

## Teenagers' Understanding and Influence of Media Content on their Diet and Health-Related Behaviour

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### Abstract

**Introduction:** Mass media plays a vital role in health communication. The target audience of mass media ranges from children, to geriatric population. Mass media often gives least priority to certain science topics for a variety of reasons, mostly to protect commercial interests. In this context, the present study is attempted to elicit teenagers understanding of diet and health-related content through mass media.

**Objectives:** To study the influence of mass media content on teenagers. To analyze how teenagers are influenced by media messages on their diet and health-related behaviours.

**Methodology:** Cross-sectional method with stratified random sampling consisting of 3 types of economic groups viz., lower-income, middle-income and higher income.

**Results and conclusion:** Media content on diet and health-related behaviour motivates teenagers, particularly those messages laced with celebrities' endorsements. Commercial food and beverage products endorsed by celebrities are being consumed by majority of teenagers. Majority teenagers say that, they tend to take one or other kind of physical fitness activity whenever they see a fit body of film actors/actress and sportspersons in media.

**Keywords:** Teenagers; Mass media; Celebrities; Diet; Health-related behaviour (HRB)

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### Introduction

Mass media plays a crucial role in health communication by disseminating information and knowledge on various aspects relevant to the target groups [1]. It should also be considered as a tool that may influence behaviour of the community [2,3]. Dissemination of information about medicine, public health and nutrition science through mass media is an area of concern to many health and social scientists [4]. Mass media campaigns influence to prevent negative behaviour and thus help in bringing out positive health-related behaviours across large populations [5]. Children are most vulnerable to the media influence as the celebrities endorse and promote various processed food and beverages through different media channels.

There are several studies were focused on the influence of television media on learning behaviour among children and

adolescents [6-10]. Among them, "Adolescents are vigorous users of the information broadcast in media" [11]. What if youth get media messages that tell them, "people will like you more if you have the perfect body" or "being perfect makes people like you"? How female teenagers would interpret these messages that the media is projecting?

Another content analysis of 1602 food advertisements in four popular television channels reveals that food manufacturers' use two different strategies to target children and adults as well [12]. Telecast of advertisements about chocolates and sweet products were highest number of times followed by the advertisements on health/energy drinks and grain-based products. Advertisements of chocolates/sweets, biscuits/cookies and potato chips were mostly appeared in the children's channel compared to mainstream, which clearly indicates that the manufacturers of these products had targeted children. Contrary to this, 63%

of advertisements on health/ energy drinks were seen in the mainstream channel, which consists of mostly adults including house-wives or parents. As the cost of the health drinks were high compared to the chocolates and the decision to purchase these products lies only on parents, health/ energy drinks were mostly advertised in the mainstream channel.

All most all the advertisements on health/ energy drinks boosted the parents, irrespective of their socio-economic status, to feel as inevitable for the growth of their children. The same was in the case with advertisements on grain/fruit-based products. About 74% of the advertisements for these products were seen in the mainstream channels. "All the advertisement of potato crisps during the sample week appeared only in kids channel and all the advertisements on tea/coffee was seen only on mainstream channels which can be perceived as food advertisers' strategies based on symbolical division of food habits between children and adults. The majority of food advertisements shown in both children and mainstream channels do not foster good health despite the health claims made." With this backdrop, the present study was attempted to elicit teenagers understanding of diet and health-related content that appears in mass media.

## Objectives

Based on the research questions *viz.*, what kind of content teenagers mostly watch in media? Do they try to follow the suggestions of the content? Do they consume the food products advertised in the media? If yes, what are the factors that make them follow? The following objectives were framed for the study:

- To study the influence of mass media content on teenagers.
- To analyze how teenagers are influenced by media messages on their diet and health-related behaviours.

## Methodology

This was a cross-sectional study with stratified random sampling procedure. Three types of economic groups' *viz.*, lower-economic strata (poor families), middle-economic strata (middle-class families) and higher economic strata (rich-class families) were considered for the study as follows:

- 1) Government schools & colleges (for teenagers of lower-economic strata: **LES**)
- 2) Private schools & colleges (for teenagers of middle-economic strata: **MES**)
- 3) International/corporate schools & colleges (for teenagers of higher-economic strata: **HES**).

