

# THE MOTHER'S ROLE IN HEALTH CONSCIOUS CONSUMER SOCIALIZATION OF CHILDREN

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## Abstract

In our research we were searching for a correlation between childhood obesity and the mother's body shape and lifestyle. Using the Cramer's V co-efficient, we have examined the relationship between the body shape according to BMI and the one judged by the respondent mothers. The results do not reflect the actuality in Hungary. The Cramer's V coefficient, which measures the correlation between body shape according to BMI and the judged data of mothers were moderate: 0.519 which means that the respondents were not able to pinpoint their own exact BMI and body shape. Body shape of children supposed by mothers was also not accurate. The same tendency applies in the care of children's supposed body shape judged by their mothers. According to our research, we can state that body type of mothers exercises influence on body shape of children. Level of influence depends on the age of children (3.6 – 8.5%).

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**Keywords:** BMI, childhood obesity, mother, food with high level of fat, sugar and/or salt

## Introduction

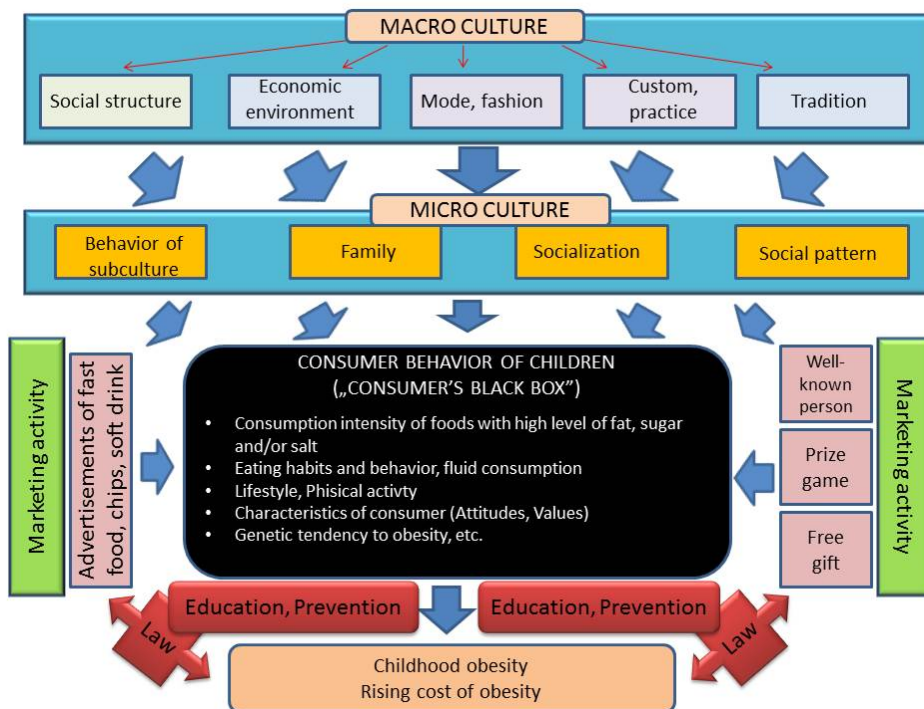
By now, obesity has become a regular phenomenon for, has infiltrated into our family life, not sparing any of the age-groups. By now, besides the adults, children have also become potentially concerned with the issue of obesity. Being overweight and obesity have increased across the globe in the past few years, in which Hungary is also seriously affected. WEIL's study (2011) properly illustrates the spread of being and obesity. In the year 2002 'only' 1.45 billion people were overweight (including the number of the obese people, too); in the year 2010 the number of the obese people has increased to 1.93 billion. Based on the data measured by the WHO in 2013, the rate of obesity has doubled since 1980. In the year 2008,

1.4 billion adults (aged more than 20) all over the world were overweight. Out of 1.4 billion people, more than 200 million men and 300 million women were obese. 35% of adults aged more than 20 were overweight and 11% of them were obese. 65% of the world's population lives in a country, where more people were killed by obesity than by malnutrition. It is shocking that 40 million obese children lived across the globe in the year 2011, who had not reached the aged of 5 by then. Nevertheless, it is a fact that obesity can be prevented (WHO, 2013). It is questionable that this phenomenon has serious financial concerns.

