ENABLING AWARENESS TO IMPROVE HEALTH THROUGH THE AFFIRMATION OF STATISTICS ON A GLOBAL SCALE FOR THE INSIGHT OF ANTHROPOMETRIC INFLUENCES ON THE IMPROVEMENT OF MOTOR, PSYCHOLOGICAL AND SOCIOLOGICAL DEVELOPMENT IN ADOLESCENTS

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Abstract

The prevalence of obesity among adolescents is increasing globally, which creates a need to highlight it as part of the health challenges of the future. All this is due to unhealthy eating habits, reduced movement, as well as the potentials for growth and development in the social community itself.

There are a number of scientific practices that actualize the importance of the role and connection of anthropometric traits with the overall weight of the person, which especially alludes to the need for trend analysis among adolescents.

The very differences in anthropometric characteristics create a real insight into an existing trend of influence on the general state of health, with special reference to the motor, psychological and sociological development of the personality.

The aim of the scientific paper is to display existing and current relevant data regarding the prevalence of obesity among adolescents, in order to derive relevant recommendations for preventive action in a given social frameworks, as well as psycho-social influence and surrounding.

In the context of the above, according the methodology obtained, the analysis takes into account data from descriptive statistics, level of nutrition, that is, overall nutrition status. Moreover, significant important is given to method of generalisation and synthetisation, method of comparison and method of analysis of content.

The overall results and impact of the current analysis are targeting the technological challenges that adolescents are exposed to, which has a direct impact on their lifestyle, and thus on their psycho-physical activity and condition.

Keywords: prevalence, obesity, motor, psychological, social, development

1. Introduction

Anthropometric traits are closely related to health improvement, as well as motor skills, psychological and sociological development. Therefore, it is of particular importance to pay attention to, in continuity, research on the revealed differences in anthropometric characteristics among different target groups, and within this research, with special reference to adolescents. In the context of the above, it is important to emphasize the connection between the way of life of adolescents and the opportunities offered by technological development, in terms of direct influence on the behavior, diet and physical activity of adolescents.

There is a great number of researches that supports the connection between lifestyle, diet and the impact of technological development on adolescents. A large number of researches in health sciences, but also other disciplines that fall under their domain, such as sports sciences, emphasize the connection of segments within the psychosomatic status of a person. Every growth and development of the body is defined by the quantitative and qualitative anatomical, physiological and psychological changes that appear in the body itself, with special attention and reference to the development of sensory and motor skills (Huse, Reeve, Baker, Hunt, Bell, Peeters & Backholer, 2022).

Obesity is one of the most serious health problems in Europe and globally. Therefore, there is no unified approach to combating this condition, but it is necessary to take into account multiple influencing factors involved (Balint, Dobrescu, Rata & Cristuta, 2010).

In the context of the above, it is necessary to take into account several influencing factors, such as endogenous factors (heredity, sex, race, hormonal status), as well as exogenous factors (socio-economic status and conditions, diet, chronic diseases, physical activity, geographic/climatic changes).

Obesity in adolescence is the cause of further diseases of the body, i.e. encouraging negative consequences for health, which easily become chronic and create a large number of obstructions in the functioning of the body.

Statistics and a large number of scientific research emphasize the prevalence of obesity among adolescents, in a global framework, which becomes a key public health problem and challenge of the future. The causes target different influences in everyday frameworks, especially consumption of unhealthy, fast food, insufficient movement and thus, acquiring long-term low-quality life habits (Xiaozhi, Li Peng & Zhang, 2019).

Within the framework of this scientific paper, through the presentation of several conducted researches, several relevant conclusions are drawn regarding the global obesity situation in the world, with reference to the adolescent group. In addition, through the presentation of anthropometric measurements, their connection with motor, psychological and sociological development among adolescents is highlighted. This situation is complemented by the technological challenges that the new generations are facing and are exposed to their influence, which distracts them from physical activity and a healthy diet.

The main research question posed in this paper is the following: „To what extent one can talk about anthropometric influences on the improvement of motor, psychological and sociological development among adolescents?"

2. Literature review

A large number of research papers and analyzes are dedicated precisely to the analysis and interpretation of the connection between obesity and physical activity and body mass. According to a study that examines risk factors, their association with the health of obese people, results indicate that obesity of the 2nd and 3rd degree, has a significantly higher mortality compared to the 1st degree (Flegal, Kit, Orpana & Graubard, 2013).

