PERSONALITY AS A SUBJECT OF LIFE: PROBLEMS OF HEALTH AND DISEASE

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ПСИХОЛОГИЧЕСКИЕ ОСОБЕННОСТИ ЛИЧНОСТИ ДЕТЕЙ С ИЗБЫТОЧНОЙ МАССОЙ ТЕЛА И ОЖИРЕНИЕМ

PSYCHOLOGICAL PECULIARITIES OF PERSONALITY IN CHILDREN
WITH AN EXCESSIVE BODY MASS AND OBESITY

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Аннотация:

Ожирение – одно из наиболее распространенных хронических заболеваний среди детского населения. Изучение психологических особенностей личности у детей с ожирением играет важную роль в формировании поведенческих реакций, изменении образа жизни, соблюдении ребенком немедикаментозных методов коррекции.

С целью изучения психологических особенностей личности у детей с избыточной массой тела и ожирением было обследовано 170 детей в возрасте 9-10 лет, проживающих в Рязанской области. В основную группу (n=46) вошли 20 девочек и 26 мальчиков с избыточной массой

Abstract:

Obesity is one of the most common chronic diseases among children. The study of the psychological characteristics of the personality of children with obesity plays an important role in the formation of behavioral reactions, lifestyle changes, and adherence to the child's non-drug correction methods.

In order to study the psychological characteristics of the personality in children with overweight and obesity, 170 children aged 9-10 years living in the Ryazan region were examined. The main group (n=46) included 20 girls and 26 boys with overweight and obesity, the comparison group (n=124) consisted of 68

тела и ожирением, группу сравнения составили (n=124) 68 девочек и 56 мальчиков с нормальной массой тела. Особенности личностных черт определяли с помощью детского варианта теста Кеттелла.

Выявлено, что у детей с избыточной массой тела и ожирением показатели, характеризующие доброжелательность, смелость и эмоциональную устойчивость были достоверно ниже, чем в группе сравнения. Статистически значимо различались средние показатели факторов А, С, Н, G, I, Q4.

В результате исследования сделан вывод, что личностные особенности у детей с ожирением и избыточной массой тела проявляются не общительностью, замкнутостью и социальной пассивностью обуславливает затруднение социальной адаптации в среде сверстников и, вероятно, оказывает влияние на алиментарное поведение. Это определяет целесообразность включения в комплексное лечение ожирения психотерапевтических методик как обязательного компонента немедикаментозной терапии.

Ключевые слова:

ожирение, дети, черты личности, тест Кеттелла.

girls and 56 boys with normal body weight. Features of personality traits were determined using the children's variant of the Cattell test.

It was revealed that in children with overweight and obesity, indicators characterizing benevolence, courage, and emotional stability were significantly lower than in the comparison group. Differences in factors A, C, H, G, I, Q4 were statistically significant.

The study concluded that the personality traits in children with obesity and overweight are not social, isolation and social passivity make it difficult for social adaptation in the peer environment and probably affects alimentary behavior. This determines the feasibility of including psychotherapeutic methods in the complex treatment of obesity as an indispensable component of non-drug therapy.

Keywords:

obesity, children, personality traits, Cattell test.

Relevance

Childhood obesity is one of the main public health problems worldwide. According to the WHO, in 2016, about 41 million children under the age of 5 and 340 million children aged from 5 to 19 were overweight or obese. This pathology, previously considered well spread in countries with a high level of socio-economic development, is now becoming more common in countries with low and medium incomes. In Africa, since 2000, the number of obese children has almost doubled; in 2016, almost half of children under 5 years old with excess body mass or obesity now live in Asia [1]. The same trend is observed in the child population in the Russian Federation: in 2017, the prevalence of obesity was 363.3 per 100,000 children under the age of 14 years and 733.4/100,000 children between the ages of 15 and 17 [2]. In Ryazan region, in 2017, 3627 cases of childhood obesity were registered (1884.2/100000), which is 2.5 times higher than the national average [3].

Issues of life quality and psychological well-being with this or that pathology always attract specialists of various profiles [4]. However, in the case of obesity, there are conflicting opinions. Thus, Jane Wardle and Lucy Cook in 2005 expressed their

opinion about the “myth of psychological maladaptation” of obese children. They stated, “the persistence of the myth of the psychological maladjustment of overweight and obese children is striking...” [5, P. 423]. In the same year, Karl Eric Flodmark published a brief review of the literature entitled “A happy child with obesity” [6]. Both publications reported that a very small number of obese children are depressed or have low self-esteem. Later, Andrew J. Hill (2017) wrote “... many obese people, both adults and children, have high self-esteem, do not suffer from depression, have well-paid jobs and good social relations...” [7, P. 68]. However, most modern researchers believe that children with excess body mass and obesity have psychological and behavioral disorders, poor ability to social adaptation [8, 9], they are more egocentric, less obedient and more irritable [10], have low self-esteem [11].

