

2009

Communicating healthy eating to adolescents

Kara Chan

Hong Kong Baptist University, karachan@hkbu.edu.hk

Gerard Prendergast

Hong Kong Baptist University, gerard@hkbu.edu.hk

Alice Grønhøj

Aarhus School of Business, alg@asb.dk

Tino Bech-Larsen

Aarhus School of Business, tib@asb.dk

This document is the authors' final version of the published article.

Link to published article: <http://www.emeraldinsight.com/10.1108/07363760910927000>

Citation

Chan, Kara, Gerard Prendergast, Alice Grønhøj, and Tino Bech-Larsen. "Communicating healthy eating to adolescents." *Journal of Consumer Marketing* 26.1 (2009): 6-14.

This Journal Article is brought to you for free and open access by the Department of Communication Studies at HKBU Institutional Repository. It has been accepted for inclusion in Department of Communication Studies Journal Articles by an authorized administrator of HKBU Institutional Repository. For more information, please contact repository@hkbu.edu.hk.

COMMUNICATING HEALTHY EATING TO ADOLESCENTS

Kara Chan
(Corresponding author)
Professor
Department of Communication Studies
Hong Kong Baptist University
Tel: (852) 3411 7836 Fax: (852) 3411 7890
Email: karachan@hkbu.edu.hk

Gerard Prendergast
Professor
Department of Marketing
Hong Kong Baptist University
Tel: (852) 3411 7570 Fax: (852) 3411 5586
Email: gerard@hkbu.edu.hk

Alice Grønhøj
Associate Professor
Department of Marketing and Statistics
Aarhus School of Business, University of Aarhus
Denmark
Tel: (45) 8949 6471
Email: alg@asb.dk

Tino Bech-Larsen
Associate Professor
Department of Marketing and Statistics
Aarhus School of Business, University of Aarhus
Denmark
Tel: (45) 8948 6448
Email: tib@asb.dk

- Citation: Chan, K., Prendergast, G., Gronhoj, A. and Bech-Larsen, T.)Communicate healthy eating to adolescents, *[Journal of Consumer Marketing](#)*, 26(1), 6-14.

Acknowledgement: This study was fully supported by a Faculty Research Grant from the Hong Kong Baptist University (Project No. FRG/05-06/II-48).

COMMUNICATING HEALTHY EATING TO ADOLESCENTS

Keywords: adolescents – health education – China – advertising execution

Abstract

This study explores perceptions of healthy/unhealthy eating, and perceptions of various socializing agents encouraging healthy eating, amongst Chinese adolescents.

A survey was conducted of 152 seven, eighth and ninth grade Hong Kong students. A structured questionnaire with closed-ended questions was distributed in three public secondary schools. Results showed that respondents frequently ate out with friends and frequently consumed a range of relatively unhealthy food (candies, chips, and soft drinks). They perceived that a balanced diet and eating at a regular time were the most important attributes of healthy eating. In terms of situational influences on their consumption, respondents most likely ate unhealthy food at parties, when eating out or with friends. They most likely ate healthy food at home and when they were sick. Looking at socializing agents, respondents claimed that parents and government publicity asked them to eat healthy food more often than teachers or friends. Parents were also perceived as being the most effective source in encouraging them to eat healthy food. In terms of alternative advertising appeals discouraging unhealthy eating, respondents considered news and fear appeals the most effective, while popularity and achievement appeals were considered relatively less effective.

COMMUNICATING HEALTHY EATING TO ADOLESCENTS

Introduction

Obesity is a global problem afflicting all age groups, bringing social and economic burdens. The direct economic costs of obesity have been assessed in several developed countries as being 2 to 7 percent of total health care costs (Department of Health, 2005). Overweight and obesity bring about not only physical problems, but are also associated with a number of psycho-social problems including body shape dissatisfaction and eating disorders. People with obesity are often confronted with social bias, prejudice and discrimination.

Studies indicate the importance of developing healthy eating habits among people at a young age. Yet, there is steadily increasing obesity among young people. Indeed it is estimated that at the turn of the 21st century there were over 155 million overweight children and youth in the world (Lobstein, Baur and Uauy, 2004). This obesity problem in children is prevalent in Hong Kong, where the Department of Health has reported an increasing trend of obesity among primary school students, from 16 percent in 1997/98 to 19 percent in 2004/05. In other words, almost one in five school children in Hong Kong is obese. This situation is also reflected in the results of survey research. For instance, a survey of 2115 secondary school students aged 11 to 18 in Hong Kong found that 42 percent of them had health problems involving excessive body weight, high blood pressure, high blood sugar or

abnormal blood fat levels. The study concluded that adolescent obesity in Hong Kong is now reaching epidemic proportions (Information Services Department, 2006).

