

Economic risk of childhood obesity

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Abstract:

Nowadays in markets where generally oversupply is dominant, companies' marketing activity gets a salient role, so as consumer protection to compensate overdrove profit interest. Actuality of our research is justified by a trend characteristic for the present: childhood and juvenile obesity as a problem, health and healthy nutrition as an expectation in connection with communication. Marketing uses its wide, subtle toolkit, among others sales promotion tools (brand licensing, using celebrities, free gifts etc.) The real problem is that foods containing high level of salt, sugar and fat are promoted to young people contributing to childhood obesity. Childhood and juvenile obesity as a social phenomenon is not just a negative effect on someone's health stable, but also a serious and versatile national economic level problem.

Introduction

It is not just coincidence that several companies choose child and juvenile age segment as a target. This is the segment what used to have, have and will have a permanent growth potential. The reason for that is the fact that adults (parents, family members) would like to give the best (or even sometimes more) to their children comparing to their possibilities. It is also not negligible that the segment is easy to be convinced, and their influencing power goes much more beyond the boundary of the segment, they are able to influence the product and brand choice habits of adults. Greater influence of children on family decision making caused by two main reasons: a) growing importance of families with one

parent and lower average number of children, b) independence of children in the family is growing and their consumer socialization starts earlier. (Lehota, 2001) Nowadays we are so successful in influencing children, that we cannot believe what we see. Several authors mention the “nagging factor” how children can influence their parents when they make purchase/brand decisions. (Centre for Science in the Public Interest, 2003; Marquis, 2004; Berry, 2008). Marketing uses its wide, subtle toolkit, among others sales promotion tools (brand licensing, using celebrities, free gifts etc.) The effects of advertisements on children were examined by several authors. (Atkin 1978, Rossiter 1980, Kunkel-Gantz 1992, Ward 1987) Television is the most widely used medium in our commercial world, an economic engine characterizing most companies’ advertising activities. (Singer and Singer, 2001) In case of adult products no children influence can be detected while in case of children products the purchase influence of children can be discovered clearly. (Rossiter, 1980) The real problem is that foods containing high level of salt, sugar and fat are promoted to young people contributing to childhood obesity. Considerable part of the advertisements demonstrate foods with high level of fats, sugar and/or salt that is rich in energy but include low level of nutritive values and important nutritive materials (Linn, 2008). More than 75% of advertisements of games, flakes, candies and snacks is scheduled on Saturday morning, primarily on the channels for children (Macklin, M. C. 2003). Childhood and juvenile obesity as a social phenomenon is not just a negative effect on someone’s health stable, but also a serious and versatile national economic level problem. Obesity and problems caused by obesity contribute to the decrease of social and individual welfare; also the drastic increase of health expenditures caused by overweight and obesity must be mentioned. It can be stated, that obesity is becoming a serious problem nowadays. Today the risk of obesity is a bigger problem than smoking or alcoholism. It means that the average health care cost of overweight persons is higher by 42% than normal bodyweight ones (Finkelstein, 2004). It means that 17.5 million overweight children live in the EU (Fülöp, 2009). Centers for Disease Control and Prevention published in 2004, that 64 percent of U.S. adults are either overweight or obese (CDC, 2004). The increased rate of obesity is alarming, given the association

between obesity and many chronic diseases, including type 2 diabetes; several types of cancer, musculoskeletal disorders; sleep apnea (Must et al., 1999; Field et al., 2001; Visscher, Seidell, 2001). Hastings' study responds to the question unambiguously with his method and his statements: there is a lot of food advertising for children; the advertised diet is less healthy than the recommended one; children enjoy and are engaged with food promotion; food promotion is having an effect, particularly on children's preferences, purchase behavior and consumption (Hastings, G., Stead, 2003). In 1998, medical spending on obese people was half of what it is today. It could more than double in the next decade, accounting for more than 20 percent of overall medical expenses. Of the three primary diseases related to both smoking and obesity - diabetes, heart disease, and cancer - 1.8 trillion USD a year is spent treating them (Huff., 2010). The number of those who attribute a remarkable role to promotions of foods containing high level of salt, sugar and fat is also not negligible.

