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Impact of Food Advertisement on Childhood Obesity

Samiya Loya

Ph.D. Candidate, IQRA University, Main Campus, Karachi, Pakistan

Dr. Javed Hussain

Dean, Department of Business Administration, IQRA University, Main Campus, Karachi, Pakistan

Saman Ismail

Ph.D. Candidate, IQRA University, Main Campus, Karachi, Pakistan

Abstract:

Obesity has become a critical concern in the present day being an important source of the chronological diseases. Consequently, factors that lead to obesity are receiving growing attention as a source to explore ways for controlling chronic results. Obesity mainly results from unhealthy eating habits and the role of television is found profound in promoting such behavior. The underlying study is aimed to fill the gap of such evidence in the context of the developing country, considering the case of Pakistan. Using sample size of 250 respondents for the questionnaire based enquiry, the study concluded that obesity has direct relationship with the overeating, hunger, impulsive and statusCo. However, the hypothesized relationship between the obesity and the quality education was not found significant.

The originality of the study lies in adding to the limited literature about the behaviors and its respective impulsion factors that are growing obesity in Pakistan. The study has thus opened an avenue to expand the literature by conducting reassessment of factors for the results validation or rejection. Furthermore, on the policy front it provides guideline for the proliferation of the content by regulators. Also it provides an important parenting guideline in determining the level of interaction of television screens and younger children.

Keywords: obesity, hunger, behavior, television ads, eating habits

1. Introduction

Promotion is by and large conducted through wide number of ways (Christopher, Payne, and Ballantyne, 2013), however, the impact of advertisement is incremental in the lives of children (Moore, 2004; and Schudson, 2013). With every passing day the television is becoming an unavoidable part in the children's life (Huston, 1992; Statista. 2014a; and Statistica. (2014b). Children are exposed to television output even at the age of three months (Federal Trade Commission, Centers for Disease Control and Prevention, Food and Drug Administration and U.S. Department of Agriculture (2009), while the interaction grows considerably with growing age (Zimmerman, Christakis, and Meltzoff, 2007; Xu, Bao, and Landry, 2014). It requires no assertion for the fact that the commercial advertisement and paid content accounts for the considerable airtime of the television. As a consequence, children's attention through television is successfully encapsulated for being part of surrounding (Blades, Oates, and Li, 2013; Shutts, Kinzler, and DeJesus, 2013). Brand recognition build through characters in advertisement and paid content specifically cartoon by big brands like McDonalds are used to manipulate the food choice among children (Ferguson, Contreras, and Kilburn, 2013). Moreover, various tactics are employed that distracts the attention from the nutritional disclaimer, if even produced in under-discussed promotional content (Black, and Watson, 2013; Roberto and Khandpur, 2014; Kiesel and Villas-Boas, 2013; and Simola, Hyönä, and Kuisma, 2014). Owing to increased watching time of television mainly among children, role of television advertisements has gained increased attention for various appeals as well as its complex impact (Ferguson, Mu~noz, and Medranom 2012).

Obesity is taken as the main contributor to chronic diseases and has reached to an outbreak level since more than quarter decade (Ogden, 2014). Number of studies conducted in the regard has established that the children's eating habits are significantly influenced through promotional content on the television (Schudson, 2013; King, et al, 2013; and Roberts, et al. 2014).

Importantly, this does not mean that adults have exception. Instead, the focus on exploring the impact among children has a rationale that eating habits developed in the early ages of life is an important predictor of behavior in long term (Connell, Brucks, and Nielsen, 2014; Ghimire, and Rao, 2013). Moreover, the regulatory in the developed countries are taking actions to control the adverse impacts resulting from the advertisements; nevertheless, the effectiveness of such measures is still under debate (Qi, 2013; and Craswell, 2013) Contrary to this accepted relation between the advertisement and unhealthy eating behavior in the developed countries, it has received little attention in the developing parts of the world (Nanan, 2002; Mushtaq et al, 2011 and Haroon, Queshi, and Nisar, 2010).

Researches established that television watching has grown considerably in developing countries and so in Pakistan (Zia, 2007). Also it is accepted that the unhealthy eating habits and obesity have grown incrementally in developing and under developed parts of the world. For example, packaged food purchase in Pakistan has grown with notable percentage since recent past (Euromonitor, 2013; Euromonitor, 2014). Also, statistics reveal that chronic diseases have also increased at fast pace in the developing countries in the recent years (Nugent, 2008 and Mendis, et al. 2007). With this backdrop at work, underling study is aimed to fill the gap and add to the literature by exploring and ascertaining the relationship between the obesity and the television advertisement in specific reference to the preteen age children.