As obesity has become an increasingly serious problem globally, there has in recent times been an increase in research studying how to communicate healthy eating habits to people, and the role of various socializing agents such as parents, government publicity, teachers, and peer groups. For instance, Livingstone (2005) identified food advertising (especially for unhealthy foods) as affecting food preferences and the behaviors of children directly and indirectly, although any direct causal link between food advertising and food eating behaviors is contested in the literature (Young, 2003). Social services marketers try to promote good eating habits, directly to the children and indirectly through the children's parents.

Effective health communication to young people should be based on a sound understanding of their perceptions of healthy and unhealthy eating habits, their perceptions of the various socializing agents and other sources communicating healthy eating habits to them, and their perceptions of different communication appeals regarding healthy eating. While these issues have been researched in the context of younger children, the perceptions of adolescents have not been explored. This would seem to be an important area for research, since adolescents are more often away from home and the watchful eyes of their parents. What are adolescents' perceptions of healthy eating? Which socializing agents do adolescents

perceive as being effective in communicating healthy eating messages? If advertisements are used to promote a healthy diet among adolescents, what types of appeals should be used? In order to fill these research gaps, this study explored these important issues.

Background

In this paper, healthy eating is defined by the eating behaviors that can enable the person to achieve “a state of complete physical, mental, and social well-being and not merely the absence of disease or infirmity” (World Health Organization, 2007).

Scholars generally agree that healthy eating habits are developed through a process of socialization, in which families, schools, the community, the government and international health organizations may all play an active role (Kelly, Turner and McKenna, 2006; McGinnis, Gootman and Kraak, 2006; Raiha, Tossavainen and Turunen, 2006). Parents serve as role models and influence adolescents’ purchase behavior directly (McNeal and Ji, 1999). Empirical data supports the notion that parental support for healthy meals and nutrition skills have a positive association with adolescents’ healthy food choices and healthy eating habits (Raiha, Tossavainen and Turunen, 2006; Young and Fors, 2001). Schools also disseminate nutrition and health information through the formal curriculum as well as extracurricular activities. Schools can support healthy eating by monitoring the nutrition values of the food supplied in lunches and snack shops (Nutbeam, 2000). Interestingly, however, peers have been shown to have a negative influence on healthy eating (Kelly, Turner and McKenna,

2006). Conflict between parental influence and peer influence may prompt young consumers to refuse to bring healthy food to school when their friends buy or consume food and beverages that are high in calorie and low in nutrient (these foods are sometimes termed as junk foods). Peer influence on body weight and body image also triggers unhealthy dieting practices such as vomiting or using laxatives for weight control (McGinnes, Gootman and Kraak, 2006). Governments and international health organizations may play a role in health promotion by advocating balanced diets and running health-related publicity campaigns.

Apart from parents, teachers, peers and governments, young consumers will normally be addressed by food advertisements, which may sometimes encourage them to put pressure on their parents to purchase foods which are unhealthy (Kelly, Turner and McKenna, 2006). In 2004, an estimated US\$15 billion was spent in the United States on advertising and marketing directed at children and youth, of which a major share was food and beverage marketing (Schor, 2004). Through the use of cartoon figures, jingles and animations, food advertisements aimed at children associate the consumption of foods with fun, enjoyment and peer acceptance (Center for Science in the Public Interest, 2003).

Socializing agents including parents, schools, governments, friends, and food advertisers are thus competing in influencing adolescents' health perceptions and food choices. Previous studies have examined the role of various socializing agents in influencing the eating habits and behaviors of children, but the all-important adolescent group has so far been ignored.

These effects need to be studied among adolescents, since teenagers are gradually becoming more independent in both their thinking and behavior (Eysenck, 1998).

In the light of the previous research and the absence of any research on adolescents, this study was designed to explore the issue. It was designed to delineate relationships rather than predict their effects. With this in mind, the following research questions were posed:

- RQ1. What are adolescents' perceptions of healthy/unhealthy eating?
- RQ2. What are adolescents' perceptions of various social influences (e.g. parents, teachers, friends and government publicity) that shape eating habits?
- RQ3. How do adolescents respond to advertising appeals (e.g. messages about popularity, love, achievement, news and fears) which discourage unhealthy eating?