Obesity and being overweight serve as a basis for several illnesses (chronic disease), such as hypertension, cardiovascular disorders, diabetes type2, etc. Obviously, obesity has gradually become part of our daily life, with which the present day man has to fight against. It is essential to realise that prevention is the inevitable and the most important method of solving the problem. It is crucial to highlight that parents play an important role in resolving the issue. The importance of parents' role is apparent in prevention and development of childhood obesity alike. The importance of taking responsibility can be explained by the fact that parents-and especially mothers- serve as a role model in their children's life. The lifestyle led by parents will be a model to follow their children eating habits; habits of doing sports and their opinion about obesity have an influence on children's way of thinking, daily routine and their socialization into consumer culture. For this reason it does matter, what lifestyle parents led since the unhealthy parental lifestyle might paves the way for childhood obesity.

There are some factors which influence the consumer behaviour of youth (Figure 1). Some factors cannot be measured, e.g. influencing effect of tradition, social structure (macro and micro culture). Some factors can be measured, e.g. the efficiency of marketing activity, influencing effect of advertisements, influencing effect of the well-know person, prize games and free gifts, other sales promotion activities. It can be stated marketing activity has considerable effect in rising of childhood obesity and rising cost of obesity. But we must not forget the responsibility of consumers (child and parent).

**Figure 1.:** Summarized model - Influencing mechanism of consumers’ eating habits



Source: Own research, 2013

Obesity and being overweight do not spare Hungarian either. In the EU, Hungarian women are the most obese, while men occupy the fourth place. The frequency of being overweight-obese among Hungarian women is 63% as for men this rate goes up to 61% (KÁLLÓ, 2011). The details of the Hungarian data are summarized in the Table 1 below.

**Table 1:** The division of the Hungarian population based on BMI according to age and sex (%)

| BMI category | Male       |            |      | Total | Female     |            |      | Total |
|--------------|------------|------------|------|-------|------------|------------|------|-------|
|              | 18-34 year | 35-65 year | 65-  |       | 18-34 year | 35-65 year | 65-  |       |
| Underweight  | 3.0        | 0.6        | 1.4  | 1.5   | 11.3       | 3.0        | 1.9  | 4.9   |
| Normal       | 55.9       | 29.6       | 28.9 | 37.7  | 67.4       | 39.8       | 32.1 | 45.2  |
| Overweight   | 29.8       | 45.0       | 39.8 | 39.4  | 14.9       | 34.2       | 42.1 | 31.1  |
| Obese        | 11.3       | 24.8       | 30.0 | 21.5  | 6.4        | 23.1       | 23.8 | 18.9  |

Source: KSH, 2009

The existence of this problem is well demonstrated by the research of SZŰCS (2012) counting 1183 numbers. Sanitary express have taken sides in the field of being overweight. 97.8% of the test takers agreed upon the necessity of drawing attention on the dangers of obesity within the framework of a regional campaign. Severity of this problem is shown by the

fact that 60.8% of the test takers expect fast weight gain, while only 28.7% count on slow weight gain among their children. 53.7% of the experts consider it important to take steps in the near future, while further 31.8% hold opinion of the importance of taking fast and serious action towards childhood obesity.

We are entitled to ask how prevention can be effective. Consuming food with high level of fat, salt and sugar may be an important cause of weight gain, which is even multiplied by a lifestyle lacking sufficient physical exercises. According to our viewpoint, the introduction of daily PE lessons in primary education may serve as turning point, which concerns pupils of junior section from 2013 onwards. Success is not guaranteed since the child either gets to like physical activity or not (PRÓKAI, 2012). It can be effective provide schools with milk and fruit, which is a free service within the EU and which may help preserve pupils' mental and physical balance (EU 2008). This program can be a tool for an indirect way of affecting lifestyle. Another question addressed is what kind of eating habits are present in Hungarian population and what attitude they have towards physical activity (direct influence on lifestyle). Based on the data from 2012, 71% of Hungarian adults considered themselves regular eaters, while 29% regularly skip meals. The appearance of meals between the main meals shows the changes of eating habits, so every second person in Hungary eats three times a day and every third person eats four or more times a day. It causes worry that only 10.5% of the population pay attention to a healthy meal. On the other hand, 6 people out 10 do not consider it a problem to consume ready-made products and do not care about chemicals (TISZA, 2012). 4 of 10 test takers have difficulty cooking at home. Nevertheless, 46% of the interviewees have eaten out in a fast-food restaurant, especially the youngsters. One third of the test takers eat at school or at work. A survey involving students from 2012 represents a closer view to children's eating and sporting habits. 31.1% of them consume fruit on a daily basis but more than 13% do not consume it even weekly basis. The consumption of vegetables is less popular: 23.6% of them do not eat vegetables on a daily basis, while 17% do not eat it for a whole week. The presence of drinks with high sugar content and sweets can be questionable in our daily life. 31.7% of students consume drinks and 16.9% of them consume sweets less frequently than a week. Besides cutting down on food with fat, salt and sugar, physical activity is also essential to prevent obesity. As for physical activity, 17.3% of pupils does sufficient physical exercise, 30.7% of them does an unsatisfying amount of physical exercise and further 34.5% is characterised by very little physical exercise (HÍR24, 2012). Thus, the prevention of childhood obesity is not an issue to be postponed, but solving this problem ought not to be put on future generations, since launching this process is a present-day duty. It is

