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Stigma of obesity in adolescence
Стигма гојазности у адолесценцији

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SUMMARY

Introduction/Objective Obese children and adolescents are exposed to stigma and discrimination from peers, teachers and family which can lead to numerous health problems, including psychosocial problems.

The aim of this study is to determine whether obese adolescents in Serbia are exposed to stigmatization and which are the most common forms of stigmatization they face.

Methods The study included 335 adolescents who were hospitalized for a treatment of obesity. During hospitalization weight and height were measured, and body mass index was calculated. Participants completed independently Questionnaire about weight-based stigmatization made for the purpose of this research. Questionnaire also included questions about sex, age of respondents, and about obesity of other family members.

Results Fifty-nine percent of participants experienced offence, 19% were teased, 47.5% were subject of a gossip, and 25% were excluded from peer group; 45% reported that other people had prejudice against them. Male adolescents significantly more often faced overt forms of stigmatization/discrimination compared to female adolescents. Nineteen percent of participants were stigmatized by health workers and 6% stated that their family is ashamed of their obesity.

Conclusion A significant percent of obese adolescents is exposed to a stigma due to their weight, most often to insults, gossip and social exclusion. Obese adolescents are most often exposed to stigmatization by peers, but there are a significant proportion of adolescents who are exposed to stigma from health workers.

Keywords: adolescent, obese; obesity, stigma; body weight

САЖЕТАК

Увод/Циљ Гојазна деца и адолесценти су изложени стигматизацији и дискриминацији од вршњака, просветних радника и породице, што може да доведе до бројних здравствених и психосоцијалних проблема.

Циљ овог истраживања је да утврди да ли су и колико гојазни адолесценти у Србији изложени стигматизацији и који су најчешћи облици стигматизације којима су изложени.

Метод Укључено је 335 адолесцената хоспитализованих због гојазности. Свима је измерена телесна маса и висина, израчунат је индекс телесне масе и самостално су попунили Упитник о стигматизацији због гојазности, који је сачињен за потребе овог истраживања. Упитник је садржао и податке о полу, узрасту испитаника и гојазности других чланова породице.

Резултати Доживело је увреде 59% испитаника, 19% је задиркивано, 47,5% је било предмет оговарања, а 25% искључено из вршњачке групе; 45% испитаника је навело да су други имали предрасуде у односу на њих. Адолесценти су чешће у односу на адолесценткиње били изложени отвореној стигматизацији/дискриминацији као што су увреде или физичко насиље. Од здравствених радника је стигматизовано 19% испитаника, а 6% је навело да се породица стиђи њихове гојазности.

Закључци Значајан проценат гојазних адолесцената је изложен стигматизацији, најчешће у виду увреда, оговарања и искључивања из вршњачке групе. Најчешће су изложени стигматизацији од вршњака, али је значајан удео доживео стигматизацију од здравствених радника.

Кључне речи: адолесцент, гојазан; гојазност, стигма; телесна маса

INTRODUCTION

Adolescence is period of transition from childhood to adulthood marked with significant and turbulent changes regarding growth and development, psychological and social development. It is defined arbitrarily as period from 10 to 19 years of age, and is divided in early adolescence (10 to 13 years), middle (14 to 16 years) and late adolescence (17 to 19 years).

According to the WHO Child Growth Reference Data, children and adolescents that have BMI z-score between +2 and +3 are overweight, and children that have BMI z-score over + 3 are obese [1]. Prevalence of obesity is increasing in all age groups, but especially worrisome is dramatic increase of prevalence of obesity in children and adolescents. Between 1970s and 2012 prevalence of child obesity tripled in USA and in Canada it increased by 2.5 times [2]. In Serbia, the percentage of

overweight children went up from 8.2 to 10.1% in the period between 2000 and 2013, and the percentage of obese children increased by 1.88 times (from 2.6% to 4.9%) [3].

