

ACTIVITIES AS AN IMPORTANT COMPONENT OF THE OVERALL DEVELOPMENT OF CHILDREN WITH DEVELOPMENTAL DISABILITIES***Hana Hubjer**

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Abstract

In modern times, children increasingly spend their free time in front of computers and televisions, including children with disabilities, while true values such as socializing with peers and engaging in indoor and outdoor activities are often neglected. The aim of this study was to determine how successful children with developmental disabilities are in performing sports activities and to what extent these activities influence their overall development. The study included a sample of N = 13 children with developmental disabilities. Data were collected using a questionnaire, anthropometric measurements (body height and body mass, BMI) and motor ability assessments (Eurofit test battery), and were processed using the statistical software IBM SPSS Statistics 20. Data processing and statistical analysis included descriptive and inferential statistical procedures. Frequencies and percentages were calculated as part of descriptive statistics. The research results are presented in tables and graphs. The obtained results indicate the presence of obesity among children with developmental disabilities. Out of 13 participants, 6 (46.2%) were overweight, while 2 (15.38%) were obese. It was also concluded that these children do not participate in sports activities for several reasons: severe intellectual disabilities, parents' lack of understanding of the child's need for sports, insufficient parental involvement, lack of time, as well as financial barriers, since many parents are unemployed. Based on the obtained results, it can be concluded that sport is an important component of the overall development of children with developmental disabilities, that it has a very positive impact on this population from multiple aspects, and that significantly more effort must be invested in adapting sports content to children with disabilities in order to increase their participation. Equally important, if not more so, is the need to educate parents and provide other forms of support to families of children with developmental disabilities.

Keywords: Sport, Growth and development, Children with developmental disabilities.

INTRODUCTION

Sport significantly contributes to the proper development of a child, and for every child, regardless of the difficulty of execution, an activity that suits their abilities is recommended. It is important to develop regularity in children and an understanding that performing physical activities contributes to their development. According to research results, in developed countries nearly 40% of children aged 5 to 8 are prone to various forms of cardiovascular diseases. The most effective means of preventing these diseases is regular physical exercise (Hraski, Živčić, Žuljević, 2002). These authors emphasize that each child experiences sport and competition differently, and in order to engage a child in sport, goals and challenges must be set appropriately. This means adapting activities to each child's abilities and interests. When goals are properly set, children experience success positively, which increases their motivation to continue participating in sports activities. Sports activities should also be properly presented to children because they have changed significantly over time. In the past, sports activities were often carried out in playgrounds or open spaces, whereas today parental concern for children's safety has led to reduced freedom of unorganized physical activity (Donlić, Marušić-Štimac, Smovjer-Ažić, 2005). According to Krželj (2009), these fears are often justified due to reduced safety in public spaces. However, organized participation in sports clubs has numerous positive effects, such as developing time management, organization, and respect for authority figures.

Encouraging children to be physically active is a primary responsibility of adults, as children are often unaware of the long-term consequences of a sedentary lifestyle (Krog, 2010). Parents, coaches, physical education teachers, and other influential individuals should continuously emphasize the health benefits of physical activity. Once this mindset is established, even minor achievements can generate pride and satisfaction, contributing to the development of self-confidence and self-worth. This demonstrates the influence of sport on children's mental processes. Prskalo, Babin, and Bilić-Prčić (2014) recommend at least one hour of daily physical activity for children without developmental difficulties, raising the question of appropriate activity levels for children with disabilities, who often engage in minimal daily movement. In a society that emphasizes achievement, such children are often perceived as incompetent, which negatively affects their self-esteem. Regardless of disability, a child's value must always be emphasized, and the influence of sport should primarily serve positive educational and developmental purposes. Sport contributes to reducing difficulties in various forms by offering measurable comparative advantages and facilitating positive developmental outcomes. Through sport, children learn about their role in society, encounter diversity, and develop empathy and acceptance of differences. Inclusion in sports from an early age promotes social understanding and emotional development. Blažević and Lukšić (2007) highlight that sports activities also contribute to educational values by developing cognitive abilities through learning rules and preparing children for more complex situations. Sports participation enhances organizational skills, socialization, self-confidence, and psychological well-being. Sport positively affects not only