important to see, how and of what costumes and activities people's everyday life consist. 2009-2010 statistics of KSH highlights several problems. The numbers speak for themselves: "The major part of our spare time is spent in front of the screen- which means 57% in 2010; an average person is watching TV during two hours and forty-five minutes. The rate of couch potatoes increases systematically with age, in the case of people aged 60-74 approaches 95%. Within a day, they spend 208 minutes (approximately 3.5 hours) on average day in front of the screen." Sport and other physical activity play a minimal part in people's lives; it does not even reach 16%. Besides, parents spend a half an hour with their children every day (HÍR24, 2012). The prevention of obesity is our mutual duty. Nevertheless, childhood obesity is a real and an existing problem, however parents are indeed able to prevent and significantly decrease the probability of occurrence.

### **Aim and Methodology**

In our research, with the help of an on-line questionnaire we have examined people's consumption habits, with specific regard to consumers' health consciousness, to their consumption of food with high level of fat, salt and sugar, to the negative social and economic effects of obesity and to parents' responsibility in the spread of childhood and juvenile obesity. Within the framework of our research 308 questionnaires have been filled among mothers. Participation on this project was voluntary and anonymous. The prerequisite of taking part in this survey was having a child under 18. Completing the questionnaire could be carried out between 2012 November and 2013 January. Based on the age the mode of test takers was 35-39 years, besides the presence of people aged 30-34 and 40-44 is also significant. Our test takers were more qualified than the Hungarian average: 44.8% have completed their Matura exam while 45.5% obtained their degree. Clearly, our research is not representative, however, it may serve as a source of several interesting issue. During data processing we have applied statistic methods (mean, mode, median, Cramer's V co-efficient, Kendall's coefficient of agreement, cross table studies, etc.) with the help of SPSS 14.0 software and Microsoft Excel 2010. We have conducted descriptive surveys with simple statistic methods (mean, mode – is the value that appears the most often in a set of data, median – middle value, deviation – deviation from the average. During cross tabs survey, we used Cramer's V co-efficient to examine the stochastic relationship between the criteria and to measure the correlation. Moreover, we used with help of the correlation and regression ( $r$  and  $r^2$ ) to survey the quantity criteria.

### **Research Results**

In our research it is a crucial question of what kind of image the interviewee has about their own body shape. Based on the secondary results it may be assumed that test takers can not exactly assess their own body mass

index (BMI), and the inaccurate assessment of their shape is also common. In our questionnaire they were expected to rate their own body shape into one of the following categories: underweight, normal, overweight and obese. Based on the test takers' weight and height we later lead the chance to calculate test takers' BMI. The detailed figures are to be seen in the Table 2 below.

**Table 2:** Categories of body shape according to BMI and test takers self-assessment

|                             |             | Body shape according to test takers self-assessment |        |            |       | Total |
|-----------------------------|-------------|---|--------|------------|-------|-------|
|                             |             | Underweight   | Normal | Overweight | Obese |       |
| Body shape according to BMI | Underweight | 6   | 7      | 0          | 0     | 13    |
|                             | Normal      | 7   | 166    | 17         | 1     | 191   |
|                             | Overweight  | 0   | 14     | 36         | 3     | 53    |
|                             | Obese       | 0   | 0      | 32         | 9     | 41    |
| Total                       |             | 13  | 187    | 85         | 13    | 298   |