1.1. Research Objectives

The study has set forth following objectives for investigation for the theoretical and the experimental assessment of the effects of advertising on children:

1. To consider upon the impacts of television ads on vulnerable groups, especially children.
2. To identify critical impacts that lead to behavioral, attitudinal and lifestyle changes amongst the children
3. To empirically test some of the critical factors.

2. Literature Review

2.1. Growing Television Interaction

Statistics reveal that almost 100 percent of the families have at-least have one television set while the number of stations has increased in multiples. Additionally, most of the stations have airtime of 24/7; leaving no spare time for the people. With the rise in the number of television sets as well as the stations along with the airtime, the interaction of the television with the children of very younger age, say in months, has also increased (Federal Trade Commission, Centers for Disease Control and Prevention, Food and Drug Administration and U.S. Department of Agriculture, 2009 and Zimmerman, Christakis, and Meltzoff, 2007). Importantly, advertisements are integral part of the airtime (Jones, 2009). For instance, world's largest population carrying country China had reported share of television advertisement to be around 63 percent of the total expenditure done in the country (Zhang, 2011). Therefore, people watching any content on any station are bound to watch advertisement being aired during the program (Meyers, 2011 and Esser, 2010). Moreover, attention of the person watching television is also sometimes captured during the different programs (Pan, et al. 2012; and Teixeira, et al. 2010).

2.2. Organizations Capitalizing on the Opportunity to Influence Behavioral Outcome

Organizations actively capitalize this growing relationship between people mainly children and the television. Advertisements have been an important source of marketing for organization (Fan, 2013; Letona, et al. 2014). Techniques of marketing such as celebrity endorsements and premium offering result in persuasive appeals among the target audience (Gantz, Schwartz, Angelini, & Rideout, 2007). Hastings et al., (2003) in a study noted that the advertisements uses characters to exploit the likeness, trust, and respect that children and adults carry for those characters in winning the behavioral outcome (Ferguson, Contreras, and Kilburn, 2013). Another study presented by Wicks, et al. (2009) noted that advertisers build relationship with the children through visual effects which interests more to the children (Hota, and Charry, 2014). Moreover, in the current age of internet, marketers are using websites to promote their products to all age people and so children (Harris, et al. 2012). Weber, Story, & Harnack, (2006), in this context of the website being used as a platform for connecting and influencing children's behavior, are extensively using advergames techniques. Through this technique, children play games having product as a part or mainly reward for winner. Hence, different sources are implied for generating the impulse of eating among the people or specifically children (Lobstein, 2013). An important component of the advertisement includes information about the product or services. For example, Tandon, et al. (2011) revealed that though the level of information only increased level of awareness of the people instead of presumed result of reduction in the calories purchase. The results contradict to proposed rationale for increasing nutritional information content in the advertisement (Wootan, and Osborn, 2006).

2.3. Relationship of Advertisement and Obesity

The report "Food Marketing to Children and Youth" published by Institute of Medicine identified the critical role in simple two words with "Marketing works" (Harris, et al 2009). Studies have produced rationale for such relationship between advertisement and obesity. First and the direct impact is produced in the form of what is being cited as the mindless eating (Boulos, et al. 2012). For instance, Coon, et al. 2001 concluded that eating while watching television specifically during meals have increased intake of red and processed meat and have less inclination towards eating vegetables, fruits and white meat. Another study states that the children having more than five hours of connection with the airtime has higher intake of sweet beverages with less appetite for healthy food like fruits and vegetables (Boynton-Jarrett et al. 2003; and Andreyeva, Kelly, and Harris, 2011). Temple, et al. (2007) has also proved this type of response with respect to food and energy intake. Hence, overeating or mindless eating is found connected with the television. There's a lot of research work done that shows that kids eat more food and make comparatively less healthy choices when they are eating and watching TV. And secondly part of what is happening is that you are diverting yourself from indications that your body giving you about when you are full. It is quite possible that paying more attention to TV plays a role by further distracting you from anything that you're eating. This means parents need to take a proactive measure in managing the extent of television kids' watch.