Stigmatized person is seen, from the point of view of others, as inferior, evil or with serious flaws because of some of its characteristic or because of being a member of particular group. Stigmatization based on body weight includes negative attitudes, beliefs that are manifested through stereotypes, prejudice and rejection of overweight or obese person [4]. Stigmatization often results in discrimination that includes unfair treatment or acting based on prejudice towards stigmatized persons.

Pediatricians in Serbia are well aware of and successfully resolve somatic problems that are consequences of obesity for many years. In many countries, in addition to the physical problems associated with obesity, considerable attention is paid to stigma and discrimination against obese children and adolescents. There are numerous studies about the stigma and discrimination of obese adults in multiple domains of living, such as work, education, interpersonal relations. More and more research indicates that stigmatization of obesity begins in childhood and continues into adolescence and throughout life. Obese children and adolescents are exposed to stigma and discrimination from peers, teachers and family [5-10].

During adolescence, stigmatization and discrimination based on weight, can lead to body dissatisfaction, lower self-esteem, overeating and other unhealthy eating behaviors, eating disorders, depressive symptoms, social isolation, substance abuse, lower academic achievement, lower education and unsatisfactory interpersonal relationships [11,12].

Stigmatization is a significant source of stress and can further aggravate the health problems that obese adolescents already face, such as insulin resistance, hypertension, dyslipidemia, chronic inflammation and the like [13,14].

Although in different countries numerous studies on stigmatization of obese adolescents were conducted, in Serbia similar research has not been conducted so far. The aim of this study is to determine whether obese adolescents in Serbia are exposed to stigma and which are the most common forms of stigmatization they face.

METHODS

The research was conducted at the Center for prevention and treatment of obesity in children and adolescents ("Čigotica", Zlatibor) during 2014 and 2015. Adolescents who were on treatment were involved in the research. The study included 335 adolescents aged 10 to 19 years, 194 (57.9%) girls, and 141 (42.1%) boys. The average age of participants was 14.27 years (SD=1.89). One hundred and thirty three (39.6%) adolescents were in early adolescence (10–13 years), 151 (44.9%) in middle adolescence (14–16 years), and 52 (15.5%) in late adolescence (17–19 years). Forty seven (14%) of participants were overweight, and 289 (86%) were obese.

Adolescents were weighed, height was measured and body mass index (BMI) was calculated. For the diagnosis of overweight and obesity WHO Growth Reference Data were used. Overweight adolescents have BMI z-score between +2 and +3, and obese adolescents have BMI z-score above +3 [1].

Participation in the study was voluntary. Participants were informed of the aim of the study and gave written consent to participate in research. Participants completed independently Questionnaire about weight-based stigmatization which was prepared by researchers. The questions were formulated according to most often cited forms of stigmatization in the literature. Following data were collected by questionnaire: sex, age of respondents, obesity of other family members, and participants experiences of weight-based stigmatization. Respondents answered questions by selecting one of the multiple choice answers on a four-point Likert scale. They had 30 minutes to complete questionnaire.

Data were analyzed using SPSS 20.0 program. To show the presence of certain categories or response, relevant variables were displayed as frequencies and percentages. For the analysis of numerical data standard procedures of descriptive and comparative statistics were used. Within descriptive statistics data are presented in the form of means, standard deviations, and frequencies and percentages. Within the methods of comparative statistics, Students t-test was used to test the differences between two independent samples, and for determining the significance of differences between more than two groups, unifactorial variance analysis (ANOVA) was used. The level of significance were set at $p < 0.05$ (the difference is statistically significant) and $p < 0.01$ (the difference is highly significant).

RESULTS

Table 1 shows stigmatization that participants experienced due to overweight/obesity and the incidence of these experiences.

Table 1. Experiences of weight-based stigmatization of participants.