One of the ways to control obesity is to regularly measure the morphological characteristics of the human body. This approach is regularly applied in the field of sports medicine, as well as in the field of physical education and sports science. Through this type of measurement, in fact, not only does one gain insight into the real situation, but it also helps the makers of public health policies to get a clearer picture and perception regarding the current situation as well as the measures and activities that need to be implemented. to better deal with it.

In addition, through this kind of active, social action, the setting of quality norms in the system is influenced, for alerting the real social situation on this issue and giving concrete directions in that domain. Consequently, regularly confronting the public in a given area with the degree of obesity and promoting anthropometric measurements, helps in the practical goals of leading social policies in this direction.

BMI is used to define the medical standard for obesity. Moreover, if increased BMI values are observed, in fact, they have a direct impact on increasing the risk of cardiovascular diseases (hypertension, myocardial infarction and pulmonary diseases, sleep apnea syndrome), especially in adolescents. This phenomenology is also described in reports of the World Health Organization. However, BMI does not measure the amount of adipose tissue, nor to localize the adipose tissue in the body, during various processes of growth and development. Therefore, in addition to BMI, other parameters are used, such as waist/hip ratio (WHR), waist/height ratio (WSR), which also play a major role in diagnosing obesity.

3. Research framework and discussion

Within the framework of a research conducted in Montenegro (Belo Pole), on a sample of a total of 60 respondents, adolescents, average age of 17 ($\pm$), the following data were ascertained: (1) 41 male students (average height, 178.07 ± 7 .52 cm; body weight, 68.29 ± 10.91 kg; BMI, 21.50 ± kg/m2); 19 female students (mean height, 163 ± 7.14 cm; body weight, 57.89 ± 9.75 kg; BMI, 21.82 ± 3.49 kg/m2). It is about students/respondents who regularly attended physical education at school. Regarding the included variables, in order to perform an adequate analysis of the somatic status, the following were taken into account: (1) 1- Body height (AVIS-cm); (2) 2- Body weight (AMAS-kg); (3) 3- Body mass index (BMI-kg/m2). What is of particular importance within the framework of this research is that the obtained BMI values, as well as certain information regarding the physical activity of the respondents, are actually used to assess the nutritional status of the respondent, as well as the percentile range (Pavlovic, Mihajlovic, Idrizovic, Vrcic & Stankovic, 2018).

Status	Percentile Range	BMI, kg/m^2
Malnutrition	< 5th	< 18.5
Normal nutrition	5th to 85th	18.6 - 24.9
Excessive nutrition	85 to < 95th	25 - 29.9
Obesity I degree	> 95th	30 - 34.9

Figure 1

Source: Pavlovic R, Mihajlovic I, Idrizovic K, Vrcic M, Stankovic D, et al. (2018). Differences in Anthropometric Traits and Trend of Changes in High School Students. *Int J Sport Stud. Hlth.* 1(1): e68101.

Regarding the discussion of this conducted research, a trend of changes in the psychosomatic status of the body, especially within the framework of the physical status, has been determined. At the same time, overweight is highlighted as a complex disorder that has been on the rise in the past decade, and at the same time, it is becoming a major health problem worldwide. Obesity is mostly associated with reduced or insufficient physical activity, which is acquired as a trait from an early age. Therefore, if there is a low level of physical activity, it particularly negatively affects the psychomotor and psychosomatic characteristics of the students. The final results of this research show that the incidence of obesity is increasing in all age groups in both sexes. The more the index exceeds the range of the normal value, the greater the risk of developing various heart diseases, diabetes and high blood pressure. One suggestion that continues as a roadmap emerging from this research is that high BMI at age 10 predicts obesity at age 16.

Regarding the obtained results, which are worth discussing, significant differences can be seen, as an indicator of condition, in relation to body height and body mass between male and female students (Domagoj, Vlatka & Petar, 2010). In addition to this, a particularly useful indicator of condition is the study of nutritional status, paying attention to WHR.

In another study, a target group of 12-year-old children (Total 152 children, 103 boys and 49 girls, with fully performed anthropometric analyzes and measurements) from the University of Verona was included, with the aim of assessing possible relationships between selected anthropometric parameters and motor abilities, and in addition the influences from the environment (which focus on psychological and sociological development) (Milanese, Bortolami, Bertucco, Verlato & Zancanaro, 2010).

