There were only 3 pledges were specifically for soft drinks and fast food industries (Hawkes & Harris, 2011).
233 Simultaneously, most of the food marketers only pay the best effort to at least meet the minimum criteria of
234 the pledges. In addition, only some of the company commitments are similar to the pledges. By investigating
235 the percentage of reformulating the nutrition content of each product, only some products were reformulated
236 positively or not yet being reformulated. This shows that food marketers are only responsible to reformulate
237 food according to the minimum criteria set in the pledges. Therefore government may be able to increase the force
238 of reformulating food positively by standardize the pledges. Pledges are only useful when it has high standard
239 that bring pressure to food marketers. This idea may increase pressure to most of the food marketers; it is still a
240 better move in order to save the younger generations. Food marketers should have business ethics as well instead
241 of to only produce what they want and ignore the public concern, childhood obesity. The limitation of this area
242 of study is unable to identify the criteria of each pledges set. If content and criteria of pledges were identified,
243 suggestion of improvement about the pledges can be made and enhance the possibility of reformulating food
244 positively by food marketers.

245 Television commercials are to be considered as the most used medium by food marketers to promote their
246 products. Children are exposed to food advertisement during the advertisement breaks. Throughout the analysis
247 of content in television commercials, fantasies and positive atmosphere are the important element to be added.
248 Children are simple minded, they learn what they saw from the television because it just caught their attention.
249 Unfortunately, those advertisements do not belong to healthy food. More advertisements were broadcasted during
250 the were not useful in Germany. The simple step can be taken by the government would be to ban the amount of
251 advertisement to be broadcasted in free to air television. Rules can also be given to the broadcast company to only
252 accept a fix number of unhealthy advertisement or only advertise healthy food to children. However, throughout
253 this area of study, the effect of elements used in television commercials to children was not investigated. It is
254 advisable to examine on how children were attracted by fantasies and positive atmosphere, the part of television
255 commercials.

256 Other than television commercials, there are also other strategies applied by food marketers to increase their
257 sales. Websites addresses are viewed by children are able to be shared among their friends. It will increase
258 the area of advertisement due to the use of social networks now days. Television commercials often include
259 positive elements to convince audiences that such product can bring positive energy to them. Good will and
260 brand recognition are also considered as a strategy since it helps to retain existed customers and attract new
261 customers. Food marketers would also increase sales by lowering the price and use of promotional characters to
262 catch children's attention. However, the opinion and reflection from children were not recorded. If the reason
263 of choosing to believe the source of advertisement were recorded, the relationship between advertisement and
264 childhood obesity would be firm. Opinion can be collected while children were purchasing the product, the feeling
265 and the reason of purchase then can be recorded precisely.

266 Advergame was one of the strategies of advertising food. Advergames are usually designed for children, and
267 graphics usually include the company's food products. Children were targeted by the use of advergames because
268 advergames help the company to increase brand recognition. In addition, those games are mostly non educational.
269 If these games were at least educational, use of games to advertise can still be tolerant. On the other hand, it
270 will not be useful if food marketers promoting healthy food to children as it will only decrease their sales. No
271 limitations were found in this area of study. However, more study should be done to strengthen the fact on
272 advergames are the tool to gain brand recognition.

273 Due to the influence by media and advertisements delivered by the food marketers, children believed that
274 product packaging with bright colors and promotional characters are meant for them. Food cut into fun shape
275 made them interested and therefore chose the product from a variety of choices. Children have limited knowledge
276 about nutritional content therefore they are unable to employ the nutritional knowledge. Therefore healthy food
277 marketers can use the strategies mentioned above to promote their products. Children believe what they saw
278 before including food. Yet, the limitation of this study is too few of the similar study were conducted and the
279 theory just developed may seem to be non-credible.

280 **10 VII.**

281 **11 Conclusion**

282 From this study, it is clear that food marketers are willing to pay or invest for anything to increase their sales.
283 Unhealthy child oriented food is the most advertised food in television commercials. Advergaming were even
284 sponsored for children to play, mainly for brand recognition. Website addresses were delivered through television
285 commercials as well as product packaging, which is easier to share among the children group through internet.
286 Cheaper price was one of the strategies as well to increase customers, the primary students. Product packaging of
287 unhealthy child oriented food include everything that is positive to attract children, such as nutrition claim, bright
288 colors and cartoon characters. Unhealthy food mostly contain high sugar and fats because children just like junk
289 foods, the well processed food that make children think it is more fun to be eaten. Most of the food marketers
290 only met the minimum criteria, simply because the intention to earn money and behave well. Advertisements are
291 being delivered everywhere through any medium, which has also shaped the children's thought on how children
292 food should look like. Due to these strategies applied by food marketers, a lot of moves should be made in
293 order to reduce the rate of childhood obesity. However, the first move by the government is to first reduce
294 the advertisement delivered through different medium by the food marketers since it attract children easily and
295 children are convincible. Therefore in conclusion, advertising unhealthy child oriented food does play a major
296 role in childhood obesity. ¹

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