Survey method was used with a self-administered questionnaire as a tool for data collection.

## Questionnaire components

The following sub-topics/ questions were incorporated in the questionnaire with thrust on knowledge and practice of teenagers.

(a) Do teenagers watch advertisements on food and beverages endorsed by celebrities?

(b) If yes, do teenagers consume those products of food/ beverages?

(c) Based on celebrity endorsement, what types of food/ beverages are consumed by teenagers?

(d) Teenagers' perception on food/ beverages endorsed by celebrities.

(e) When do teenagers feel motivated to do physical exercise?

(f) Factors motivating teenagers to do physical exercise.

(g) Whom do teenagers imitate in physical fitness?

## Calculation of sample

In India, 70% of children are exposed to media with 10% relative precision (NFHS- 4 Report, 2014-15). Keeping this data in view, the required sample size for this study was calculated as 155 teenagers per group. Considering 3 types of economic groups for this study (*viz.*, lower (LES), middle (MES) and higher (HES), the total sample size was rounded as 470 (155 x 3=465). The study was conducted in Greater Hyderabad Municipal Corporation (GHMC) city limits of Telangana state, India.

Based on the lists of high schools and junior colleges provided by the District Educational Office, Hyderabad and Board of Intermediate Education, respectively, 21 educational institutions (high schools and junior colleges) were selected randomly to draw the required samples of 465 students of classes IX, X, XI and XII. Adequate care was taken to obtain equal number of girls and boys.

Accordingly, a total of 536 students from the above educational institutions were administered the questionnaire. Of them 19 questionnaires were found as incomplete and remaining 517 were found to be valid for analysis. These valid, filled-in questionnaires include 183 students of corporate/ international institutions; 158 students of private institutions; and 176 students of government institutions. Of the total 517 subjects, 253 were boys and 264 were girls. This study design, including calculation of sample, was validated by the Institute's Statistician. Pre-test of the questionnaire was conducted before administering the same to the subjects/ respondents.

## Results and Discussion

Among the diet and health related information appeared in media, commercial food advertisements are mostly watched by teenagers. Most of these products are seen as endorsed by celebrities, particularly by film stars. Majority of advertisements are even laced with one or another adventurous feat by the celebrity, linked with consumption of that particular eatable or drink, say for example, soft drinks.

About 89% teenagers reported as watched commercial food and beverage advertisements in media (**Table 1**). Of them, girls (94%) are more in watching food / beverage advertisements endorsed by celebrities, compared to boys (84%). Girls (96%) of elite

families showed more interest in watching celebrity endorsed food/ beverage advertisements, followed by girls (93%) of middle-economic strata and girls (92%) of lower-economic strata. But, among boys, only of middle-economic strata (90%) are near in percentage of girls in watching food/ beverage advertisements in media. Comparatively, boys (82%) of higher-economic and boys (81%) of lower-economic families are less in watching beverage/ food-related advertisements in media.

These whopping percentages of teenagers watching food/ beverage advertisements correlates the findings of the earlier study conducted by Maheshwar et al., [13]. "Advertisement of commercial food products in media is ubiquitous. It may be television, newspapers or even on the Internet, advertisements on commercial eatables and drinks are published or aired very frequently." In the present study, commercial food and beverage products endorsed by celebrities were popularly consumed by 61% of the teenagers (Table 2). Of them, again girls (67%) stand more in percentage in comparison with boys (56%).

A significant observation of this factor is that, in poor families, a wide variation is seen between boys and girls in accepting celebrity endorsed commercial foods. About 74% of teenage girls in poor families consumed commercial food products endorsed by celebrities, but in the same category (strata) families, boys only 53% consumed celebrity endorsed food products. This much of wide variation was not observed between the genders of other two strata viz., middle and higher income families.

### Food/ beverage preferences among boys and girls

Of all the commercial food and beverage products endorsed

by celebrities, soft drinks were the most popular among the teenagers. Almost two-third of teenagers (64.5) consumed or preferred to have soft drinks endorsed by celebrities (Table 3). These figures corroborates findings of a previous study titled "The 30-Second Effect: An Experiment Revealing the Impact of Television Commercials on Food Preferences of Pre-school children" [14]. This earlier study observed that even brief exposure from advertising can influence food preferences and looked into how embedded commercials in a popular cartoon influence children on food preferences.