Aim and methodology

We used several methods when we researched marketing communication activity influencing young people and children and we examined several regulating elements for foods containing high level of salt, sugar and salt in case of young people. We started our research with gathering desk research data and studying domestic and international literature. We examined marketing stimuli having impact on children, obesity trends, costs; we analyzed best practices. We continued our researches with field researches. During our field researches we used quantitative (surveys, questionnaire) and qualitative (experiment – taste test) methods. In our researches we examined with a questionnaire the consumer behavior of young people especially in connection with foods containing high level of salt, sugar and fat and the influencing effect of their commercials. In the survey 1297 questionnaires were filled in North Great Plain Region, Hungary, in secondary schools of four towns (Debrecen, Mezőtúr, Nyíregyháza, Szolnok). Searching and choosing schools in the region were done randomly. Taking part in the research were voluntary, but several secondary

schools did not take part in the research. Hence we can state that fortune played the main role who were take into the research. Visit of the schools happened after a telephone coordination, where students could fill in the questionnaire in a calm, school environment. Taking part in the research for pupils were voluntary and anonym without any previous selection. Inquiry of the questionnaires happened between November 2009 and March 2010. Only secondary school age students took part in the research, young people between the age of 13 and 19. Distribution of the sample by gender: 55.4% women, 44.6% men, that fulfill representatively requirements. Average age in the sample ($\bar{x} \pm \sigma$) 16.10 ± 1.328 year, range (R) 13-19 year, modus 15 year. During data procession we used statistical methods (mean, median, deviation, Cramer V statistics, Kendall's rank correlation, factor analysis, cluster analysis, crosstabs etc.) with the help of SPSS 14.0 program and Microsoft Excel 2010. We continued our descriptive researches with simple statistical methods, we used Cramer V statistics for examining correlation among criteria, with Kendall's rank correlation we examined accordance in the group. We used principal axis factoring for examining the influencing power of commercials, while we used cluster analysis for the two executed segmentation process.

Hypothesis and Results

1.) In our research we assumed that consumption of foods containing high level of salt, sugar and fat correlate with the age and gender of young people.

During our research we made several analysis to realize at what intensity children and young people take part in the market of foods containing high level of salt, sugar and fat. As to the stance of European Heart Network we limited our research to 3 product categories (fast food products, carbonated soft beverages, especially coke and chips). We can see as a result of our field researches that 38.0% of young men and 29.7% of young women consume at least once a week health-damaging chips. 70.5% of young men and 57.8% of young women consume coke at least once a week. The proportion of weekly fast-food restaurant visitors is 17.1% among young men and 11.1% among young women.

As to the classification of McDonald's we can refer them as heavy users. Data is shocking high. We proved with our field research that young people with different gender have different consuming intensity; in market of foods with high level of salt, sugar and fat young men taking part with a higher intensity than young women. They do it even against their opinion that they dine healthier than younger women and that is a paradoxon.. Analyzing foods containing high level of salt, sugar and fat with distribution ratio, it can be stated that women has a lower consumption intensity; but by using higher statistic methods (ex.: Cramer V statistics) this unambiguous trend cannot be validated, the indicator showed only low correlation between the gender of the interviewed and consumption intensity. These results confirmed the high consumption intensity level for both genders. we made a similar statement for the age of the interviewed persons: at a young age consumption intensity showed a minimal decrease with age, and the degree of it is negligible, as Cramer V statistics strengthened this fact. It can be stated that consumption intensity does not depend on age. It can be stated, that consumption of foods containing high level of salt, sugar and fat does not show close correlation with the age and gender of the interviewed, consumption of foods containing high level of salt, sugar and fat represent a generally high intensity among young people. It can be stated that young people of different gender and age have different consumption intensity, but the age and gender of the interviewed is not a determining factor, it is much more determining to which segment the person belongs by his consumption intensity in the case of foods containing high level of salt, sugar and fat.

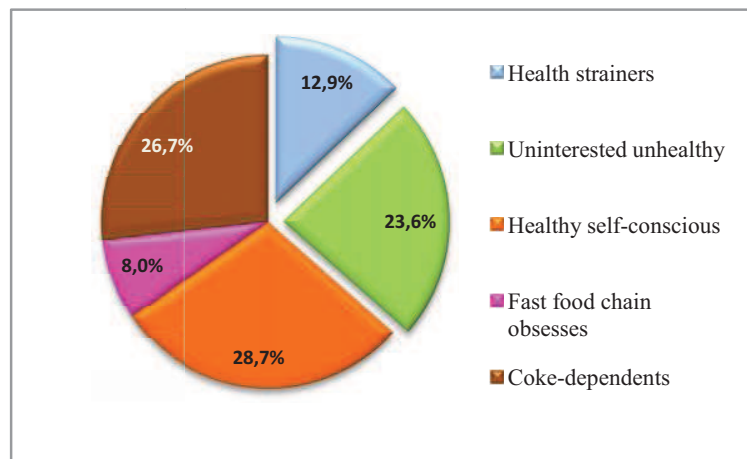
2.) Market segmentation, cluster analysis. We assumed that by virtue of field researches, well delineated consumer groups can be formed within the segment of young people in case of foods containing high level of salt, sugar and fat (market segmentation). The cluster analysis method was used.