Several trials are designed to reduce children's TV use have found improvements in body mass index (BMI), body fat, and other obesity-related measure. Based on this evidence, the Task Force on Community Preventive Services recommends that communities roll out behaviour-change programs aimed at curbing screen time, since there's "sufficient evidence" that such programs do help reduce screen time and improve weight (Boulos, et al. 2009)

Another dimension worth noting is about the television advertisement and its indirect influence on the society and outdoor setting (Schudson, 2013; and Shrum, et al. 2011). From the back door, television advertisement influences eating behavior through programming proliferation. For instance, cooking shows have placement of expensive products to promote certain eating habits (Ketchum, 2005; and Clifford, et al 2009) through ideal body shape or other forms of attractions in the show (Boulos, et al. 2012). Such patterns lead to eating behavior under the status co involving social standards under the influence of adverts and shows. All these studies are aligned with the theory present by Stanley Schachter which used meals times as external cues, with adults as well as children. The study noted that obese people have higher intensity to respond to the aroused hunger with change in external cues with changing eating habits than non-obese people (Jansen, et al. 2003).

2.4. Contradictory Evidences

Importantly, there are contrasting evidences for the matter of relationship of advertisement and obesity. Halford, et al. (2007) found no difference in behavior among children when exposed to advertisement related to food. Harris, Bargh, and Brownell, (2009) presented that obese and non-obese children increased their food intake when exposed to advertisement, irrespective of the type of food. Jansen, et al. (2003) and Braet, and Crombez, (2003) have claimed that it is the susceptibility level of the obese children to respond to change in external ques mainly advertisement than non-obese children. Hence, impulse is equally aroused; however, the level of response varies based on the children. The study supports the claim of advertising companies' claim. Marketing companies and claims that companies use advertisement only to influence selection of brand, not the complete eating habits.

Conclusively, all require some proliferation to control direct, indirect, physicals, and psychological influences on the human life. Dealing with this complex and controversial matter is critical. Unhealthy eating habits that are produced as a consequence of timeless interaction of children with screen, has long term consequences. Chronic illness such cancer, diabetes 2, cardiac diseases, and many others have been found a result of obesity. In addition to these physical illnesses, researches have produced evidence for the social epidemics of societal discrimination, stereotyping and other psychological issues being faced by obese people (Hu, et al. 2003 and Dunstan, et al. (2010).

3. Methodology

Systematically defined research methodology using research onion produces ground for the completion of the research within defined scope, time, and resources (Saunders, et al. 2011). Realism philosophy is adopted for this study as it shares the features of the positivism (philosophy stance of natural scientist) and the interpretivism (social science has its own interpretation unlike physical laws (Rose, Spinks, and Canhoto, 2014). The study addressing social and attempt to generalize the rule is coherently supported by Realism philosophy. For the second layer the underlying study is deductive in approach. The deductive approach implies studies which makes use of the already developed theories as a base for the conceptual ground of the study. For the underlying study based on already developed literature, following conceptual model is defined:

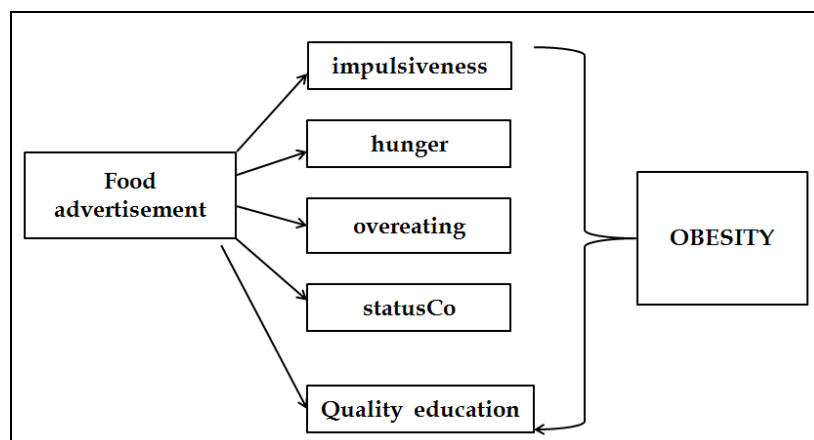


Figure 1

Research methodology offers a range of strategies for the third layer of onion, each having its own merits and demerits (Saunders, et al. 2011). The research strategy refers to the system of road map planned for the research activity is questionnaire based. The second inner most layer of the onion requires defining the time horizon. In order to assess the impact of food advertisement on the obesity levels among children the cross sections are assessed. The cross sectional analysis considers the impact of the advertisement on impulsive, hunger, overeating, status Co, and quality education on children which results in the obesity among children.