In the current study, energy drinks and different kinds of junk foods were also popular among the list of celebrity endorsed food items. Among 50% of the teenagers, energy drinks was popular and 47% consumed pizza/ burger/ chocolates endorsed by celebrities. Noodles and potato chips (44%) too had their significant share of popularity among the list of celebrity endorsed food items. This trend reiterates the observations of previous studies that "mass media often ignores or gives little emphasis to certain health topics for a variety of reasons, mostly to protect commercial interests" (Figure 1) [15,16].

In consumption of celebrities' endorsed soft drinks, percentage of boys (67%) was more than the girls (62%); and in consumption of 'pizza/ burger/ chocolates' it was observed as *vice versa* (boys 43% and girls 50%). A significant finding is that, (except in soft drinks) there was no much difference in percentage of girls between different economic-groups, but among boys a wide variation was evident between lower-income families and middle and high-income families.

**Table 1:** Percentage of teenagers who watches celebrities' endorsement of food & beverage products in mass media.

S.No.	Options	Total % of Boys+ Girls N=517	Boys %				Girls %			
			Corp/ Intl n=87	Pvt. n=81	Govt. n=85	% of Boys n=253	Corp/ Intl n=96	Pvt. n=77	Govt. n=91	% of Girls n=264
1	Yes	89	82	90	81	84	96	93	92	94
2	No	11	18	10	19	16	4	7	8	6

**Table 2:** Percentages of teenagers consumed commercial food products endorsed by celebrities.

S.No.	Options	Total % of Boys+ Girls N=517	Boys %				Girls %			
			Corp/ Intl n=87	Pvt. n=81	Govt. n=85	% of Boys n=253	Corp/ Intl n=96	Pvt. n=77	Govt. n=91	% of Girls n=264
1	Yes	61	56	59	53	56	61	66	74	67
2	No	39	44	41	47	44	39	34	26	33

**Table 3:** Types of commercial food products consumed by teenagers based on celebrity endorsement.

S.No.	Options	Total % of Boys+ Girls N=517	Boys %				Girls %			
			Corp/ Intl n=87	Pvt. n=81	Govt. n=85	% of Boys n=253	Corp/ Intl n=96	Pvt. n=77	Govt. n=91	% of Girls n=264
1	Soft drinks	64.5	65	69	67	67	60	70	57	62
2	Energy drinks	50	50	59	41	50	51	47	52	50
3	Pizza/Burger/ chocolates	47	48	51	30	43	55	47	47	50
4	Noodles/ Potato chips	44	45	48	38	43	47	38	50	45
4	Home-made	14.5	13	20	13	15	20	9	11	14

In consumption of energy drinks, percentage of boys (41%) of low-income families was less compared to boys of high (50%) and middle-income (59%) families. Pizza/ burger/ chocolates are also consumed very less by boys (30%) of low-income families in comparison with boys of high (48%) and middle-income (51%) families. Similar variation appears among boys of lower-income families and others in consumption of 'noodles/potato chips'.

Only 20% of teenagers stated that commercial products endorsed by celebrities are good for health (Table 4). Girls 82% and boys 71% agree that the food and beverages endorsed by celebrities are not good for health. These findings correlate with the conclusion of a previous study by Adams (1992) [17] that "news messages on health aspects including nutrition is driven by rarity, novelty and commercial viability that the concern about the relative health risks."

In the current study, overall 77% teenagers feel that these products are undesirable for good health and only 20% teenagers mentioned these products as good for health. Most of the girls, particularly from high-income (92%) and middle income (90%) families do not agree that foods endorsed by celebrities' are healthier. But, this percentage in girls of low-income families stands at 67%, which was significantly lower compared to girls of the other strata. About 25% girls of low-income families felt that celebrities' endorsed food and beverages are good for health as against only 8% girls of high and middle-income families. This much of wide variation does not appear among boys of different strata's. Among boys, 73% in high-income and 69% each in middle and low-income families feel celebrities' endorsed commercial food and beverages are not good for health.