Method

The Hong Kong context

Hong Kong was chosen as the context for this study because the education system in Hong Kong is very examination-oriented (Children Council Working Committee, 2005). Hong Kong children enjoy very little leisure time, get relatively little exercise, and are considered to be extremely inactive (Hui, 2001). Most elementary schools offer only two physical education classes a week. The lack of physical exercise has been proposed as a factor contributing to the prevalence of obese children in the society (Hui, 2001).

A second reason for choosing Hong Kong as the study location is that the government has placed renewed emphasis on promoting healthy eating since 2005. Three television commercials about healthy eating and balanced diet were produced and broadcast repeatedly in 2005. The main message of the three commercials was that a balanced diet should contain two portions of fruit and three portions of vegetables every day. The Department of Health joined hands with elementary schools, food traders, teachers and school parents associations in 2006 in launching an “EatSmart@school.hk” campaign. The target audience was families with elementary school children, and the objective was to promote the consumption of healthy lunch boxes and snacks at elementary schools. Two television commercials were launched to promote preparation of healthy lunch boxes at home and the consumption of healthy snacks at schools. Posters and guidebooks were distributed to elementary school children. Training and workshops about healthy eating were organized for elementary school principals and teachers, parents as well as food suppliers. Yet an analysis of all these government publicity materials reveals that they were targeted at younger children, with no publicity targeted at adolescents in secondary schools and institutions of higher education.

Questionnaire development

A draft questionnaire addressing the research questions was formulated in Chinese. It was designed based on the results of a series of focus group sessions. The questionnaire was tested by personally interviewing seven young persons aged 12 to 14. The final questionnaire had two parts.

The first part collected information about eating habits and the contexts in which healthy and unhealthy foods were consumed, perceptions about healthy and unhealthy eating, as well as about the influence on healthy eating of four specified socializing agents. The second part of the questionnaire collected respondents' perceptions of five fictitious print advertisements about consuming less soft drink. Each ad was based on a different appeal type: popularity, love, achievement, news, and fear. These advertisements were constructed by us using pictures downloaded from books and web sites. All five advertisements identify the Department of Health as the advertiser and share the same headline. One of the authors who teaches advertising copy writing selected the pictures and wrote the body copy. These advertisements were in Chinese (See Appendix 1) Respondents were asked to evaluate their liking for the ads and their perceived effectiveness using a five-point scale (1=dislike very much, 5=like very much; 1=very ineffective, 5=very effective). Soft drink was selected as the focus of the de-marketing campaign for three reasons: soft drinks had been specifically identified as unhealthy in a Hong Kong government public services television commercial that promoted the consumption of healthy snacks at schools. In addition, soft drinks are normally supported by aggressive advertising campaigns targeted toward young consumers, often employing youth "idols" as spokespersons. Third, young consumers are familiar with soft drinks, according to the focus group interviewees.

Data collection

Data was collected in February and March 2007. The respondents were 152 students in

grades 7 to 9, aged 12 to 16 years. Two classes of students were from grade 8 with one class each from grades 7 and 9. Altogether 160 questionnaires were distributed and 152 were collected. The response rate was 95 percent. The questionnaires were self-administered in the classrooms of three secondary schools (two co-educational and one school for boys). All the schools were in low to middle income residential neighborhoods. All aspects of the research procedure were conducted in Chinese.

Findings

Fifty seven percent of the respondents were male and 43 percent were female. The mean age of the respondents was 13.4 years. Fifty-four percent of the respondents reported living in public or rental housing, with the remaining 46 percent living in family owned housing.

Eighty percent of the respondents received a regular allowance from their parents of 5 to 900 Hong Kong dollars (US\$0.60 to \$115) each week. The average weekly allowance was 111 Hong Kong dollars (US\$14).

The respondents' reported eating habits are summarized in Table 1. Most of the respondents did not bring lunch boxes to school. Over eighty percent bought food during the school day at least once a week. As would be expected, candy, potato chips and soft-drinks were popular among the respondents. Sixty percent of the respondents reported eating out with friends at least once a week.