Studies conducted in recent decades have proven the relationship between the child's body weight and family lifestyle. They indicate that obesity is associated with family dysfunction: unhealthy eating habits, a family model of excessively inactive leisure, lack of regular exercise and lack of understanding by parents of the problem of childhood obesity [12-14]. All this complicates the emotional and behavioral support so needed in the treatment of obesity. Kimberley M. Mallan et al. (2017) investigated the relationship between the psychological problems of obese children and eating behavior and concluded that the emotional state of a child significantly affects his eating behavior, and food susceptibility positively correlates with emotional problems and body mass index (BMI) [15]. All this indicates that the psychological state in obese children plays an important role in the formation of eating habits and behavioral reactions. In turn, the correction of the revealed features, along with a change in lifestyle, should become an integral part of the complex of non-drug methods of treatment of obesity.

The purpose of the study is to study the psychological characteristics of personality in children with overweight and obesity.

Materials and methods

We examined 170 children (88 girls and 82 boys) aged 9-10 years living in the Ryazan region, with the absence of severe hereditary pathology. Anthropometric indicators were evaluated during routine examinations with subsequent calculation of BMI (kg/m²). The measurement of body weight (kg) was carried out on electronic medical scales with an accuracy of 50 g. The measurement of height (cm) was carried out using a medical stadiometer with a folding stool in a standing position. According to the manufacturer of the height meter, the measurement accuracy is 0.1 cm. The physical development of children was assessed according to WHO growth standards (2006) using the WHO AnthroPlus (2009) program. Nutritional status was determined by Z-score: the number of standard deviations (SDS), by which the value of the anthropometric indicator differs from the median value of the standard

population. The following indicators were calculated: body weight by age (Weight-for-Age Z-score, WAZ), body mass index (BMI) by age (BMI-for-Age Z-score, BAZ). In accordance with WHO recommendations, the interpretation of the obtained Z-scores was carried out according to the following criteria: WAZ - deficiency of body weight - at <2 SDS, normal - from -2 to $+2$ SDS, excess body mass or obesity - at $>+2$ SDS; BAZ - malnutrition - with <-2 SDS, normal - from -2 to $+1$ SDS, overweight - with SDS from $+1$ to $+2$, obesity - with SDS $>+2$ [1].

According to the results of anthropometry, all children were divided into 2 groups: 1 group ($n = 46$) consisted of 20 girls and 26 boys with excess body mass and obesity, a comparison group ($n = 124$) - 68 girls and 56 boys with normal body mass. Features of personality traits were determined using the children's version of the Kettel test [16]. This technique includes 12 scales corresponding to the main personality traits of a child (goodwill, intelligence, emotional stability, excitability, independence, nonchalance, honesty, courage, kindness, depression, self-control, tension). The level of development of different personality traits was assessed according to the number of points with a further distribution depending on the intensity of the severity of the factor: low (from 1 to 3 points), medium (from 4 to 7 points) and high (from 8 to 10 points).

Results and Discussion

The processing of statistical data was performed using the Statgraphics Plus software package for Windows 2007 and Excel 2007. The decision on the type of distribution of the data obtained was based on the Shapiro-Wilk test. Considering that the analyzed characteristics had a normal distribution, the data were described as an average value ($M+m$), the characteristics of independent samples were compared using a two-sample t-test with different variances and Excel 2007. The differences of the characteristics were taken into account as statistically significant at $p < 0.05$.

When comparing the two groups, statistically significant differences were revealed for the following factors of the Kettel test:

1. Factor - A ($t\text{-st.} = 6.16$ at $t\text{ cr.} = 1.67$);
2. Factor - C ($t\text{-st.} = 4.81$ with $t\text{ cr.} = 1.65$);
3. Factor - G ($t\text{-st.} = 3.71$ at $t\text{ cr.} = 1.65$);
4. Factor - H ($t\text{-st.} = 5.77$ at $t\text{ cr.} = 1.65$);
5. Factor - I ($t\text{-st.} = 2.17$ at $t\text{ cr.} = 1.66$);
6. Factor - Q4 ($t\text{-st.} = 3.55$ at $t\text{ cr.} = 1.66$).

In children with excess body mass and obesity, a tendency toward non-communicability, isolation and excessive rigor in the assessment of people was revealed, i.e. there were low indicators on scales A and H (Table 1). Among the children of the main group, 41.9% of the children had low scores on the scale characterizing goodwill, which was 2 times higher than the same indicator in the comparison group

(20.0%, $p=0.01$). Average scores on the same scale were statistically significantly higher in children with normal body weight (78.2% versus 58.7%, $p=0.02$).

Factor H, characterizing courage, was statistically significantly lower in children with excess body mass and obesity compared with children of the second group (41.30% versus 18.55%, $p=0.005$), where higher average scores were noted ($p=0.01$).