For the landscape defined under each layer of the research onion, the core of the methodology requires defining aspect data collection methods. For the data collection, the primary and secondary data is collected. For the latter type of data which is based on the information already produced for some other stated objective, scholarly articles from research journals, books and other authentic sources have been made use of. Moreover, the latter type of data which is based on the information solely collected for the underlying study and provides first hand information. The primary data is collected from the structured questionnaire developed on the basis of the conceptual ground developed from literature review and consequently developed research hypothesis. The internal consistency strength of the questionnaire is tested using Cronbach's (alpha) test (Johnson, and Christensen, 2010). The population of the study is the children in their pre-teens age which are the target audience of the advertisement. Due to resource limitation, sample size of the 250 is taken as a representative of the population.

For producing the comprehensive result from the study, the statistical technique of Multiple Linear Regression is applied. Therefore, for MLR, obesity is decided as the dependent variable. Independent variables used to measure the impact of advertisement on pre-teens obesity include impulsive, hunger, overeating, status Co, and quality of information from advertisement or education from advertisement. The statistical technique for assessing an impact on consumer behavior of advertisement is aligned with the methodology employed in the study of Niazi et al, (2011) and Zeb, Rashid and Jawed (2011). Hence, following null and alternate hypotheses are proposed:

3.1. Proposed Research Hypothesis

- H₀1: There is no significant relation b/w obesity and advertisement
- H₁1: There is positive significant relation b/w obesity and advertisement
- H₀2: There is no significant relation b/w obesity and impulsiveness
- H₁2: There is positive significant relation b/w obesity and impulsiveness
- H₀3: There is no significant relation b/w obesity and overeating.
- H₁3: There is positive significant relation b/w obesity and over-eating
- H₀4: There is no significant relation b/w obesity and hunger
- H₁4: There is positive significant relation b/w obesity and hunger
- H₀5: There is no significant relation b/w obesity and statusCo.
- H₁5: There is positive significant relation b/w obesity and status Co.
- H₀6: There is no significant relation b/w obesity and quality education.
- H₁6: There is positive significant relation b/w obesity and quality education

4. Results

The results of the study are produced using statistical software, SPSS. The Cronbach's (alpha) coefficient is 0.855 which is an indicator of high level of consistency (Table 1). The results for the Multiple Linear Regression are produced in the Table 2. According to the model summary, the underlying table explains 32.6% of the variability. TO note, the adjusted R² value is implied for assessment as number of variables were more than one. Simply stating results, the around 32.6% of the obesity is explained through the selected variables of advertisement.

Cronbach's Alpha	N of Items
.853	23

Table 1: Reliability Statistics

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.583 ^a	.340	.326	.78986

Table 2: Model Summary

The regression models are aimed to produce the best fit for the study and Anova Table is used for the purpose (Table 3). F-Test is used for assessing the statistical significance of the model. The F-test has a value 25.135 with the significance value less than threshold. This implies that model is not only best fit but is also statistically significant; hence, has predictive power. Consequently, the null hypothesis is rejected which stated that there is no relationship between the obesity is not explained by the advertisement. The statistical significance also asserts that developed relationship is not only a matter of coincidence only; instead there exist prediction ability in the model.

Model	Sum of Squares	df	Mean Square	F	Sig.	
1	Regression	78.406	5	15.681	25.135	.000 ^b
	Residual	152.227	244	.624		
	Total	230.633	249			

Table 3: ANOVA

The model being based on the combination of multiple variables; therefore, it is critical to explore and ascertain the role of each variable in the explaining the resulting dependent variable. The assessment of each variable is done using t-stats which is unstandardized coefficients divided by standard error, while the statistical significance is measured through threshold p-value.

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	
	B	Std. Error	Beta			
1	(Constant)	1.068	.266		4.013	.000
	qualityedu	-.124	.074	-.097	-1.670	.096
	overeating	.551	.299	-.462	1.845	.003
	Statusco	.319	.053	.356	6.074	.000
	impulsivness	.382	.184	.356	2.073	.039
	Hunger	.552	.222	.454	2.489	.013

Table 4: Coefficients

The coefficient table 4 concludes that each variable has statistically significant contribution in the model except quality education (which has p-value for t-stats higher than 0.05). Moreover, the alpha coefficient is also statistically significant which implies that Obesity will still prevail by 1.068 times even without advertisement. Each variable has its respective place or impact on the overall model or fitted line except quality education. Hence, the following model for explaining the obesity is produced:

$$\text{Obesity} = 1.628 + 0.551 * \text{Overeating} + 0.319 \text{ Status Co} + 0.382 * \text{Impulsive} + 0.552 \text{ Hunger} + \text{Error}$$

Importantly, the above model has eliminated the variable quality education from the model as it was not statistically significant and recommends ignoring such variable (Albright, Winston, and Zappe, 2010).