Question	Never	Once in life	Several times in life	Many times in life
1. I was teased that I am fat	80.9	9.3	7.2	2.7
2. I was insulted because of weight	40.8	15.8	24.4	19.0
3. I was hit or beaten because of weight	91.7	3.0	1.8	3.6
4. I was ignored by peers	76.3	7.8	9.6	6.3
5. I was excluded from peer group	75.0	8.3	9.2	7.4
6. Peers were spreading rumors about me	52.5	14.9	17.3	15.2
7. Some people have had negative assumptions about me (I am lazy, stupid)	54.8	15.8	18.2	11.3
8. I encountered some obstacles due to my weight (e.g. The chair was small for me, I could not jump over the vaulted horse)	59.2	13.4	20.2	7.1
9. The doctor or nurse behaved badly towards me and commented on my weight	80.9	9.3	7.2	2.7
10. My family is ashamed of my weight	94.0	2.1	1.5	2.4
11. My friend is ashamed of my weight	85.7	7.4	4.5	2.4
12. I was stared at	60.1	14.6	15.8	9.5

The experience of stigmatization by gender is shown in table 2. Differences between girls and boys in the average score for each question in Questionnaire were tested using Student's t-test for independent samples. When the entire sample (10 to 19 years of age) was taken into account, boys have been more often teased or hit because of weight, than girls. Comparing other forms of stigmatization there was no statistically significant difference between girls and boys.

Table 2. Stigmatization experiences of participants by sex.

Question		x	SD	t-test	p
1. I was teased that I am fat	male	2.80	1.04	23.11	0.021*
	female	2.53	1.12		
2. I was insulted because of weight	male	2.28	1.16	0.863	0.389
	female	2.17	1.18		
3. I was hit or beaten because of weight	male	1.29	0.79	2.710	0.007*
	female	1.09	0.45		
4. I was ignored by peers	male	1.54	0.96	1.418	0.157
	female	1.40	0.86		
5. I was excluded from peer group	male	1.58	1.03	1.404	0.161
	female	1.43	0.86		
6. Peers were spreading rumors about me	male	1.89	1.16	-0.890	0.374
	female	2.00	1.13		
7. Some people have had negative assumptions about me (I am lazy, stupid)	male	1.87	1.12	0.088	0.930
	female	1.86	1.05		
8. I encountered some obstacles due to my weight (eg. The chair was small for me, I could not jump over the vaulted horse)	male	1.80	1.02	0.773	0.440
	female	1.72	1.01		
9. The doctor or nurse behaved badly towards me and commented on my weight	male	1.30	0.68	-0.448	0.655
	female	1.33	0.75		
10. My family is ashamed of my weight	male	1.14	0.55	0.546	0.586
	female	1.11	0.51		
11. My friend is ashamed of my weight	male	1.27	0.64	0.964	0.336
	female	1.21	0.64		
12. I was stared at	male	1.63	1.01	-1.714	0.087
	female	1.83	1.05		

The frequency of exposure to various forms of stigmatization of adolescents in the early, middle and late adolescence was tested using univariate analysis of variance (ANOVA). There is statistically significant difference ($p=0.029$) between age groups regarding only teasing. The oldest age group (late adolescence) achieved the highest average score, while participants from middle adolescence group had lowest average score. Post hoc comparisons using Tukey HSD test, show that in terms of exposure to teasing, there is significant difference between respondents both from the oldest and youngest age group (early adolescence) in comparison to respondents from middle adolescence age group.

Student's t-test was used to test gender differences within age groups, and it was observed that girls in early adolescence (10–13 years) more often (1.84 ± 1.06) than boys (1.43 ± 0.79) reported that someone have been staring at them because of obesity ($t(131) = -2.53$; $p=0.014$).

Six percent of participant stated that their family is ashamed of their obesity. Two hundred and twenty two (66.7%) participants had some other obese members in their family (mother, father or both parents). There was no statistically significant difference regarding the feeling of adolescents that family is ashamed of their obesity between adolescents whose parents are obese compared to those

whose parents are not obese. There were no statistically significant differences by age and gender in relation to stigmatization by obese or non-obese parents.