In relation to this conducted research, the following conclusions were obtained:

1) There is a correlation between waist circumference and subcutaneous fat;
2) Motor skills and fitness readiness significantly correlate with age, while performance is higher among male subjects;
3) BMI does not correlate with physical fitness tests;
4) Motor fitness tests correlate positively with each other, especially in the female gender
5) There is a significant relationship between age and motor fitness;
6) Somatic dimensions are related to basic motor dimensions;

7) Body weight and massiveness are negatively correlated with motility and fitness because the body is designed or does work against gravity (such as running, jumping, sit-ups);
8) Motor performance improves with age;
9) Growth and nutritional nutrition affect the physical condition of children and adolescents;
10) Obesity negatively affects physical fitness and is related to health and performance;

What is important to point out is that the parallel assessment of anthropometric parameters, motor abilities, psychological and sociological development, will provide a higher level of accurate information about the development process among adolescents, primarily through different evaluation tests.

As part of a study conducted, the relationship between the use of technology and the level of physical activity is investigated, to measure the association between the sociodemographic characteristics of the participants, the use of technology and the level of physical activity (the research was conducted among Saudi children) (Alotaibi, Almuhanna, Alhassan, Alqadhib, Mortada, Alwhaibi, 2020). The research covers a group of children between which there is a limit of children from 6-12 and adolescents. As a cross section, 458 families, parents and children were examined. The questionnaires consisted of: (1) Children's Physical Activity Questionnaire (CPAQ); Questionnaire on the impact of technology on children; (3) sociodemographic issues. Data analysis revealed that high technology use was significantly associated with low activity levels. Pearson's correlation analysis showed a negative relationship between high activity level and technology use ($r = -0.138$, $p = 0.047$). According to an additional regression analysis, it is seen that the age of the child, the educational level of the parents, the use of time in front of the screen and the possession of electronic devices significantly predict the level of practicing physical activity among children of parents taken in the sample ($p < 0.05$).

4. Conclusions

A wide waist circumference has been found in a number of studies to have a particularly high tendency for hypertension, diabetes, increased blood fat and metabolic syndrome. Heredity also plays an important and crucial role in human growth and development. In fact, body weight and obesity are under strong genetic control, while the environment in which a person grows up has relatively little influence. Consequently, a healthy, nutritious lifestyle stands out as an important means of preventing obesity and maintaining the health of adolescents, faced with all the challenges of modern life. What is especially important is to regularly monitor and record the changing trend of physical traits, especially those who follow a bad lifestyle.

Subcultures also have a part in the health policies that are undertaken in a certain area. They need to have a structured and strategic effect, in relation to the target group they are aimed at. This is especially important because the prevalence of obesity begins to grow particularly rapidly, and manifests itself even in preschool age. What is important is to initiate healthy eating patterns, especially to encourage it in preschool and school age. Adolescents need to be monitored more often and constantly exposed to advice on encouraging physical activity and nutritious diet.

5. Recommendation

In the future, it is necessary for every society to strive for a unified policy that will refer to the application of regular nutrition in a healthy way, but also the encouragement of physical fitness from an early age. It is necessary to adjust the internal culture within social frameworks. Overweight is becoming a global syndrome, and certain diets are not at all effective or recommended for adolescents. In that direction, the whole organism plays a role, and mostly to have an insight into the influences that are encouraged in the body itself. First of all, it is a matter of insight into anthropometric influences on the improvement of motor, psychological and sociological development in adolescents. This area is very important although it cannot always be studied in a complete framework, primarily due to the difficulty of detecting the impact of the environment on psychological and physiological development. It is in this direction that the recommendations of this paper move - obesity should not be considered as an isolated phenomenon and access to it should also be sought through insight into anthropometric measures and variables, especially their connection with motor, psychological and sociological development. Effective policies are needed in school centers in this domain. In addition, in order to prevent the negative impact of technology, regular checks must be carried out by an expert team, but also greater involvement of parents in the younger age of children (in order to establish a certain order in adolescence) for appropriate physical activity among children. The use of screen and the possession of electronic devices should be brought under control.

Limitations of the study

The applied research framework consists of the analysis and interpretation of several conducted studies, while using their secondary data. In this way, essential data were extracted that create an image and perception of the importance of a certain issue. However, in the future it is important to conduct primary empirical research, for greater relevance of the research process itself and its appropriate applicability.

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