### Celebrities' influence on physical activity

Celebrity film stars stand as prime motivators for teenagers to do physical exercise. About 44% teenagers stated that, they tend to take one or other kind of physical fitness activity whenever they see a fit body of film actors/ actress (Table 5). Boys (48%) are more motivated by film stars compared with girls (40%). There was no much variation between percentages of different strata's of boys in taking film stars as inspiration for physical exercise. But, among females, percentage of girls of high (45%) and middle-income (47%) families was significantly higher than girls (28%) of low-income families.

Celebrities from sports world stand next to film stars in inspiring teenagers towards taking up physical exercises. About 34% teenagers were motivated whenever they see sports persons exercising. Of them, girls (37%) are more compared to boys (31%). Among females, though girls (42%) of high-income and girls (38%) of middle-income families are more than the girls (33%) of low-income families, unlike film stars, sports persons motivate more percentage of girls of low-income families. Among boys, only a little variation is evident in percentages of different strata's.

This trend of the current study invalidates findings of earlier studies [18,19] that "the mass media continues to promote excessively thin body images and plays a negative role in the development of bad eating habits among girls.

Teenagers between the ages of 9-14 who made effort to look like media figures were more likely to worry about their weight and were prone to chronic dieting (Figure 2).

In the current study, fitness related content in print media

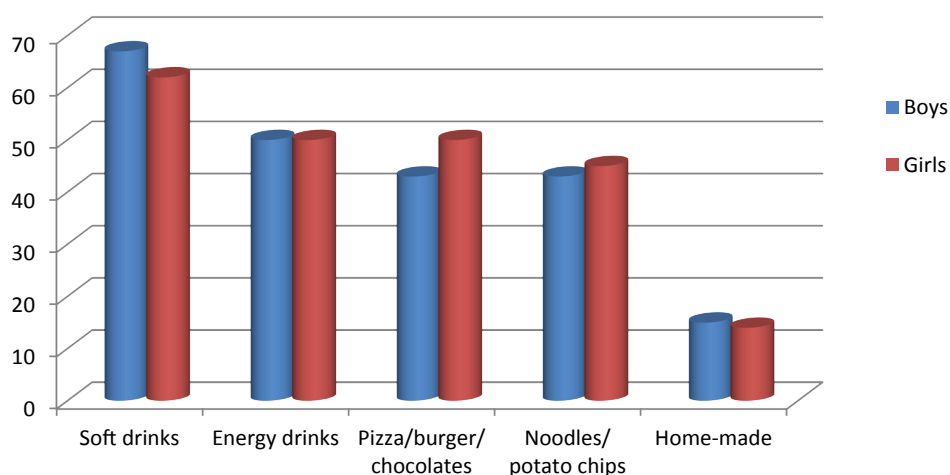


Figure 1 Comparison of teenagers consumed food products endorsed by celebrities.

Table 4: Are commercial food products endorsed by celebrities good for health?

S.No.	Options	Total % of Boys+ Girls N=517	Boys %				Girls %			
			Corp/ Intl n=87	Pvt. n=81	Govt. n=85	% of Boys n=253	Corp/ Intl n=96	Pvt. n=77	Govt. n=91	% of Girls n=264
1	Yes	20	19	30	26	25	8	8	25	14
2	No	77	73	69	69	71	92	90	67	82

motivates more percentage of girls (36%) compared to boys (20%). Particularly girls (44%) of low-economic families are highly motivated by the content about exercise, regimen and fitness that appears in print media. One of the cause for this could be, as girls of low-income families use print media mostly compared to other media as revealed in earlier studies. Physical fitness programmes in television motivated 23.5% of teenagers towards doing one or other kind of physical exercises. Of all the strata's, girls (30%) of low-income families are mostly inspire after watching television programmes on fitness. Advertisements on physical fitness in print media also inspired significant percentage (17%) of teenagers in taking up physical and fitness exercises. But, it was observed that, boys (8%) of low-income families and girls (10%) of middle-income families were less in percentage compared with other strata's.

From health-point-of-view, a question on who do teenagers like to follow has elicited mixed responses from boys and girls (Table 6). From health point of view, majority of boys inclined to imitate sports stars (62%), followed by film actors (38%), friends (33%) and elders in family (33%). On the other-side, majority of girls liked to imitate their family elders (45%), followed by sports stars (36%), film actors (32%), and friends (31%) (Figure 3).