*Source: Own research, 2013*

The Cramer's V co-efficient, which measures the consequence of the relationship between the actual BMI category and the one assessed by test takers, is considered average (0.519). If the consumer answers rationally and consciously, the figure would be 1.00. We can state that interviewees are not fully aware of their own BMI category and underestimate the risk of obesity. A total of 46 people (14+32) underestimated their own body shape, which makes up 15.4% of test takers. They are signalled with red in the chart. The chart above clearly demonstrates that our choice of the examined sample does not reflect the body shape of the Hungarian female population in a representative way; in our sample the rate of overweight and obese women makes up only 31.5%. The data is lot more favourable than that of the Hungarian average population (50-60% depending on the age group). Martos Éva, who is the Director General of the National Institute for Food and Nutrition Science, can be cited here to analyzed the data:” In case nothing is about to change, we will face crisis situation.”(MTI, 2011). In the European Union Hungarian women stand in the first place from the point of obesity and being overweight, while men come as the fourth. In Hungary among the female population the frequency of being overweight or obese is 63%; in the case of men this rate is 61% (KÁLLÓ, 2011). The more favourable data is the consequence of the fact that the examined women are more qualified than the Hungarian average. Besides, it is interesting that 27.2% of the examined women have not been able to categorize themselves according to the appropriate BMI.

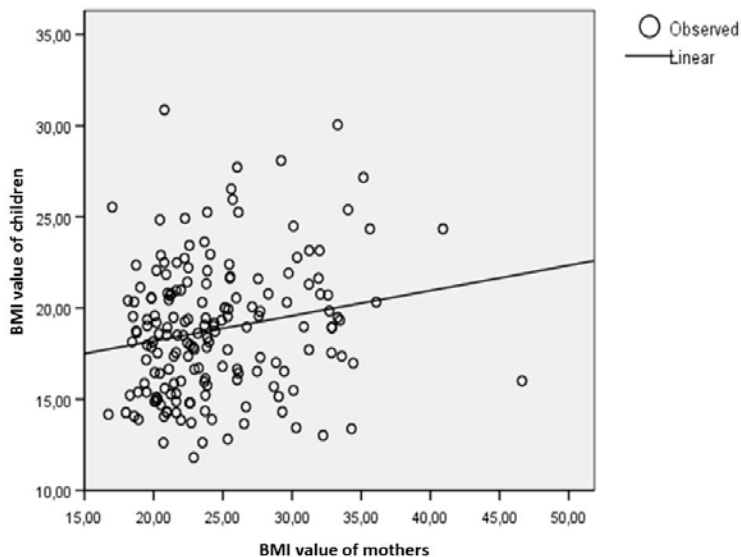
When it comes to categorizing children, the answers are even more distorted. The examined women were asked to categorize their children's body shape according to one of the BMI categories. 93.7% of the examined

women judged their firstborn children's body shape thin or normal (normal 81.7%). The rate of the „overweight” category is 5%, while that of the „obese” category is only 1.3%. In the case of second born children, the rate of the normal body shape is 78%. According to the interviewees the total rate of children judged overweight (3.1%) and obese children (2.5%) is only 5.6%. It is obviously that the examined women are quite biased against their children's body shape. Their own children are no way overweight not even fat but only a little 'flashy, crummy, plump' than their mates. During the survey, we have calculated children's BMI figures based on the data at our disposal, however we have not categorised them into body shape categories (thin, normal, overweight, obese) according to their BMI figures. The reason for this is the fact that calculating children's BMI figures is professionally accepted, nevertheless, categorising into body shape categories might be challenged: it is not totally accurate in the case of smaller children. We need more data for the categorization; what is more, it can rapidly change during children's physical development.

In our survey, we have tried to demonstrate and illustrate to what extent parents' BMI figure (dependent variable, quantitative data) can influence their children's BMI figure (dependent variable, quantitative data).

The relation between the BMI of parents and firstborn children aged 6-18 points into a positive direction, its extent is to be considered low ( $r=0.191$ ), which meets the expectations. Children's body shape and BMI are influenced by obviously several factors, among which genetic factors are also present-relying on secondary literature- generally to a small extent. This is verified by the figure of Pearson's correlation coefficient.