5. Discussion

The challenges of obesity are widely being driven by the growing advertisement. Specifically, the results of the underlying study, is concluded that obesity results from the advertisement which produces impulse of eating every other thing even without considering it health related consequence. The results are aligned with most of the previous literature developed in the context in past and other parts of the world; however, has little contrast too (Halford, et al. 2007).

The results have concluded that obesity will remain, irrespective of the complimentary effects generated by the advertisements. This point provides an escape route to marketers from regulatory requirement. It is aligned with the marketers' existing argument which claims that marketers only affect the brand preference and not the eating habits. However, the other factor provides evidence to the fact that such effort also generates other behavioral outcome as discussed in the work of Hastings et al., (2003).

An interesting dimension that can be explored from the study is related to the insignificant result for the quality education factor. In line with the results proposed by Tandon, et al. (2011) insignificance of the quality education can be interpreted as eating or the buying habits of unhealthy food produces more prominent outcomes as a result of indirect approach. This presumption can also be leveraged justification from the prevailing marketing techniques such as celebrity endorsement, internet and exploiting trust and likeness for some character etc (Wicks, et al. 2009; Gantz, Schwartz, Angelini, & Rideout, 2007; Moore, 2004).

The indirect impact is profound in form of generating the feeling of hunger and overeating among children. These results have mixed support and contradiction from past literature (Temple, et al. 2007). Another important aspect that can be inferred from in the results is that comparatively low influence of Status Co and the impulsiveness as compared to the hunger and the over eating. This comparison of influence of variables points to the fact that children's behavior is more affected while eating in front of the television (Boynton-Jarrett et al. 2003) as compared to the influence produced from the viewing the advertisements (Jansen, et al. 2003). This also provides an important of research for future for exploring the change in the behavior while watching TV and influence of advertisement on eating without watching TV during eating. Also these provide bases for the regulatory measure to be introduced to control the content that promotes the behavior of overeating among children without delays to control the growing obesity.

6. Conclusion and Limitations

Growth in obesity is the result of many factors and advertisement is found to be one of them. It has been concluded that children behavior in Pakistan are widely affected for being increasingly targeted by the advertisement of food or specifically unhealthy food. From the results, it is also established the human behavior receives from indirect influence in form of likeness as compared to the direct influence through information provision. Hence, subliminal messages through advertisement needs to proliferated comprehensively.

The study also has certain limitations too mainly for the fact of limited resources. First, the study is conducted in the metropolitan city of Karachi in Pakistan. Though the city has good mix of the people from across the world; however, their certainly exist some deviation from other cities. Hence, cannot be accounted for the overall relationship between factors across Pakistan.

Another limitation posed to the study is that trends of eating habits constantly undergo change, as it is recently growing fast food eating. Change in trends will change the advertisements and so does its impact. In such case, above results may not sustain the reliability.