A whopping 62% boys mentioned sports stars as their icons from health-point-of-view. More than sixty-percent of boys from each of the three strata have quoted sports stars as their idols to imitate in healthy terms. But, among girls, only 36% stated sports stars as the persons they like to follow from health-point-of-view. Elders in family remain as the top health models to girls of all the strata's. Of them, girls (49%) from low-income families are more compared with girls of high (44%) and girls of (40%) middle income families. Among boys, only 33% like to imitate their family elders in healthy looks, of them only boys of middle-income (41%) are more compared to boys (25%) of low and (34%) high-income families.

The statistics of current study substantiates findings of an earlier study that "nutrient content claims and sports celebrity endorsements on food packs influence children and adults to prefer Energy-Dense and Nutrient-Poor (EDNP) products" [20]. This previous study revealed that "children were more likely to choose EDNP products featuring nutrient content claims and sports celebrity endorsements". This study concluded as "nutrient content claims and sports celebrity endorsements influence adolescent children's preferences towards EDNP food products displaying them".

Table 5: How often do teenagers feel motivated to do physical exercise?

S.No.	Options	Total % of Boys+ Girls N=517	Boys %				Girls %			
			Corp/ Intl n=87	Pvt. n=81	Govt. n=85	% of Boys n=253	Corp/ Intl n=96	Pvt. n=77	Govt. n=91	% of Girls n=264
1	Whenever sees a fit body of actors/ actresses	44	48	52	45	48	45	47	28	40
2	Whenever watches fitness programmes in television	23.5	19	27	18	21	21	27	30	26
3	Advertisements in newspapers/ magazines	17	19	28	8	18	16	10	22	16
4	While reading about exercise regimen and fitness	28	22	20	19	20	34	28	44	36
5	Whenever sees sports persons exercising	34	32	27	33	31	42	38	33	37
6	Others	13.5	17	13	14	15	17	13	8	12

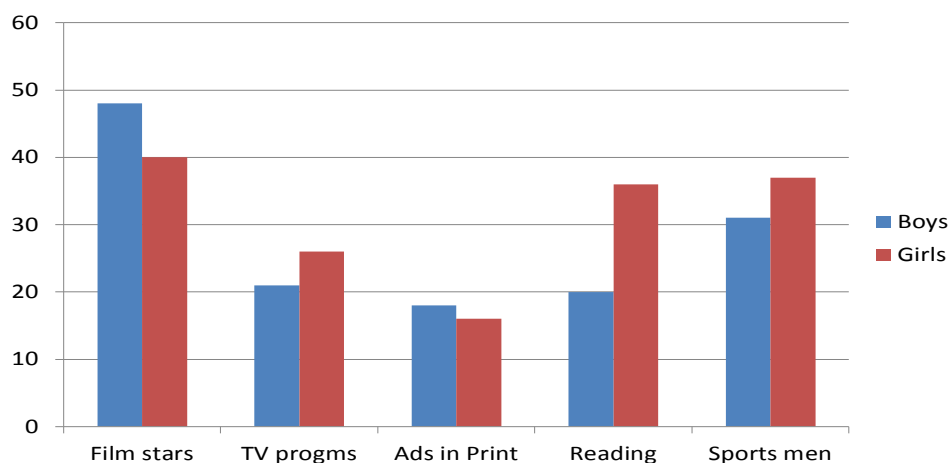


Figure 2 Factors motivating teenagers to do physical exercise.

In the current study, film stars are the prime motivators to teenagers (**Table 5**) to take-up physical exercise, but from health point of view, film stars take only second place (for boys) and third place (for girls) to be imitated (**Table 6**). Among boys, 41% in high-income families; 42% in middle income families; and only 31% in low-income families like to imitate film stars from health point of view. Among girls, only from middle income families (39%) like to follow film actors. Percentage of girls in high and low-income families remains less than thirty percent.