**Figure 2.:** The relation-analyses of mothers' BMI and the BMI of children above 6



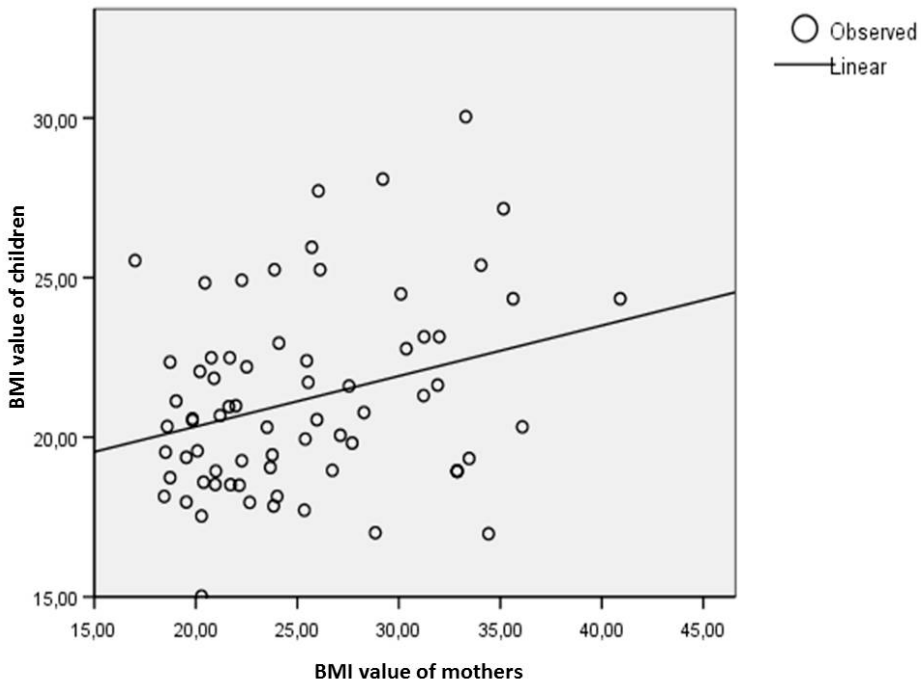
Source: Own research, 2013

The consequence of the relationship is an interesting question. The  $r^2$  figure is 0.036, which means that the regression line can explain the 3.6% of the total deviation.  $B_0$  (constant) parameter of the regression function is 15.43; while its variable  $b_1$  is parameter is 0.138; it is apparently weak pitching, but near the line reflecting the trend. The extent of the parents' BMI is 3.6% affecting the changes in children's BMI. The figure is extremely low, nevertheless, reasonable. The figure demonstrates well that parents' BMI is an influencing factor but is not a primarily one. The figure well describes individual responsibility concerning obesity; thus based on the survey excuses like „everybody is fat in our family, it is inherited”, as explanations for obesity are rather considered individual self-defence mechanisms, not real facts. Our survey does not temper parents' responsibility, since in children consuming (nutrition, lifestyle, physical activity, etc.) socialization it plays an important part.

Our research much rather demonstrates the influence on genetic factors more precisely, to what extent parents' BMI figure influence directly children's BMI figure.

In any case it is further curiosity, if we examine only the juvenile aged 14-18 depending on parents' BMI figure. In this case the socialization and pattern imitation phenomena become much easier to observe.

**Figure 3.:** The relation-analyses of mothers' BMI and the BMI of children above 14



Source: Own research, 2013



The extent of the impact compared to the previous figure has already had much higher degree, if we examine the impact only on children above 14. In this case, the „r” increases to 0.292, while „r<sup>2</sup>” will be 8.5%. The extent of the increase describes the effect of imitating parental consumption patterns, the indirect affection of children’s BMÍ figure. The „b0” (constant) parameter of the regression function is 17.17, while the value of the variable „b1” parameter is 0.158, it is obviously a proof fit, but it describes well the trend near the line. It is also clearly visible that the positive slope of the line has higher degree.

However, we have to recognize that our model has several barriers, which are listed below:

- Only women were presented in the research, but both parents take part in children’s consuming socialization. It would be recommended to broaden the sample including men.
- The sample is rather slight to draw far-reaching consequence; however, it is sufficient to represent the rationality. The data of the survey can be refined by increasing the number of test takers. However, the model definitely seems useful in practice despite of the small number of elements the major relations perfectly seem.

Besides, our survey has drawn attention to several interesting connection. 92.2% of the interviewed parents claimed to be bothered by the issue of healthy lifestyle. The responses to the question can be perceived as the affective (emotional) component of the attitude concerning healthy lifestyle. We add that the figure – based on our judgement – is unreasonably high: we must count on the phenomenon of retouching answers. In theory, 51.3% of the interviewed women regularly make steps towards making their lifestyle healthy, while 41.2% of them rarely does so. Moreover, 6.2% of them claimed that though they have not done anything for a healthy lifestyle, but definitely intends to do so. In case – naive manner – we were to accept the responses, we could say that in Hungary almost everybody lives and nurtures in a healthy conscious way, which is obviously not the case. The social willingness to live up to the questionnaire can be clearly seen.