[Insert Table 1 about here]

Respondents' perceptions about what constitutes healthy and unhealthy eating are summarized in Table 2. Having a balanced diet and consuming food at regular times were widely perceived as components of healthy eating. Eating a narrow range of foods and eating at irregular times were generally perceived as unhealthy. While consuming food with preservatives or additives and eating fast food were perceived as unhealthy by over two-third of the respondents, eating natural food was perceived as healthy by only 46 percent of the students. Respondents did not perceive that the quantity of food intake had any relationship with healthy or unhealthy eating.

[Insert Table 2 about here]

Situations in which respondents said they often consumed healthy or unhealthy food are reported in Table 3. A majority of the respondents reported that they often consumed healthy food at home and when they were sick. A majority reported that they would often consume unhealthy food at parties, when eating out, in gatherings with friends, and at special festivals. Only a small proportion of respondents reported that they consumed healthy foods at school. Eating healthy or unhealthy food was not felt to be related with mood.

[Insert Table 3 about here]

Respondents were asked to recollect how often various socializing agents ask them to eat healthy food. Table 4 summarizes the results. Parents and the government publicity scored

highest, with the means scores for both significantly higher than the mid-point of 3.0 ($t=4.5$ for parents, $p\leq 0.001$; $t=3.4$ for government publicity, $p\leq 0.001$). Teachers and friends were less often recalled as a source asking them to eat healthy food. Since the frequency with which the various socializing agents asked the respondents to eat healthy food was measured for four different agents, a one-way repeated-measures analysis of variance was performed to identify any significant differences. The results indicated that there was a significant source effect. LSD pairwise comparisons of the means revealed that parents and government publicity both had significantly higher means than teachers and friends, showing that they were more often recalled as a source asking the respondents to eat healthy food.

[Insert Table 4 about here]

The respondents were then asked how effective the various socializing agents were in convincing them to eat healthy food. Table 5 summarizes the results. Only parents were perceived as an effective socializing agent (the mean value of 3.33 was significantly higher than the mid-point of 3.0, $t=3.7$, $p\leq 0.001$). The mean values for government publicity, teachers and friends were all significantly lower than the mid-point ($p\leq 0.001$).

Once again a one-way, repeated-measures ANOVA was conducted to compare the mean scores of the four socializing agents. There was a significant effect for source. LSD pairwise comparisons of the means revealed that parents had a significantly higher mean than teachers, friends or government publicity, so they were more often perceived as being effective in

asking the respondents to eat a healthier diet.

[Insert Table 5 about here]

Respondents were asked to rate (in terms of both liking and effectiveness) five different advertising appeals designed to discourage soft drink consumption. Table 6 summarizes the results for liking. Respondents reported neutral attitudes toward all five advertisements. None of the mean values was significantly different from the mid-point of 3.0, and a one-way, repeated measures ANOVA comparing the mean liking scores for the five ads revealed no significant difference among the appeal types. With the exception of the popularity and news appeal pairing, all five ads were perceived as being equally likeable.

[Insert Table 6 about here]

However, there were significant differences in respondents' perceptions of the effectiveness of the five advertisements, as shown in Table 7. The perceived effectiveness of the two advertisements using the news and fear appeals was significantly higher than the mid-point of 3.0 ($p \leq 0.001$). The perceived effectiveness of the two advertisements using popularity and achievement appeals were significantly lower than the mid-point ($p \leq 0.01$). The perceived effectiveness of the love appeal was not significantly different from the mid-point of 3.0. The results of a repeated measures ANOVA comparing the mean effectiveness scores of the five appeals indicated that there was a significant effect for appeal type. LSD pairwise comparisons of the means showed that the fear appeal and the news

appeal were perceived as being significantly more effective than the popularity, love and achievement appeals.

[Insert Table 7 about here]

Discussion

Before discussing the findings, three limitations need to be recognized. First, the respondents were chosen from three secondary schools which may not have been representative of all schools in Hong Kong or elsewhere, thus limiting the generalizability of the findings. Second, this study relied on self-reporting. As with all self-report studies, whether the reporting is consistent with actual behavior might be questioned. Future researchers might overcome both of these problems by using more representative samples, and by actually observing eating behavior. Third, the advertisements used in the current study identified the Department of Health as the advertiser. It may have an impact on the perceived likability or effectiveness of the advertisements

Despite these limitations, this exploratory study has revealed two key findings which appear to have a logical and explicable relationship. First, adolescents frequently engage in eating unhealthy food, especially outside the home. Second, parents are the socializing agents who most often encourage adolescents to eat healthy food. These two findings, in tandem, would seem to reinforce the importance of this study focusing on adolescents. Unlike younger children, adolescents may not always be under the supervision of their parents, and

therefore they may be making more independent eating decisions when they are outside the home.