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physical development but also psychological, emotional, moral, social, and cognitive growth. Anthropological characteristics represent organized systems of traits, abilities, and motor skills and their interrelations. These include morphological, cognitive, functional, and psychomotor dimensions (Mišigoj-Duraković, 2008; Bala, 2010). Motor abilities in children are complex and not fully differentiated, making their assessment more challenging compared to adults (Turek, 2006). Developmental disorders such as autism spectrum disorders, ADHD, and Down syndrome are characterized by specific cognitive, social, and behavioral challenges that require targeted educational and physical activity interventions. Research by Hayakawa and Kobayashi (2011) demonstrated improvements in muscle function and upright walking ability through targeted physical activities in children with disabilities. Other studies confirm that structured therapeutic and sports programs significantly contribute to physical, psychological, and social development (Morita & Nanakida, 2004; Pontifex, 2003; Kuzmanić, Paušić & Grčić, 2014). Monitoring nutritional status is crucial for assessing growth and development, with BMI being the most commonly used indicator (Šelović & Jureša, 2001; Mišigoj-Duraković *et al.*, 1999). Studies by Murphy and Carbone (2008) confirm that the benefits of physical activity are universal, including for children with developmental disabilities, as participation improves health, social inclusion, functional abilities, and overall quality of life. Scientifically grounded exercise programs, when accessible and adapted, significantly influence morphological, motor, functional, cognitive, and social development (Findak *et al.*, 2003).

MATERIALS AND METHODS

Participants

The sample consisted of a total of 13 children, who were students of the 2nd, 3rd, 5th, 7th, and 8th grades of a special school attending extended day care at the Center for Education, Upbringing, and Rehabilitation "Vladimir Nazor." The study was approved by the Teaching Council of the same institution. The participant population included five boys with autism and one student with Down syndrome, while the remaining seven participants (girls) had autism, motor impairments, and ADHD in combination with autism. In addition, 13 parents of children with disabilities participated in the study.

Research Design

Scaling was used as a method of data collection. A teacher attitude scale was applied to determine teachers' attitudes toward the current state of inclusion in physical and health education in primary education. The scale was constructed exclusively for the purposes of this study and consisted of 13 statements, within which teachers could express positive, neutral, or negative attitudes. In pedagogical research, instruments represent tools used to collect empirical and other documented data. In this study, the following instruments were used: a questionnaire, anthropometric measurements (body height and body mass; BMI), and assessment of motor abilities (Eurofit test battery). An anonymous questionnaire was used to examine parents' views on the physical activity of their children. The survey was conducted using specially designed questions that addressed the extent to which parents understand the importance of sport for their child (their opinion on how sport influences their child's development, which sports

activities motivate their child, whether they believe their child is overburdened with sports activities, whether they engage in sports activities together with their child, whether the child participates in any sport and, if not, why not, whether they believe obesity is a consequence of not engaging in sport, and what sport represents to them).

Statistical Analysis

All data collected in the study were processed using descriptive statistical procedures. Within descriptive statistics, frequencies and percentages were calculated. Data analysis was performed using the statistical software package SPSS for Windows, version 20.0.

RESULTS AND DISCUSSION

Interpretation of Results

Table 1. Categories according to BMI

BMI Categories - Crosstabulation		
Varijable	F	%
Underweight	2	15.38%
Normal weight	3	23.04%
Overweight	6	46.2%
Obesity	2	15.38%
Total	13	100%

Through anthropometric measurement of students and subsequent analysis of the results for determining nutritional status among students in grades II, III, V, VII, and VIII who attended extended school stay, we observed the following:

2 respondents (15.38%) belong to the category of undernourished children, i.e., children whose body mass index (BMI) is below 20;

3 respondents (23.04%) belong to the category of normally nourished children, i.e., their BMI ranges between 20 and 25; 6 respondents (46.2%) belong to the category of children with excessive body weight, i.e., whose BMI ranges between 25 and 30;

2 respondents (15.38%) belong to the category of obese children, i.e., their BMI is higher than 30.