Using cluster analysis we segmented the age group of young people by their consumption intensity in the case of foods containing high level of salt, sugar and fat. Groups can be unambiguously identified and have variant nature. Segmentation were done by the age and gender of the interviewed people. By the gender of the interviewed we identified the following segments:

- Health strainers,
- Uninterested unhealthy,
- Healthy self-conscious,
- Fast food chain obsesses,
- Coke-dependents.

Ratio of different segments can be seen on Figure 1.

Figure 1: Distribution (%) of revealing segments on the market of foods containing high level of salt, sugar and fat



Source: Own research, 2010

Detailed consumption data can be found in Table 1 according to identified segments.

Table 1: Frequency of fast-food products, cola and chips consumption according to identified segments (%)

Frequency of chips consumption (%)							
	Daily	Several times on a week	Weekly	Twice in a month	Monthly	Rarely	Total
Health strainers	1.8	9.6	24.1	42.8	21.7	0.0	100.0
Uninterested unhealthy	11.6	30.0	56.8	1.6	0.0	0.0	100.0
Healthy self-conscious	0.0	0.0	0.0	0.0	21,7	78,3	100,0
Fast food chain obsesses	0.0	0.0	3.9	33.0	31.1	32.0	100.0
Coke-dependents	0.0	0.0	0.0	31.1	32.8	36.0	100.0
Average	3.6	10.0	19.7	16.9	19.2	30.5	100.0
Frequency of sugar-sweetened carbonated soft drinks consumption (%)							
	Daily	Several times on a week	Weekly	Twice in a month	Monthly	Rarely	Total
Health strainers	0.0	0.0	3.6	42.8	24.7	28.9	100.0
Uninterested unhealthy	44.9	35.1	19.7	0.3	0.0	0.0	100.0
Healthy self-conscious	0.0	0.0	0.0	14.8	34.5	50.7	100.0
Fast food chain obsesses	26.2	33.0	34.0	2.9	1.9	1.9	100.0
Coke-dependents	22.7	32.8	44.5	0.0	0.0	0.0	100.0
Average	21.2	21.5	20.8	9.3	11.4	15.8	100.0

Frequency of fast-food products consumption (%)							
	Daily	Several times on a week	Weekly	Twice in a month	Monthly	Rarely	Total
Health strainers	1.2	1.2	4.2	11.4	60.2	21.7	100.0
Uninterested unhealthy	2.4	6.5	15.9	16.8	46.8	11.6	100.0
Healthy self-conscious	0.0	0.0	0.7	3.3	47.4	48.7	100.0
Fast food chain obsesses	4.9	14.6	29.1	51.5	0.0	0.0	100.0
Coke-dependents	0.0	0.0	0.0	0.0	67.4	32.6	100.0
Average	1.2	3.2	7.6	11.2	50.5	26.3	100.0

Source: Own research, 2010

The segmentation proves that there are two segments being consciously healthy or striving for healthy nutrition, and avoid consumption of foods containing high level of salt, sugar and fat. Total proportion is 36.5% of the young. With age segmentation we proved that reformulation of segmentation by the gender of the interviewed does not mean a substantive difference compared to the previous one. F –rates calculated during the segmentation process proved that the gender and age of the interviewed does not have substantive effect on consumption of foods containing high level of salt, sugar and fat, segmentation can be carried out by consumption intensity of products. The developed segments are existing ones and show practically useable segmentation.

By the results of our field research we can state that one (38.9%) of the interviewed young do not bother with healthy nutrition and health protection. Only half of the young read the ingredients list on the back of the products. The situation is even more aggravated as only half of those who read the ingredients list is aware of the effects of the components (by their own avowal). This value is not better in the case of cumulative results: only 42.4% of the whole population said he is aware of the positive effects of the components. In total 17.3% of the interviewed said that he does not mind about the compound of a food. We can

ascertain that it is the responsibility of consumer protection that 60% of young people do not understand the signs of food labels.