One fifth (19%) participants experienced stigmatization on one or more occasions from health workers. Girls aged 17 to 19 years (late adolescence) reported statistically significant more often than boys of the same age (girls 1.40 ± 0.00 ; boys 1.00 ± 0.81) that the doctor or nurse stigmatized them and commented on their weight ($t(50) = -2.30$; $p = 0.012$).

DISCUSSION

Stigmatization and discrimination against obese people represents a serious social issue. It has been estimated that prevalence of stigmatization and discrimination against adult obese people in the USA is very high and could be compared to prevalence of racial discrimination. In the period between 2004 and 2006, 12% of obese people were exposed to discrimination due to obesity and 11% to racial discrimination [15, 16].

A high percentage of participants of our research were exposed to various types of stigmatization and discrimination. Forty-five percent of the participants reported that other people had prejudice against them (as being stupid, lazy etc.), 47.5% of participants were subject of a gossip, 25% were excluded from social life by the peer group and 14% reported that their obesity was the subject of their friends' shame. Baccini et al. reported the obese children and adolescents were often subject of a gossip among the peers (11,5%–14,5%), were ignored (10,1%–14,5%) or excluded from the peer group or their activities (14,3%–18,5%) [17].

Due to obesity 59.2% of our participants experienced offence. When compared to our results, Puhl et al. reported that 83% of adolescents aged 14-18 in the weight loss treatment-seeking sample experienced being called names (calling names- to name someone degrading names) [18]. According to our results, 19.1% of participants were teased due to their weight. Similar results were reported by Madowitz et al. [19]. These findings are of great importance as teasing and social rejection were connected to psychological problems, lower academic achievements, unhealthy weight control behaviors such as strict dieting, fasting, self-induced vomiting, excessive physical activity, misuse of diet pills, diuretics and laxatives [19].

Bucchianeri et al. report that weight-based teasing and harassment were more prevalent than teasing and harassment associated with race, sex or socio-economic status. Weight-based teasing was associated with lower self-esteem and body satisfaction [20]. According to our results there was no significant difference between girls and boys in prevalence of weight-based teasing. However, results from the USA clearly show that female participants were significantly more often teased due to their weight [20].

When comparing the prevalence of any form of weight-based stigmatization in the early, middle and late adolescence, participants who belonged to late adolescent group most frequently reported weight-based teasing. On the contrary, bearing in mind the fact that late adolescence is a

period when young people are becoming significantly more tolerant of differences and physical impairments, show more empathy and are better socialized, generally have a better insight into their own values and qualities regardless of obesity, it would be expected that teasing often occurs as unpleasant experience during the early and middle, but not in late adolescence. Haines reported similar results to ours- that teasing due to weight remains frequent throughout adolescence until young adulthood and it even becomes more frequent with male adolescents in this age group [21].

During the research participants have been asked if and how many times they had unpleasant weight-based experience, but the age when they were exposed to these experiences was not the subject of our research. Therefore, we are not able to draw any conclusions as to whether teasing as the most commonly reported type of stigmatization has been reported by participants belonging to the oldest age group because they had the longest period to be teased (cumulative effect) or because they reported teasing as the type of stigmatization that affected them most and as a result had been memorised most and the longest.

Every seventh participant (14%) reported that his friends were ashamed of him due to his obesity and it points to the stigmatization of obese adolescents by peers as well as their view of obese adolescents as inferior comparing to others. We did not found similar research in available literature.

There were 8% of our participants who reported to have been victims of physical violence. Baccini et al. also point that the victims of physical violence are far more likely overweight and obese children and adolescents than their counterparts with healthy weight [17].