Out of the total sample of respondents (N = 13), the largest number 6 students (46.2%) fall into the category of excessive body weight. Using a questionnaire, we examined and determined whether excessive body weight is one of the consequences of non-participation in sports activities. Based on the survey results presented in item 9, we identified additional factors influencing obesity besides lack of engagement in sports activities.

The most frequent negative responses were the following:

- I do not have time to devote myself to my child due to other obligations (46.2%);
- Some parents stated that sport is not important for their child (15.38%);
- A portion of surveyed parents reported that they are unable to provide adequate nutrition and that, due to a certain level of disability, their children are not able to be involved in sports activities (15.38%);

- A certain number of parents demonstrated pronounced awareness of the benefits of sports for the overall development of their children (23.04%).

The results mostly indicate that parents neglect the importance of sports and do not understand the significance of the sports component in their children’s development and in the improvement of both their physical and psychological health. Essentially, they fail to realize that through sports and proper nutrition, a balance can be achieved that helps reduce body weight in children with excessive body mass. By measuring the motor abilities of students with developmental difficulties and analyzing the obtained results among students in grades II, III, V, VII, and VIII, we observed the following: one student was able to perform the Flamingo balance test for a duration of 4 seconds; one student was able to perform the hand tapping test in 40 seconds; one student performed the standing long jump, achieving a distance of 120 cm. These tests were adapted to the students’ abilities; however, due to severe intellectual disabilities, the Eurofit test battery did not yield significant results. It is a discouraging fact that most children who were capable of performing these tests showed no interest or desire to do so. Each test was adapted to their abilities and level of difficulty. It should be emphasized that during the exercises, i.e., the flexed-arm hang test, the children did not maintain attention (children with autism), nor did they have sufficient arm strength. Due to certain motor impairments and excessive body weight, as well as a sedentary lifestyle, students were unable to perform the shuttle run test.

Out of a total of eight exercises (tests), only the child who participates in sports activities (with ADHD) was able to perform the Flamingo balance test for four seconds, while most children were unable to stand even for one second, indicating that balance loss may stem from the very difficulties these children have. The same student performed the hand tapping test, while the remaining children attempted the test slowly and imprecisely. Due to poor movement coordination, the other twelve children remained at unsuccessful attempts only. Because of reduced flexibility caused by a lack of physical activity and certain developmental difficulties, flexibility among the respondents was observed to be at a very low level. The sit-and-reach and sit-up tests were absolutely insurmountable obstacles for the respondents. Most children were unable to jump properly; however, the student who engages in swimming and regularly practices various sports recreationally with their parents performed a standing long jump of 120 cm, which is a very good result, regardless of the fact that the tests, including this one, were adapted for children with disabilities.

Age and physical strength were decisive factors in the handgrip strength test. Older students showed a competitive spirit and a desire to achieve the best results in this test. Unfortunately, despite their motivation, due to severe intellectual disabilities, they were unable to hold the dynamometer for the required duration (5 seconds), nor did they perform three attempts, which prevented us from obtaining valid results. Regarding the motor abilities of these children, this test revealed, among other things, that children with disabilities do not have strong or sustained handgrip strength, indicating difficulties primarily in gross motor skills. Based on all of the above, the student who engages in recreational sports demonstrated that sports activities yield results and positive progress in the overall development of a

child with disabilities. Another student, who also engages in recreational swimming, attempted to perform the tests but, due to inattention, impatience, and aggressive behavior, was unable to complete three repetitions of the tests, and thus no results could be obtained. The remaining students, who do not participate in any sports activities at all, as well as due to other factors (use of mobile phones, insufficient financial resources of parents, lack of time for parents to devote to their children, etc.), did not achieve any results on these tests. In order for a child to be able to perform any activity, a great deal of effort and dedication is required, both from parents and from other participants in the educational process. From the presented table, only one student was able to perform several tests, while the remaining eleven were unable to perform any test. It should be emphasized that all tests were adapted to the students; however, due to various difficulties listed in the table, they were unable to perform the specified tests.