Such children are distinguished by coldness and formal contacts, they are not interested in the lives of people around them, also prefer to communicate with books and things, try to work alone, and when conflicts arise, they are not inclined to compromise. They differ in distrustfulness, excessive touchiness and lack of intuition in interpersonal relationships. Children with such traits have less interest in communicating with other people, which in turn can lead to a decrease in physical activity as a result of longer spending time watching TV or playing a computer game. These features were most pronounced in girls with excess body mass and obesity compared with girls in the comparison group (55.88% versus 38.46%, $p=0.02$).

Factors characterizing features in the emotional-volitional sphere (C, Q4, O, G, I) in children with excess body mass and obesity also differed from the comparison group. Among the children of the first group, 95.7% had low, and 4.4% had average indicators on a scale of C, which characterizes emotional stability. Among children of the second group, low rates were found in 80.4%, and average ones – in 19.6% of cases. Accordingly, children with excess body mass and obesity had lower characteristics on the C scale ($p=0.03$), which is manifested by a lack of responsibility, moodiness, an acute reaction to failure, low self-esteem, and mood instability in their behavior. These poor children control their emotions, have difficulty adapting to new conditions.

The average value of the indicator on the O scale, which characterizes depression, in children with excess body mass and obesity was 3.0 ± 0.4 points and exceeded that in the comparison group (2.4 ± 0.2 , $p=0.02$). Higher scores on this scale characterize the personality characteristics of an anxious, easily crying, depressed, anxious, nervous child. Such children are prone to sad thoughts alone, are easily susceptible to various fears, and are difficult to survive any life failures. They do not believe in themselves, are prone to self-blame, underestimate their capabilities, knowledge, abilities. Moreover, they are characterized by such qualities as a developed sense of duty, susceptibility to other people's influence, the dependence of their mood on the approval or disapproval of others. Such children feel uncomfortable and insecure in society, they keep modestly and apart. These neurotic aspects can lead to obesity through depressive mechanisms, including increased appetite, lower activity and metabolic dysregulation.

The average score on the G scale, characterizing honesty, was statistically significantly higher in the group of children of the main group ($p=0.0003$). Moreover, boys with excess body mass and obesity had a lower G score than girls of the same

group ($p = 0.002$), i.e. they were more prone to inconstancy, not self-collected, had a tendency to sociopathy. These traits indicate poor performance and much less energy, which in turn can lead to less active self-determination, such as playing with other children or lacking a hobby.

The average indicator for factor I, which characterizes kindness in children of group 2, was statistically significantly higher compared to the comparison group (2.9 ± 0.3 versus 2.3 ± 0.4 , $p=0.03$). Moreover, the severity of this factor was higher in girls of the comparison group in relation to the girls of the main group ($p=0.04$).

Table 1.

The severity of the factors of the Kettel test

Factors of the psychological portrait of a person	Children with normal body weight (n = 124)	Overweight and obese children (n = 46)	P_t
	$M \pm m$	$M \pm m$	
A (goodwill)	$5,7 \pm 0,3$	$3,5 \pm 0,5$	0,0000
B (intelligence)	$4,5 \pm 0,3$	$4,3 \pm 0,6$	$p=0,6$
C (emotional stability)	$2,9 \pm 0,3$	$1,8 \pm 0,3$	0,0000
D (excitability)	$3,3 \pm 0,3$	$3,3 \pm 0,5$	0,9
E (independence)	$2,1 \pm 0,1$	$2,1 \pm 0,3$	0,8
F (carelessness)	$2,8 \pm 0,3$	$2,6 \pm 0,5$	0,4
G (good faith)	$3,4 \pm 0,3$	$2,3 \pm 0,4$	0,0003
H (courage)	$5,7 \pm 0,3$	$3,8 \pm 0,6$	0,0000
I (kindness)	$2,9 \pm 0,3$	$2,3 \pm 0,4$	0,03
0 (depression)	$2,4 \pm 0,2$	$3,0 \pm 0,4$	0,02
Q3 (self-checking)	$2,7 \pm 0,3$	$2,3 \pm 0,4$	0,09
Q4 (tension)	$3,2 \pm 0,3$	$2,2 \pm 0,4$	0,0006

There were also differences between the groups according to the Q3 factor characterizing self-control, however, they were not statistically significant. Children with excess body mass and obesity had lower average values on this scale (2.7 ± 0.3 versus 2.3 ± 0.4 , $p = 0.09$). Such assessments are typical for weak-willed and poorly controlled people. These qualities can reduce the effectiveness of non-drug methods for correcting obesity, due to the special difficulties in following a diet and adherence to performing physical exercises.

It should also be noted that there is the absence of differences on a scale B, which characterizes the intellectual properties of the individual. Children in both groups had average severity of this factor.

Conclusions

Thus, the study showed personality traits among children with obesity and excessive body mass, which manifested more pronounced characteristics in the form of non-sociability, isolation, and social passivity, which leads to difficulties in social adaptation among peers and is likely to affect nutritional behavior.

The inclusion of psychotherapeutic techniques in the complex treatment of obesity is an appropriate component of non-drug therapy. Dynamic monitoring of the state of psychological characteristics in children with overweight and obesity will determine the effectiveness of the complex therapy.

There is no conflict of interests.

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