7. References

- i. Albright, S. C. W. C., Winston, W., & Zappe, C. (2010). *Data analysis and decision making*. Cengage Learning.
- ii. Andreyeva, T., Kelly, I. R., & Harris, J. L. (2011). Exposure to food advertising on television: associations with children's fast food and soft drink consumption and obesity. *Economics & Human Biology*, 9(3), 221-233.
- iii. Black, G. S., & Watson, K. (2013). The impact of advertising disclaimers (fine print) on brand attitudes. *Journal of Brand Management*, 20(4), 298-308.
- iv. Blades, M., Oates, C., & Li, S. (2013). Children's recognition of advertisements on television and on Web pages. *Appetite*, 62, 190-193.
- v. Boulos, R., Vikre, E. K., Oppenheimer, S., Chang, H., & Kanarek, R. B. (2012). ObesiTV: how television is influencing the obesity epidemic. *Physiology & behavior*, 107(1), 146-153.
- vi. Boynton-Jarrett, R., Thomas, T. N., Peterson, K. E., Wiecha, J., Sobol, A. M., & Gortmaker, S. L. (2003). Impact of television viewing patterns on fruit and vegetable consumption among adolescents. *Pediatrics*, 112(6), 1321-1326.
- vii. Braet, C., & Crombez, G. (2003). Cognitive interference due to food cues in childhood obesity. *Journal of Clinical Child and Adolescent Psychology*, 32(1), 32-39.
- viii. Christopher, M., Payne, A., & Ballantyne, D. (2013). *Relationship Marketing*. Routledge.
- ix. Clifford, D., Anderson, J., Auld, G., & Champ, J. (2009). Good Grubbin': impact of a TV cooking show for college students living off campus. *Journal of nutrition education and behavior*, 41(3), 194-200.
- x. Connell, P. M., Brucks, M., & Nielsen, J. H. (2014). How Childhood Advertising Exposure Can Create Biased Product Evaluations That Persist into Adulthood. *Journal of Consumer Research*, 41(1), 119-134.
- xi. Coon, K. A., Goldberg, J., Rogers, B. L., & Tucker, K. L. (2001). Relationships between use of television during meals and children's food consumption patterns. *Pediatrics*, 107(1), e7-e7.
- xii. Craswell, R. (2013). Static Versus Dynamic Disclosures, and How Not to Judge Their Success or Failure. *Wash. L. Rev.*, 88, 333.
- xiii. Dunstan, D. W., Barr, E. L. M., Healy, G. N., Salmon, J., Shaw, J. E., Balkau, B., Magliano, D.J., Caameron, A.J., Zimmet, P.Z. & Owen, N. (2010). Television viewing time and mortality the australian diabetes, obesity and lifestyle study (AusDiab). *Circulation*, 121(3), 384-391.
- xiv. Esser, A. (2010). Television formats: primetime staple, global market. *Popular Communication*, 8(4), 273-292.
- xv. Euromonitor. (2013). Frozen Processed Food in Pakistan. Retrieved December 20, 2014 from <<http://www.euromonitor.com/frozen-processed-food-in-pakistan/report>>
- xvi. Euromonitor. (2014). Sports and Energy Drinks in Pakistan. Retrieved December 20, 2014 from <<http://www.euromonitor.com/sports-and-energy-drinks-in-pakistan/report>>
- xvii. Fan, S. W. (2013). Effects of Cartoon Characters Food Package on Children's Taste Preferences.
- xviii. Federal Trade Commission, Centers For Disease Control And Prevention, Food And Drug Administration And U.S. Department Of Agriculture. (2009, December). Interagency Working Group On Food Marketed To Children Tentative Proposed Nutrition Standards. Retrieved December 20, 2014 from <<http://cspinet.org/new/pdf/ftcnewstandards.pdf>>
- xix. Ferguson, C. J., Contreras, S., & Kilburn, M. (2013). Advertising and Fictional Media Effects on Healthy Eating Choices in Early and Later Childhood. *American Psychology Association*. 3(3), 164-173.
- xx. Ferguson, C.J., Mu~noz, M.E. and Medranom M.R. (2012). Advertising Influences on Young Children's Food Choices and Parental Influence. *The Journal of Pediatrics*.160(3).452-455.
- xxi. Ghimire, N., & Rao, A. (2013). Comparative evaluation of the influence of television advertisements on children and caries prevalence. *Global health action*, 6.
- xxii. Halford, J. C., Boyland, E. J., Hughes, G., Oliveira, L. P., & Dovey, T. M. (2007). Beyond-brand effect of television (TV) food advertisements/commercials on caloric intake and food choice of 5-7-year-old children. *Appetite*, 49(1), 263-267.
- xxiii. Haroon, M., Queshi, T. M., & Nisar, M. (2010). Does the Food Advertisement on Television Have the Impact on Children's Food Purchasing Behavior? A Study Based on Pakistan Food Advertisement. *International Journal of Business and Management*, 6(1), p283.
- xxiv. Harris, J. L., Bargh, J. A., & Brownell, K. D. (2009). Priming effects of television food advertising on eating behavior. *Health Psychology*, 28(4), 404.
- xxv. Harris, J. L., Pomeranz, J. L., Lobstein, T., & Brownell, K. D. (2009). A crisis in the marketplace: how food marketing contributes to childhood obesity and what can be done. *Annual review of public health*, 30, 211-225.
- xxvi. Harris, J. L., Speers, S. E., Schwartz, M. B., & Brownell, K. D. (2012). US food company branded advergames on the internet: children's exposure and effects on snack consumption. *Journal of Children and Media*, 6(1), 51-68.
- xxvii. Hota, M., & Charry, K. (2014). The impact of visual and child-oriented packaging elements versus information on children's purchase influence across various age groups. *International Journal of Retail & Distribution Management*, 42(11/12), 1069-1082.
- xxviii. Hu, F. B., Li, T. Y., Colditz, G. A., Willett, W. C., & Manson, J. E. (2003). Television watching and other sedentary behaviors in relation to risk of obesity and type 2 diabetes mellitus in women. *Jama*, 289(14), 1785-1791.
- xxix. Huston, A. C. (1992). *Big world, small screen: The role of television in American society*. U of Nebraska Press.