Teachers and friends were less often cited as a source of healthy eating messages and, consistent with this, were considered less effective. Friends may advise less often and be considered less effective because friends may know little about healthy eating. The finding that teachers advise less often and are also considered relatively ineffective is concerning. Teachers ought to have an important role in health education, and schools should be considered a health promotion setting (Lee et. al., 2003; Cheung, 2002). Schools and teachers play an important role in health education and promotion at the crucial childhood and adolescence stage (Allensworth, 1997). Government publicity was often recalled as a source of healthy eating messages, yet these were considered relatively ineffective. While all five appeals examined in this research were perceived as being equally likeable, the news and fear appeals were perceived as being the most effective in discouraging soft drink consumption. Since the respondents were Chinese, this was assumed to be a collectivist context in which popularity appeals (reflecting peer acceptance of healthy eating) should be the most effective. Yet this was not the case. Perhaps the popularity and fear appeals might not have been completely mutually exclusive, since the fear of obesity assumed in the fear ad might be based on fear of social rejection. This might be the underlying reason why the fear appeal was considered the most effective.

Conclusions

To conclude, the current study found that a balanced diet and eating at regular time intervals were perceived as healthy by respondents. In other words, the contents of the diet and the frequency of food consumption matters most to the respondents. Respondents reported that they frequently consume unhealthy foods in social and festive contexts. Our sample perceived that parents and the Government were communicating frequently to them about healthy eating. However, the perceived effectiveness of parents was higher than that of the Government. Respondents were asked to evaluate five print advertisements about consuming less soft drink. Respondents were more receptive to advertisements using news and fear appeals than love, popularity, and achievement appeals.

Managerial Implications

Obesity brings many problems, both social and economic. Despite the severity of the problems obesity causes and the growing incidence of obesity, little is known about adolescents' perceptions of healthy eating. By identifying their perceptions of healthy eating habits, their perceptions of the various socializing agents/source communicating with them about healthy eating, and their perceptions of different communication appeals, this study has provided useful information for public health officials to consider when developing communications targeted towards adolescents. Specifically, communicating healthy eating messages must take a two-pronged approach: directly targeting the increasingly independent

adolescents, and indirectly targeting adolescents via parents. In addition, government officials may need to rethink how they communicate with adolescents, and ensure they use the appropriate media and message to influence adolescents' attitudes and behavior. The perceived ineffectiveness of the Government as a socializing agent may be because the current public service advertisements that promote healthy eating are targeted at children rather than adolescents. The government communication might usefully adopt advertisements using news and fear appeals, since these would appear to have relatively more influence on the adolescent audience than love, popularity, and achievement appeals.

References

- Allensworth, D. (1997), "Improving the health of youth through a coordinated school health programme", *Promotion and Education*, Vol. 1 No. 4, pp. 42-47.
- Center for Science in the Public Interest (2003), "Pestering parents: How food companies market obesity to children", <http://www.cspinet.org/new/200311101.html>.
- Cheung, W.H. (2002), "The adoption of a "life-event" approach to promote health education in schools", *Promotion and Education*, Vol. 9 No. 4, pp. 49-50.
- Children's Council Working Committee (2005), "Report on the rights of children in Hong Kong", available at:
http://www.crin.org/docs/resources/treaties/crc.40/Hong%20Kong_children_report.pdf.
- Department of Health (2005), "Healthy lifestyle to tackle obesity",
<http://www.info.gov.hk/dh/new/index.htm>.
- Eysenck, M. (1998). *Psychology: an integrated approach*, Addison Wesley Longman, England, U.K.
- Hui, S. (2001), "Health and physical activities in Hong Kong: A review", Hong Kong Sport Development Board Research Report No. 4, March, available at
<http://www.hksi.org.hk/hksdb/html/pdf/research/r2.pdf>.
- Information Services Department (2006), "42% of HK teens unhealthy: Survey",
<http://www.news.gov.hk/en/category/healthandcommunity/061025/html/061025en05004.htm>.
- Kelly, J., Turner, J.J. and McKenna, K. (2006), "What parents think: Children and healthy eating", *British Food Journal*, Vol. 108 No. 5, pp. 413-32.
- Lee, A., Tsang, C., Lee, S.H., and To, C.Y. (2003), "A comprehensive 'healthy schools programme' to promote school health: The Hong Kong experience in joining the efforts of the health and education sectors", *Journal of Epidemiology and Community Health*, Vol. 57 No. 3, pp. 174-77.
- Livingstone, S. (2005), "Assessing the research base for the policy debate over the effects of food advertising to children", *International Journal of Advertising*, Vol. 24 No. 3, pp. 273-96.