Analysis of survey results

A total of 13 parents of children with disabilities participated in the study.

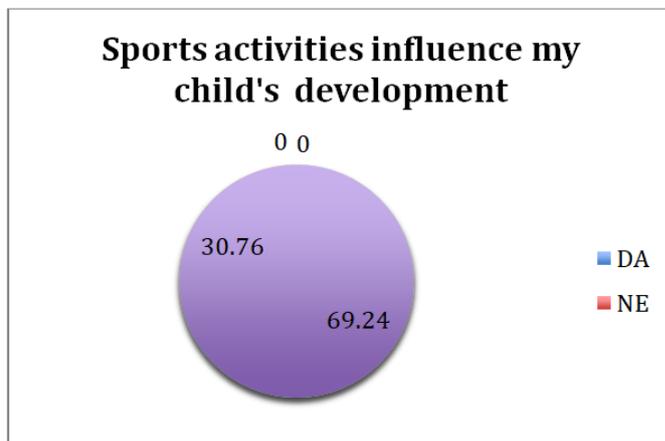


Figure 1. Distribution of responses to the statement: “Sports activities influence my child’s development”

By examining Figure 1, the first statement, which read: “Sports activities influence my child’s development,” out of a total of 13 respondents, 69.24% (9) confirmed that sports activities influence their child’s development. There were also negative responses, with 30.76% (4) stating that sports activities do not influence their child’s development. Based on the above, we can conclude that the majority of respondents, 9 (69.24%) parents, are aware of the fact that sports activities are an important component of the overall development of children with disabilities.

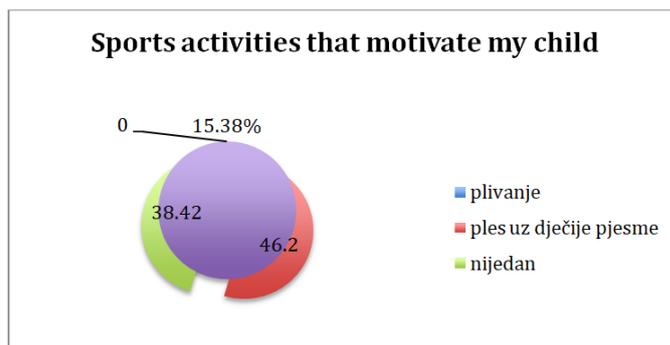


Figure 2. Distribution of responses to the statement: “Sports activities that motivate my child”

By examining Figure 2, we can see that out of a total of 13 respondents, 2 (15.38%) are motivated by swimming, 6 (46.20%) are motivated by children's dance songs, while 5 (38.42%) respondents have no motivation to engage in sports, as demotivation arises from the disability itself.

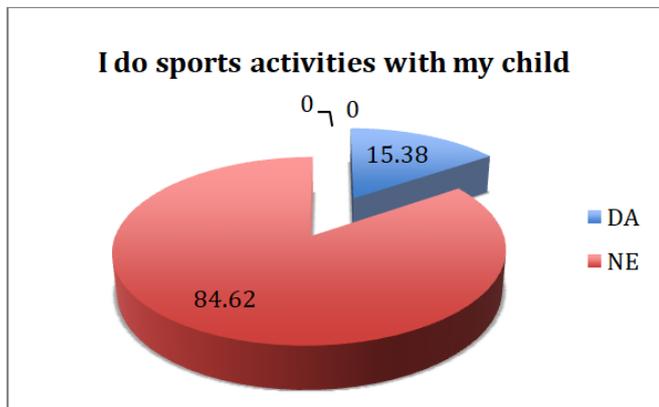


Figure 3. Distribution of responses to the statement: "I engage in sports activities with my child"