During our field research we examined where children and young people buy foods -like chips and soft beverages- containing high level of salt, sugar and fat and in what proportion parents buy these products. By the results of our research we can state that in small floorspaced stores the intensity of procurement is high in the case of foods containing high level of salt, sugar and fat (chips 22.2%, soft beverages 18.8%). Buying these products in school buffets is salient, so legal regulation of their assortment has reason for existence. Parental procurement is high in case of both products: 18.4% in the case of chips and 21.1% in the case of soft beverages. Bad family patterns unambiguously contribute to drastic increase of childhood and juvenile obesity. Consumption knowledge is delivered from generation to generation, newborn babies have to acquire consumer behavior patterns to be able to chase goods to satisfy their needs. (McNeal, 2007)

3.) We assumed that marketing communication activity of product producers can be broke up into different component and the effectiveness of components can be measured. we also assumed that the effectiveness of producers' marketing communication activity is correlated with the age and gender of young people.

During our researches we examined the effect of marketing communication activity on young people, especially the effect of commercials and sales promotion tools. We measured the influencing effect of companies' marketing activity, attitude directions and intensity towards commercials. Young people ranked their accordance on a five grade scale: where 1 meant „absolutely not agree”, 5 meant „totally agree”. Results of the segmentation can be seen on table 1. We made 3 segments out of the young by the receptivity of communication:

- Resigned dismissive (cluster 1),
- Credulous pliable (cluster 2),
- Rationally conscious (cluster 3).

Detailed data of average sympathy of identified segments can be found in Figure 2.

Figure 2: Segmentation of young people by their average sympathy for commercials

	Final segments (cluster)		
	cluster 1	cluster 2	cluster 3
1.Commercials are entertaining	1.87	2.91	2.06
2.Commercials became part of life	3.57	4.58	4.24
3.Commercials influence my consumer habits	1.36	2.61	1.71
4.Commercials influence people's consumer habits	3.38	4.02	3.54
5.I see too much commercials in media	4.57	4.63	4.65
6.People buy unnecessary things because of commercial effects	4.10	4.37	3.97
7.I buy unnecessary things because of commercial effects	1.23	2.17	1.67
8.I am a conscious customer	4.41	3.95	3.38
9.I am aware of my consumer rights	4.32	4.05	2.52
10. Gender	Men	Women	Men
Proportion of the segment	30.4%	36.6%	33.0%

Source: Own research, 2010

Reason for existence of the segments is validated by Kendall's rank correlation (66.9%). Different segments can be influenced differently by marketing activity, we measured the degree of this phenomenon with the help of factor analysis. Factors we described explain the influencing effect of marketing activity in almost 60%. We examined and measured the influencing power of celebrities, fairy tale characters (brand licensing), sweepstakes and free gifts. A

well selected celebrity, fairy tale character influence a young consumer in 20%, sweepstakes 50%, free gifts 55%. We detected that age and gender of young people show a correlation with the success of the marketing activity, but in this case segment-belonging is the crucial factor.

Conclusion

Rudimentary aim of the dissertation is to analyze the consumption intensity of young people, and to measure the influence effect from the side of the producers. By the research results we can state that Consuming foods with high level of fat, salt and sugar is more and more popular in Hungary, consuming intensity of these products is high in young's segment. By the results of the segmentation it can be stated that the majority of young Hungarians is an intensive consumer of foods with high level of fat, salt and sugar, do not understand the notations of food labels, and not aware of the signs' meaning on product packages. There are several ways to decrease uncertainty: rethinking legislation, regulation of communication in case of foods with high level of fat, salt and sugar, increasing the price of products with the tax tools, examining the role of parents. As to our opinion the efficient solution roots in the combination of all of these. It is a fact that foods with high level of fat, salt and sugar are popular among young people, with promoting these products we contribute to childhood obesity. Lack of legislation on market of foods with high level of fat, salt and sugar might lead to success in a short run but only for the producing companies. Profit is realized at the producing companies, but costs are borne nationally as an increased nursing cost of obese children, young and adults. Thinking it over responsibly and rationally it can be foreseeable that the described process is not sustainable and needs intervention, not just in long, but also in a short run. Hence the utmost practical benefit of the dissertation is that it draws attention to childhood and juvenile obesity, proving high consumption intensity of foods containing high level of salt, sugar and fat, suggestibility of young people in case of these products, measuring the degree of influencing effect by segments.