Lobstein, T., Baur, L. and Uauy, R. (2004), "Obesity in children and young people: A crisis in public health", *Obesity Reviews*, Vol. 5 No. 1, pp. 4-85.

McGinnis, J.M., Gootman, J. and Kraak, V.I. (2006), *Food Marketing to Children and Youth: Threat or Opportunity*, The National Academies Press, Washington, D.C.

McNeal, J.U. and Ji, M.F. (1999), "Chinese children as consumers: An analysis of their new product information sources", *Journal of Consumer Marketing*, Vol. 16 No. 4, pp. 345-64.

Nutbeam, D. (2000), "Health literacy as a public goal: A challenge for contemporary health education and communication strategies into the 21st century", *Health Promotion International*, Vol. 15 No. 3, pp. 259-67.

Raiha, T., Tossavainen, K and Turunen, H. (2006), "Adolescents' nutrition health issues: Opinions of Finnish seventh-graders", *Health Education*, Vol. 106 No. 2, pp. 114-32.

Schor, J.B. (2004), *Born to Buy: The Commercialized Child and the New Consumer Culture*, Scribner, New York.

World Health Organization (2007) "What is the definition of health?" available at: www.who.int/suggestions/faq/en/

Young, B. (2003), "Does food advertising influence children's food choices? A critical review of some of the recent literature", *International Journal of Advertising*, Vol. 22, pp. 441-59.

Young, E.M. and Fors, S.W. (2001), "Factors related to the eating habits of students in grades 9-12", *Journal of School Health*, Vol. 71 No. 10, pp. 483-8.

Table 1: Eating habits

	Never (%)	1-2 days a week (%)	3-4 days a week (%)	5 or more days a week (%)
Bring a lunch bag to school	74	6	5	15
Buy food during a school day	18	45	17	20
Consume candies or chips	20	60	18	3
Consume soft drinks	17	68	9	6
Eat out with friends	40	49	11	1

Rows do not add to 100% due to rounding

Table 2: Perception of healthy and unhealthy eating

Healthy eating	%
have a balanced diet	93
eat at regular times	78
eat according to the food pyramid	71
have three meals a day	61
eat natural food	46
eat almost the same amount at each meal	26
Unhealthy eating	%
eat a narrow range of food	88
eat at irregular times	74
eat food with preservatives or additives	72
eat fast foods	65
eat too fast	55
eat too much at one time and too little at other times	38

Columns add to more than 100% due to multiple responses

Table 3: Contexts for eating healthy and unhealthy food

Eat healthy food	%
at home	72
when sick	65
when parents are around	41
when in a good mood	24
during holidays	22
in school	21
Eat unhealthy food	%
at parties	86
when eating out	70
at gatherings with friends	61
in festive periods	57
when in a hurry	49
when in a bad mood	13

Columns add to more than 100% due to multiple responses

Table 4: Frequency with which socializing agents encouraged the respondents to eat healthy food

Source	Mean#	S.D.	Mean difference			
			1	2	3	4
1. My parents	3.42	1.2	-	1.13*	1.67*	0.13
2. My teachers	2.29	1.0		-	-0.54*	-1.01*
3. My friends	1.75	0.8			-	-1.55*
4. Government publicity	3.30	1.1				-

1 = never 5 = very often

* significant difference in means between pairs at the $p \leq 0.05$ level

Table 5: Perceived effectiveness of socializing agents in encouraging respondents to eat healthy food

Source	Mean#	S.D.	Mean difference			
			1	2	3	4
1. My parents	3.33	1.1	-	0.81*	0.94*	0.66*
2. My teachers	2.52	1.1		-	-0.13	-1.15
3. My friends	2.39	1.1			-	-0.28*
4. Government publicity	2.67	1.0				-