Little less than one-third of teenagers try to be as their peers in healthy related matters. Of them, girls of low-income families stand at 44%, which was the highest among all the strata's of both the genders. But, the percentage of girls in high and middle-income families' stands as 26% and 21% respectively, which is lowest among all the strata's of both the genders. Television celebrities are nowhere near among teenagers' as they do not imitate them from a health standpoint. A uniform feature appears in percentage of boys (8%) of high-income families and girls (8%) of low-income families, who like to follow television celebrities.

Of all the commercial food and beverage products endorsed by celebrities, soft drinks were the most popular among the teenagers. Almost two-third of teenagers consumed or preferred to have soft drinks endorsed by celebrities. Energy drinks, pizza/ burger/ chocolates endorsed by celebrities had their significant share of popularity among the list of celebrity endorsed food items. The results of this study correlates with the findings of previous studies "professionals in varied disciplines of health

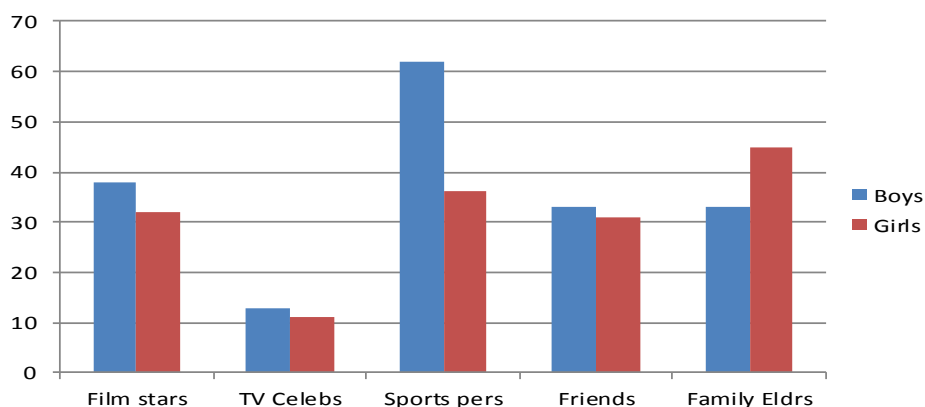
are at sea to understand the diverse nature of mass media as the target audience range from children to adults" [21]. The messages (or advertisements) that appear as diet and health-related content in mass media are a matter of debate and a bone of contention particularly, in Indian print [22] and electronic media [14].

## Conclusion

Media content on diet and health-related behaviour motivates teenagers only those messages laced with celebrities' endorsements. Commercial food and beverage products endorsed by celebrities are being consumed by majority of teenagers. Of them, girls are more in comparison with boys. A significant observation is that, a whopping three-fourth of teenage girls in poor families are highly influenced and consumed commercial food products endorsed by celebrities. Similarly, film stars stand as prime motivators for teenagers to do physical exercise. Sportspersons stands next to film stars in inspiring teenagers towards taking up physical exercises. Majority teenagers say that, they tend to take one or other kind of physical fitness activity whenever they see a fit body of film actors/ actress and sportspersons. From health point of view, majority of boys like to imitate sports stars. In addition, film actors, friends and elders in family also motivate boys in healthier habits like physical exercises. On the other-side, almost half-of-the girls like to imitate their family elders in following healthy habits. About one-third of girls are motivated by sports stars, film actors, and friends in taking up physical exercises. Hence, mass

**Table 6:** From health-point-of-view, whom do teenagers like to follow.

S.No.	Options	Total % of Boys+ Girls N=517	Boys %				Girls %			
			Corp/ Intl n=87	Pvt. n=81	Govt. n=85	% of Boys n=253	Corp/ Intl n=96	Pvt. n=77	Govt. n=91	% of Girls n=264
1	Film actors/ actresses	35	41	42	31	38	29	39	28	32
2	Television celebrities	12	8	15	15	13	16	10	8	11
3	Sports persons	49	60	65	60	62	43	39	27	36
4	Friends/Peers	32	29	34	38	33	26	21	44	31
5	Elders in family/ Relatives	39	34	41	25	33	44	40	49	45
6	Others	8	8	9	6	7	11	10	4	9



**Figure 3** Whom do teenagers follow for good health?

media in association with celebrities can play a substantial role in promotion of healthy eating habits and physical activity.