By examining Figure 3, the third statement, which read: "I engage in sports activities with my child," out of a total of 13 respondents, 2 (15.38%) stated that they often engage in sports activities with their child. In response to the follow-up question regarding which sports, they stated that in addition to swimming, they often play basketball and football with their children. Unfortunately, a large number of negative responses were recorded, as many as 11 (84.62%) respondents stated that they do not engage in any sports activities with their children. We conclude that children with disabilities are indeed not sufficiently involved in sports.

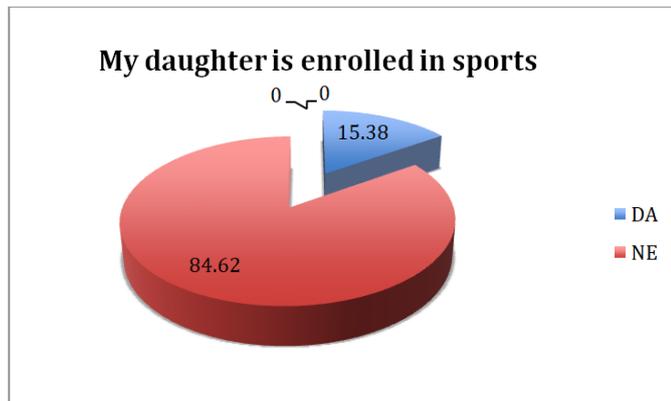


Figure 4. Distribution of responses to the statement: "My child is enrolled in a sport"

By examining Figure 4, the fourth statement, which read: "My child is enrolled in a sport," out of a total of 13 respondents, 2 (15.38%) are enrolled in swimming. Additionally, one respondent stated that their child's overall development had significantly improved. However, the number of respondents, 11 (84.62%), who reported that their children are not enrolled in any sport is concerning. When parents were asked about the reasons for not enrolling their children in sports, they listed the following: lack of time, high costs associated with sports, severe difficulties faced by their children, long distance, the hardship of life with a child with disabilities, and the lack of support from the state for both their children and themselves. Based on the above, we can conclude that it is alarming that

only 2 (15.38%) out of 13 children are enrolled in a sport, while 11 (84.62%) are not. Children with disabilities are insufficiently involved in sports activities.

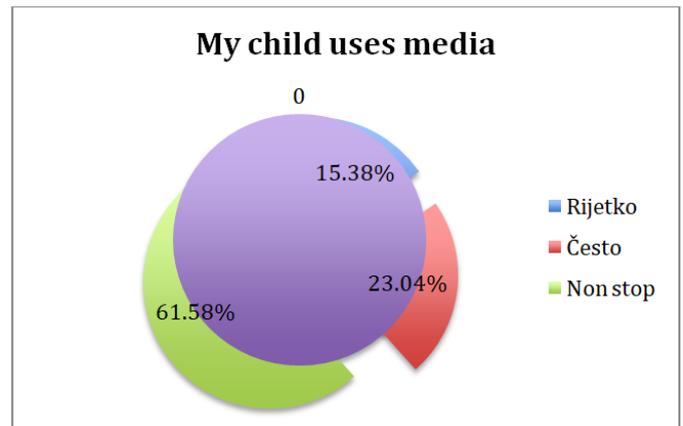


Figure 5. Distribution of responses to the statement: "My child uses media"

By examining Figure 5, the fifth statement, which read: "My child uses media," out of a total of 13 respondents, 2 (15.38%) rarely use media, 3 (23.04%) often use media, while as many as 8 (61.58%) constantly use media for entertainment purposes. We concluded that these respondents most often have a sedentary lifestyle, which is harmful to their health, growth, and development.