1 = very ineffective 5 = very effective

* significant difference in means between pairs at the $p \leq 0.05$ level

Table 6: Liking of the five advertising appeals

Appeals	Mean#	S.D	Mean difference				
			1	2	3	4	5
1. Popularity	2.89	0.9	-	-0.09	-0.09	-0.22*	-0.01
2. Love	2.98	1.0	-	-	0.00	-0.13	0.09
3. Achievement	2.99	1.1	-	-	-	-0.13	0.09
4. News	3.10	1.0	-	-	-	-	-0.21*
5. Fear	2.88	1.2	-	-	-	-	-

1 = dislike very much 5 = like very much

* significant difference in means between pairs at the $p \leq 0.05$

level

Table 7: Perceived effectiveness of the five advertising appeals

Appeals	Mean#	S.D	Mean difference				
			1	2	3	4	5
1. Popularity	2.60	0.9	-	-0.32*	-0.11	-0.73*	-0.91*
2. Love	2.93	1.0	-	-	0.21*	-0.40*	-0.59*
3. Achievement	2.72	1.1	-	-	-	-0.61*	-0.80*
4. News	3.33	1.1	-	-	-	-	-0.19
5. Fear	3.49	1.2					

1 = very ineffective 5 = very effective

* significant difference in means between pairs at the $p \leq 0.05$ level

Appendix 1

1. Popularity appeal



Every year, over 100,000 young people like you in the world have quit drinking soft drink. Come on, join us and enjoy a healthy life!

Consume less soft drink!

asdfasdfasdfasdf asdfasdfasdfasdf
asdfasdfasdfasdf asdfasdfasdfasdf
asdfasdfasdfasdf asdfasdfasdfasdf



2. Love appeal

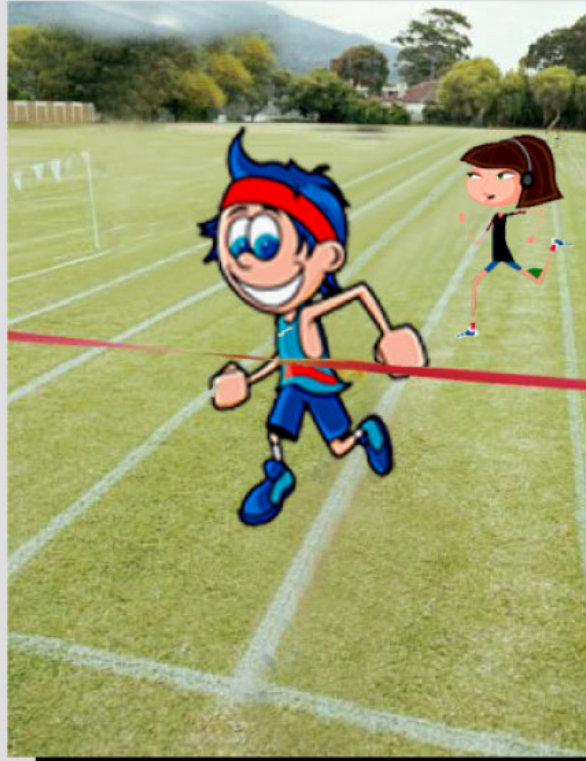


Stay in shape and stay attractive to the one you love.
Soft drink has too much sugar and it ruins the body.

Consume less soft drink!

asdfasdfasdfasdf asdfasdfasdfasdf
asdfasdfasdfasdf asdfasdfasdfasdf
asdfasdfasdfasdf asdfasdfasdfasdf

3. Achievement appeal



Don't you want to be the winner? Consume less soft drink to keep your body fit for accomplishment.

Consume less soft drink!

asdfasdfasdfasdf asdfasdfasdfasdf
asdfasdfasdfasdf asdfasdfasdfasdf
asdfasdfasdfasdf asdfasdfasdfasdf



4. News appeal



Health news announced: 1 can of soft drink contains 7 teaspoons of white sugar. It can make you overweight.

Consume less soft drink!

asdfasdfasdfasdf asdfasdfasdfasdf
asdfasdfasdfasdf asdfasdfasdfasdf
asdfasdfasdfasdf asdfasdfasdfasdf



5. Fear appeal



Dare to swim this summer?
Soft drink has too much sugar and it ruins the body.

Consume less soft drink!

asdfasdfasdfasdf asdfasdfasdfasdf
asdfasdfasdfasdf asdfasdfasdfasdf
asdfasdfasdfasdf asdfasdfasdfasdf