When all weight-based negative experience were taken into account, male adolescents significantly more often faced overt forms of stigmatization such as verbal insult and physical violence compared to female adolescents. Female adolescents, especially in early, adolescence, significantly more often reported non-verbal forms of stigmatization (“they stared at me”). Pearce et al. also came to conclusion that male adolescents more often reported overt stigmatization such as weight-based teasing and harassment, while female adolescents more often reported relational peer victimization such as exclusion [6].

It is well known that adolescents are preoccupied with their appearance and it is disturbing if they are different from their peers. It is likely that female adolescents are more vulnerable than male adolescents to non-verbal signals, therefore reporting more often that somebody stared at them. Eisenberg et al, and Rojo-Moreno et al. report that teasing due to body weight is more often reported by female than male adolescents [22,23]. It is necessary to carry on additional research in order to find out whether there is difference in exposure of girls and boys to stigmatization or it is a matter of difference in their perception and vulnerability to certain forms of stigmatization.

Six per cent of participants said that their family felt ashamed because of their body weight and there was no significant difference when it comes to either sex or age. Leme et al report that 39.9% female adolescent experienced weight-based teasing by family members [24]. This results can not be

directly compared to the results of our research, but it seems that families in Serbia are more tolerant in regard to adolescents' obesity or are not aware of the problem.

If a parent feels guilty conscious for a child who is overweight, especially if this feeling is accompanied by unsuccessful attempts to reduce body weight, it is possible that the parent expresses its anger, feeling of helplessness and frustration through stigmatizing attitudes and behaviours such as criticizing and negative comments about their overweight child. Berge et al. state that unpleasant conversations in the family referring to body weight are more often initiated by mother and older siblings than by other family members. Conversations initiated by mothers focused on negative health consequences for being overweight while conversation initiated by fathers and siblings mainly focused on appearance and had a form of teasing [25].

According to the findings of our research there was no significant difference in stigmatization between families of our participants whose parents were overweight and those whose parents were of healthy weight.

Nineteen percent of our participants had unpleasant experience with health workers. In the period of late adolescence, girls reported significantly more often than the boys that health workers misbehaved towards them. It is possible that the girls are more vulnerable than the boys to stigmatizing behavior of health workers in this period and that they easily recognize these forms of stigmatization. Findings of different researchers point that doctors and health workers have strongly negative attitudes towards overweight people [26, 27, 28]. Many health workers believe that overweight patients are lazy and lacking self-discipline and are personally responsible for their weight because they do not stick to the prescribed treatment and therefore deserve to be the subject of offensive jokes.

Despite the abundance of data about stigmatization of obese adult people by health workers, we have found only two papers about negative attitudes and anti-fat bias among health workers who work with children and adolescents. According to findings of Neumark-Sztainer et al. more than a half of school nurses have prejudice and negative attitudes towards overweight persons [29]. Garcia et al. also report weight biased attitudes toward obese pediatric patients among pediatric nurses and clinical support staff [30].

This research has been carried out as cross-sectional study and it included only adolescents who were on a hospital treatment of obesity. It would be useful to research prevalence of weight-based stigmatization in general population in Serbia. Carrying out longitudinal research would make it possible to monitor stigmatization based on body weight during adolescence in different age groups.

CONCLUSION

A significant percent of obese adolescents in Serbia is exposed to a stigma due to their weight. They are most often exposed to stigmatization by peers, but there are a significant proportion of adolescents who are exposed to stigma from health workers, as well as parents.

Male adolescents are more often exposed to insults and physical violence while adolescent girls in early adolescence perceive covert forms of stigmatization more often than boys of the same age. Female adolescents were exposed to stigmatization by health professionals, more than males.

Longitudinal study of weight-based stigmatization in the general population could provide answers to questions about the presence of stigma among normal weight, overweight and obese adolescents, as well as the incidence and forms of stigmatization in different age groups.

It is necessary to educate health workers and the general population about the stigma of body weight and its harmful effects, in order to implement measures to mitigate consequences of stigmatization of obese adolescents and to plan and implement measures to prevent stigmatization.

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