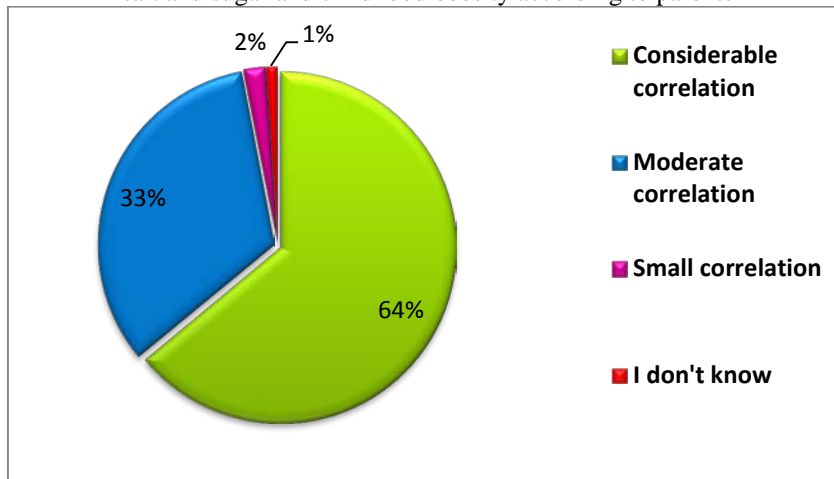
Provided that we ask about real actions from consumers we get a double picture.

- Passive consciousness: 89.2% of test takers claimed vegetables to be regular part of their die tat home. 95.1% of test takers buy fruits on a regular basis. The phenomenon is perceived as passive consciousness; the consumers’ active (physical) involvement is no tor only in a smaller extent required to form lifestyle.
- Active consciousness: The test taker’s active involvement is required to form conscious lifestyle. 23.7% of the interviewees does not do physical exercises at all on a regular basis, 50.6% of them does so at

irregular times, while 25.6% of them does so on a regular basis. In the case of their children this rate is 19.3%, 23.3% and 57.4%. It is apparent that active consciousness is significantly lower and less intense.

In order to give details about passive consciousness we have asked who took part in the survey to form opinion about the extent of the connection between consumption of food with high level of fat, salt and sugar and childhood obesity. The particulars are to be seen in the Figure 4 below.

**Figure 4.:** The extent of the correlation between consumption of food with high level of fat, salt and sugar and childhood obesity according to parents



Source: Own research, 2013

In itself the question would well demonstrate that the consumers lead a health conscious lifestyle and are aware of the risks of consuming food with high level of fat, salt and sugar. It makes the former conditional understandable, in other words giving details about conative (behaviour) tendency makes the picture full:

83.8% of the interviewed mothers claimed that they generally keep candies and chocolate at home, 33.7% of them keeps sweetened fizzy drinks, 71.4% keeps snacks at home. Among parents 20.1% consumes sweetened fizzy drinks at least on a weekly basis, while parents judge this rate 17.3% in the case of their children. This rate is extremely underestimated by parents; it contradicts every secondary data (a consumption rate of 60% is not rare at all). 18.5% of the interviewed women eats out in fast-food restaurants at least on a monthly basis. In 45.1% of these cases fast-food restaurant visits are family programmes. Not incidentally, this perfectly contributes to children's consuming socialization. Implied by the statements mentioned above we can

claim that passive consciousness works well on a theoretical basis, however the connotive component does not verify parents' initial optimism.

### Summary

Based on our survey, we can make implication about the fact that mothers are fully aware of neither their own body shape nor that of their children. In tight conjunction, 92.2% of them consider the issue of healthy way of life important. In the meantime passive consciousness is still more important than active consciousness. However, it is a distributing fact that 18.5% of them eats out in fast-food restaurant at least once a month. In 45.1% of these cases fast-food restaurant visits count as family programmes. However, 64% of test takers sees a deep connection between foods with high level of fat, salt and sugar and childhood obesity. Base on our data we can claim that solving the problem requires converting the positive attitude about healthy lifestyle into practice. Our research results also demonstrate that parents' BMI play a role in affecting firstborn children's BMI by 3.6%. A huge difference is presented among children aged 14-18, where parental pattern is extremely high, in this case the figure is 8.5%. The positive slope of the function also demonstrates the connection between the BMI of parents and children. In order to make accurate implications it would be useful to extend this research to difference social groups, including fathers as well.

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