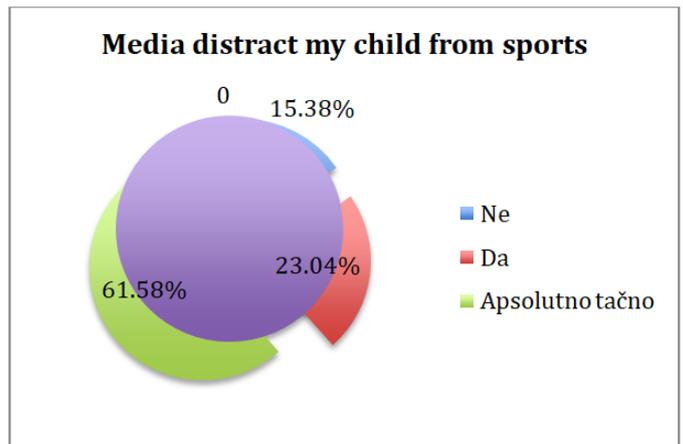


Figure 6. Distribution of responses to the statement: "Media distract my child from sports"

By examining Figure 6, the sixth statement, which read: "Media distract my child from sports," we concluded that out of a total of 13 respondents, only 2 (15.38%) who regularly engage in recreational swimming and other sports activities do not neglect sports due to media use; 3 (23.04%) have inadequate attention caused partly by their disability, while as many as 8 (61.58%) are constantly using media, mostly mobile phones. This suits parents, as it gives them time for themselves and other obligations, without investing effort into providing adequate attention to their child, who is constantly using media. This is a very alarming fact, leading us to conclude that results on motor tests are influenced by a sedentary lifestyle associated with media use, which, in addition to existing disabilities, further negatively affects the child's overall development. Based on the above, we conclude that media are a disruptive factor in performing sports activities.

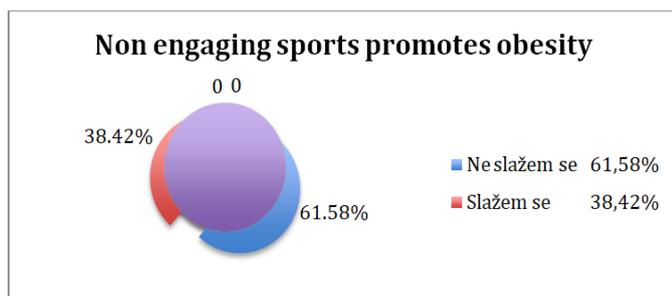


Figure 7. Distribution of responses to the statement: “Not engaging in sports encourages obesity”

By examining Figure 7, the statement “Not engaging in sports encourages obesity,” we concluded that out of a total of 13 respondents, 8 (61.58%) disagreed with this statement. They are absolutely unaware that sports are essential for their children, as their children do not engage in sports at all, which, in combination with other disabilities, has ultimately resulted in obesity. The remaining 5 (38.42%) respondents agreed with the statement, explaining that their children participate in various sports activities to which they are guided by their parents, who are aware of all the benefits of sports for their children. We conclude that a large number of respondents, 11 (84.6%), indicates that parents insufficiently enroll their children in sports.

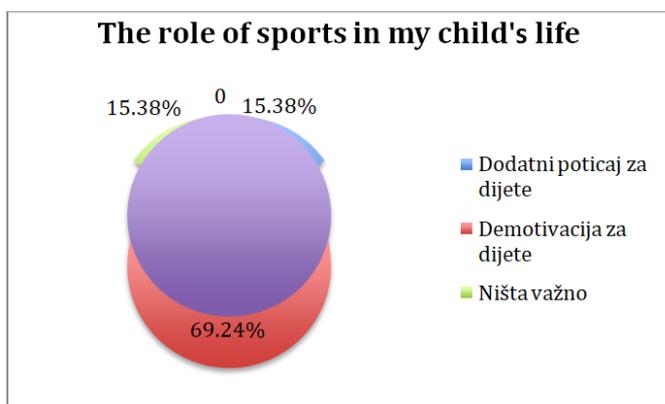


Figure 8. Distribution of responses to the statement: “The role of sport in my child’s life”