### Suggestions for future research

In order to facilitate the use of mass media for health promotion and disease prevention, the current study offers, to investigate and define the health knowledge and attitudes of teenagers

and their information needs to accept or reject advice about health. Information about this should be made available to those designing media-based health promotion campaigns. The study also suggests examining the media health messages adolescents receive and assess its impact. What do teenagers learn about health from television, Internet, print media and others, including movies, radio and new media? How such messages influence the teenagers?

## References

1. Fineberg HV, Rowe S (1998) Improving public understanding: guidelines for communicating emerging science on nutrition, food safety and health. *J National Cancer Institute* 90: 194-200.
2. Grill R, Ramsay C, Minozzi S (2005) Mass media interventions: systematic review. *cochrane database systematic. Review* 1: 1-27.
3. Mekam M, Rao DR (2012) Quantitative analysis of nutrition and health messages in indian print media. *J Public Health Research* 2: 28-31.
4. Evette MH, Gaile LM (1999) Evaluation of newspaper reports of nutrition-related research. *J of American Dietetic Association* 99: 1564-1566.
5. Wakefield MA, Loken B, Hornik RC (2010) Use of mass media campaigns to change health behaviour. *The Lancet* 376.9748: 1261-1271.
6. Fischer M, Barkley R (2006) Young adult outcomes of children with hyperactivity: leisure, financial, and social activities. *Int J Disabil Dev Ed* 53: 229-245.
7. Fletcher J (2006) Social interactions in adolescent television viewing. *Arch Pediatr Adolesc Med* 160: 383-386.
8. Hancox RJ, Milne BJ, Poulton R (2005) Association of television viewing during childhood with poor educational achievement. *Arch Pediatr Adolesc Med* 159: 614-618.
9. Kooijman J (2004) Outside in America. George Michael's music video, public sex and global pop culture. *Eur J Cult Stud* 7: 27-41.
10. Sharif I, Sargent JD (2006) Association between television, movie, and video game exposure and school performance. *Pediatrics* 118: 1061-1070.
11. Werner-Wilson RJ, Fitzharris JL, Morrissey KM (2004) Adolescent and parent perceptions of media influence on adolescent sexuality. *Adolescence* 39: 303-314.
12. Vijayapushpam T, Mekam M, Rao DR (2014) A comparative analysis of television food advertisements aimed at adults and children in India. *J Innovative Research in Science & Engg* 2: 476-483.
13. Mekam M, Vijayapushpam T, Rao SF (2014) A current appraisal of health and nutrition related claims in indian children' television food advertisements. *J Social Science Studies* 1: 1-11.
14. Borzekowski DL, Robinson TN (2001) The 30-second effect: an experiment revealing the impact of television commercials on food preferences of preschoolers. *J Am Diet Assoc* 101: 42-46.
15. Meyer P (1990) News media responsiveness to public health. In: Atkin C, Wallack L, eds. *Mass Communication and Public Health*, Newbury Park, California: Sage Publications 52-59.
16. Mekam M, Rao DR (2011-A) A matter of looks: the framing of obesity in popular indian daily newspapers. *J of US-China Medical Science* 8: 30-34.
17. Adams WC (1992) The role of media relations in risk communication. *Public Relations Quest* 37: 28-32.
18. Davison KK, Birch LL (2001) Weight status, parent reaction, and self-concept in five-year-old girls. *Pediatrics* 107: 46-53.
19. Field AE, Camargo CA, Taylor CB, Berkey CS, Roberts SB, et al. (2001) Peer, parent, and media influences on the development of weight concerns and frequent dieting among preadolescent and adolescent girls and boys. *Pediatrics* 107: 54-60.
20. Dixon H, Scully M, Niven P, Kelly B, Chapman K, et al. (2014) Effects of nutrient content claims, sports celebrity endorsements and premium offers on pre-adolescent children's food preferences: experimental research. *Int J Pediatr Obes* 9: e47-e57.
21. Mekam M, Rao RD (2011-B) A comparative analysis of nutrition science coverage by popular indian daily newspapers. *J Media and Communication Studies* 3: 131-143.
22. Mekam M, Gavaravarapu SM, Venkaiah M, Raghunatha RD (2014) The quality of nutrition research reporting by leading daily newspapers in India. *J Media and Communication Studies* 6: 92-98.