References

ATKIN, C. (1978), "Observation of Parent–Child Interaction in Supermarket Decision-Making." *Journal of Marketing*, 42 October, pp. 41- 45.

BERRY B.,MCMULLEN T (2008): Visual communication to children in the supermarket context: Health protective or exploitive?, *Agric Hum Values* (2008) 25:333–348

CDC (2004), Centers for Disease Control and Prevention, National Center for Health Statistics (NCHS): "Prevalence of Overweight and Obesity among Adults: United States, 1999-2000." 1999-2000 National Health and Nutrition Examination Survey (NHANES).

<http://www.cdc.gov/nchs/products/pubs/pubd/hestats/obese/obse99.htm#Table%202>
(updated May 2004).

CENTER FOR SCIENCE IN THE PUBLIC INTEREST (2003): *Pestering parents: How food companies market obesity to children*. Washington, DC: Center for Science in the Public Interest.
<http://www.cspinet.org/new/200311101.html>. Accessed November 9 2006.

FIELD, A., COAKLEY, E. H., MUST, A., SPADANO, J. L., LAUD, N., DIETZ, W. H., RIMM, E., & COLDITZ, G. A. (2001): "Impact of Overweight on the Risk of Developing Common Chronic Diseases during a Ten-Year Period." *Archives of Internal Medicine*, 161 (13): 1581-6.

FINKELSTEIN E. (2004): Use of incentives to motivate healthy behaviors among employees, *Gender Issues*, Volume 21, Number 3, June 2003, ISSN 1936-4717 p. 50-59

FÜLÖP N., SÜLLŐS Gy., HUSZKA P. (2009): *A Dunántúlon élő fiatalok táplálkozási szokásainak fókuszcsoportos vizsgálata*, Kaposvár, 2009. augusztus 25-26, Marketing Oktatók Klubja Konferencia, ISBN 978-963-9821-12-5

HASTINGS, G., STEAD, (2003): *Review of the research on the effects of food promotion to children.*, London, Food Standards Agency., p. 218

HUFF E. (2010): *Obesity Will Cost U.S. \$344 Billion a Year in Health Care Costs*, *NaturalNews*, Online edition,
http://www.naturalnews.com/z027868_obesity_health_care_costs.html, January 04, 2010

KUNKEI, D., GANTZ W. (1992): Children's television advertising in the multi-channel environment. *Journal of Communication*, 42., p. 134-152

LEHOTA J. (2001): *Élelmiszergazdasági marketing*, Műszaki könyvkiadó, Budapest, p. 327

LINN S. (2008): Calories for Sale: Food Marketing to Children in the Twenty-First Century, *The ANNALS of the American Academy of Political and Social Science*, Vol. 615, No. 1, p 133-155

MACKLIN, M. C. (2003): 'Children: Targets of Advertising', in J. McDonough and K. Egolf (eds.), *Encyclopedia of Advertising*, 1, (New York, NY: Fitzroy Dearborn), p. 294–298.

MARQUIS, M. (2004): Strategies for influencing parental decisions on food purchasing. *Journal of Consumer Marketing* 21(2/3): p. 134–143.

MCNEAL J. (2007): On Becoming a Consumer. *Development of Consumer Behavior Patterns in Childhood*. Elsevier Inc., Burlington p. 121-154, p. 357-389

MUST, A., SPADANO, J., COAKLEY, E. H., FIELD, A. E., COLDITZ, G. A., & DIETZ, W. H. (1999): "The Disease Burden Associated with Overweight and Obesity." *Journal of the American Medical Association*, 282(16): p.1523-29.

ROSSITER, J. (1980): Children and television advertising: Policy issues, perspectives and the status of research. In: Palmer, E., A Dorr (1980): *Children and the faces of television*. Academic Press, New York. p. 251-272

VISSCHER, T., SEIDELL, J. (2001): "The Public Health Impact of Obesity." *Annual Review of Health*, 22: p. 355-375.

WARD S. (1980), "Consumer Socialization" in *Perspectives in Consumer Behavior*, eds. Harold H. Kassarian and Thomas S. Robertson, Glenville, IL: Scott, Foresman.