- xxx. Jansen, A., Theunissen, N., Slechten, K., Nederkoorn, C., Boon, B., Mulkens, S., & Roefs, A. (2003). Overweight children overeat after exposure to food cues. *Eating behaviors*, 4(2), 197-209.
- xxxi. Johnson, R. R. B., & Christensen, L. B. (2010). *Educational research: Quantitative, qualitative, and mixed approaches*. Sage Publications.
- xxxii. Jones, E. (2009). Network television streaming technologies and the shifting television social sphere. *Media in Transition*, 6.
- xxxiii. Ketchum, C. (2005). The essence of cooking shows: How the food network constructs consumer fantasies. *Journal of Communication Inquiry*, 29(3), 217-234.
- xxxiv. Kiesel, K., & Villas-Boas, S. B. (2013). Can information costs affect consumer choice? Nutritional labels in a supermarket experiment. *International Journal of Industrial Organization*, 31(2), 153-163.
- xxxv. King, L., Hebden, L., Grunseit, A., Kelly, B., & Chapman, K. (2013). Building the case for independent monitoring of food advertising on Australian television. *Public health nutrition*, 16(12), 2249-2254.
- xxxvi. Letona, P., Chacon, V., Roberto, C., & Barnoya, J. (2014, March). Effects of licensed characters on children's taste and snack preferences in Guatemala, a low/middle income country. *International Journal of Obesity*.
- xxxvii. Lobstein, T. (2013). Child Obesity and the Junk Food Marketeers. *Exploiting Childhood: How Fast Food, Material Obsession and Porn Culture are Creating New Forms of Child Abuse*, 49.
- xxxviii. Mendis, S., Fukino, K., Cameron, A., Laing, R., Filipe Jr, A., Khatib, O., Leowski, J. & Ewen, M. (2007). The availability and affordability of selected essential medicines for chronic diseases in six low-and middle-income countries. *Bulletin of the world health organization*, 85(4), 279-288.
- xxxix. Meyers, C. B. (2011). The problems with sponsorship in us broadcasting, 1930s-1950s: perspectives from the advertising industry. *Historical Journal of Film, Radio and Television*, 31(3), 355-372.
- xl. Moore, E. S. (2004). Children and the changing world of advertising. *Journal of business Ethics*, 52(2), 161-167.
- xli. Mushtaq, M. U., Gull, S., Mushtaq, K., Shahid, U., Shad, M. A., & Akram, J. (2011). Dietary behaviors, physical activity and sedentary lifestyle associated with overweight and obesity, and their socio-demographic correlates, among Pakistani primary school children. *Int J Behav Nutr Phys Act*, 8(1), 130.
- xl. Nanan, D. J. (2002). The obesity pandemic-implications for Pakistan. *JPMA*, 52(342).
- xl. Niaz, G. S. K., Siddiqui, J., Shah, B. A., & Hunjra, A. I. (2011). Effective advertising and its influence on consumer buying behavior.
- xliv. Nugent, R. (2008). Chronic diseases in developing countries. *Annals of the New York Academy of Sciences*, 1136(1), 70-79.
- xl. Ogden, C.L., Carroll, M.D., Kit, B.K., and Flegal, K.M. (2014). Prevalence of Childhood and Adult Obesity in the United States, 2011-2012. *JAMA*. 311(8):806-814.
- xlvi. Pan, Y. F., Sun, J., Chen, S., He, Y., Xia, Y., Sun, J., & Naoi, S. (2012, October). Mobile-based advertisement information retrieval from images and websites. In *Proceedings of the 20th ACM international conference on Multimedia* (pp. 921-924). ACM.
- xlvii. Qi, S. (2013). The impact of advertising regulation on industry: The cigarette advertising ban of 1971. *The RAND Journal of Economics*, 44(2), 215-248.
- xlviii. Roberto, C. A., & Khandpur, N. (2014). Improving the design of nutrition labels to promote healthier food choices and reasonable portion sizes. *International Journal of Obesity*, 38, S25-S33.
- xlix. Roberts, M., Pettigrew, S., Chapman, K., Quester, P., & Miller, C. (2014). Children's exposure to food advertising: An analysis of the effectiveness of self-regulatory codes in Australia. *Nutrition & Dietetics*, 71(1), 35-40.
- l. Rose, S., Spinks, N., & Canhoto, A. I. (2014). *Management Research: Applying the Principles*. Routledge.
- li. Saunders, M. N., Saunders, M., Lewis, P., & Thornhill, A. (2011). *Research methods for business students*, 5/e. Pearson Education India.
- lii. Schudson, M. (2013). *Advertising, The Uneasy Persuasion (RLE Advertising): Its Dubious Impact on American Society*. Routledge.
- liii. Schudson, M. (2013). *Advertising, The Uneasy Persuasion (RLE Advertising): Its Dubious Impact on American Society*. Routledge.
- liv. Schudson, M. (2013). *Advertising, The Uneasy Persuasion (RLE Advertising): Its Dubious Impact on American Society*. Routledge.
- lv. Shrum, L. J., Lee, J., Burroughs, J. E., & Rindfleisch, A. (2011). An Online Process Model of Second-Order Cultivation Effects: How Television Cultivates Materialism and Its Consequences for Life Satisfaction. *Human Communication Research*, 37(1), 34-57.
- lvi. Shutts, K., Kinzler, K. D., & DeJesus, J. M. (2013). Understanding infants' and children's social learning about foods: Previous research and new prospects. *Developmental psychology*, 49(3), 419.
- lvii. Simola, J., Hyönä, J., & Kuisma, J. (2014). Perception of visual advertising in different media: from attention to distraction, persuasion, preference and memory. *Frontiers in psychology*, 5, 1208.
- lviii. Statista. (2014a). Average daily TV viewing time per person in selected countries in 2013 (in minutes). Retrieved December 20, 2014 from < <http://www.statista.com/statistics/276748/average-daily-tv-viewing-time-per-person-in-selected-countries/> >
- lix. Statista. (2014b). Number of TV households in selected countries worldwide in 2020 (in 1,000s). Retrieved December 20, 2014 from < <http://www.statista.com/statistics/324587/number-tv-households-countries/> >

- ix. Tandon, P. S., Zhou, C., Chan, N. L., Lozano, P., Couch, S. C., Glanz, K., Krieger, J. and Saelens, B. E. (2011). The impact of menu labeling on fast-food purchases for children and parents. *American journal of preventive medicine*, 41(4), 434-438.
- lxi. Teixeira, C. A., Melo, E. L., Cattelan, R. G., & Maria da Graça, C. P. (2010). Taking advantage of contextualized interactions while users watch TV. *Multimedia Tools and Applications*, 50(3), 587-607.
- lxii. Temple, J. L., Giacomelli, A. M., Kent, K. M., Roemmich, J. N., & Epstein, L. H. (2007). Television watching increases motivated responding for food and energy intake in children. *The American Journal of Clinical Nutrition*, 85(2), 355-361.
- lxiii. Weber, K., Story, M., & Harnack, L. (2006). Internet food marketing strategies aimed at children and adolescents: a content analysis of food and beverage brand web sites. *Journal of the American Dietetic Association*, 106(9), 1463-1466.
- lxiv. Wicks, J., Warren, R., Fosu, I., & Wicks, R. H. (2009). Dual-modality disclaimers, emotional appeals, and production techniques in food advertising airing during programs rated for children. *Journal of Advertising*, 38, 93-105
- lxv. Wootan, M. G., & Osborn, M. (2006). Availability of nutrition information from chain restaurants in the United States. *American Journal of Preventive Medicine*, 30(3), 266-268.
- lxvi. Xu, J., Bao, Y., & Landry, T. D. (2014). Brand Positioning through Print Advertising. *Brand Management in Emerging Markets: Theories and Practice*, 155.
- lxvii. Zeb, H., Rashid, K., & Javeed, M. B. (2011). Influence of Brands on Female Consumer's Buying Behavior in Pakistan. *International Journal of Trade, Economics and Finance*, 2(3), 225-231.
- lxviii. Zhang, L. (2011). Advertising in a New Age of Media: The rise of digital media will require traditional media platforms to re-strategize and will open new opportunities for advertisers. *China Business Review*. Retrieved December 20, 2014 from <<http://www.chinabusinessreview.com/advertising-in-a-new-age-of-media/>>
- lxix. Zia, A. (2007). Effects of cable television on women in Pakistan: a comparative study of heavy and light viewers in Lahore (Doctoral dissertation, LAHORE COLLEGE FOR WOMEN UNIVERSITY).
- lxx. Zimmerman, F. J., Christakis, D. A., & Meltzoff, A. N. (2007). Television and DVD/video viewing in children younger than 2 years. *Archives of Pediatrics & Adolescent Medicine*, 161(5), 473-479.
- lxxi. Zimmerman, F. J., Christakis, D. A., & Meltzoff, A. N. (2007). Television and DVD/video viewing in children younger than 2 years. *Archives of Pediatrics & Adolescent Medicine*, 161(5), 473-479.