By examining Figure 8, the eighth statement, which read: “Sport for my child,” we conclude that a very small number of respondents, 2 (15.38%), are aware of the possibility of motivating their child through sports and improving their overall development. The same number of respondents, 2 (15.38%), believe that sport is of no importance for their child, citing factors previously mentioned in the survey, such as severe difficulties faced by their child, the difficult life of parents raising a child with disabilities, and the lack of support from the state. At the same time, 9 (69.24%) respondents stated that sport has a demotivating effect on their child, which is a consequence of a wide spectrum of psycho-physical difficulties, as the child is unable to perform most sports activities. It must be emphasized that children who do not engage in sports activities achieve below-average results in performing any task.

By examining Figure 9, the ninth statement, which read: “Sport is important for my child,” we conclude that 2 (15.38%) respondents are aware of the importance of sports for their child, while a large number of respondents, 8 (61.58%), are not

aware of the importance of sports activities for the overall development of their children, and 3 (23.04%) respondents are undecided, believing that sport may be important for their child. As a result, children have excessive body weight, and some are obese.

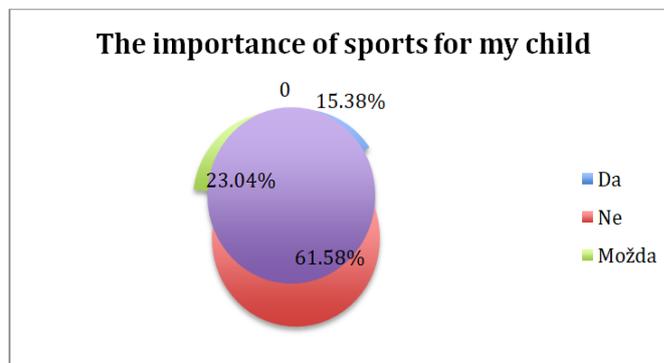


Figure 9. Distribution of responses to the statement: “Sport is important for my child”

Conclusion

Play and sport are an integral part of the lives of people of all ages. They represent a human good and a means of expressing creativity. Participation in sports greatly affects children’s health, as through sport they develop a competitive spirit, which is very important because it helps them, in a way, to develop a love for physical and sporting activities. Physical exercise enhances the development of children’s anthropological status. Through sport, energy expenditure increases and the risk of developing various diseases is reduced. In the era of globalization, children unfortunately spend increasing amounts of time using computers, watching television, and using mobile phones. Such a lifestyle does not provide sufficient stimulation for quality motor development, but instead leads to an increasing number of overweight children caused by a sedentary way of life, which contributes to the development of numerous diseases. Until recently, childhood represented the most physically active period of life. It is also very important to emphasize the fact that sport contributes to the formation of a stable personality with developed humane qualities and authentic human values. Education for love, life, and togetherness prevents egocentric withdrawal into oneself and represents a strong barrier to the spread of negative social phenomena. Due to the unquestionable value of sport, it should be accessible to everyone who chooses to engage in it, including children with developmental difficulties. According to the results of our research, we were able to confirm the above-mentioned facts regarding obesity, as out of 13 respondents, 6 (46.2%) were overweight, while 2 (15.38%) were obese. We also concluded that these were children who do not participate in sports activities for several reasons: severe intellectual disabilities, parents’ lack of understanding of the child’s need for sport, insufficient parental involvement, lack of time, as well as financial barriers, since many parents are unemployed. Bosnia and Herzegovina, as a state, must take care of this category of the population, as numerous neighboring countries and EU member states have already done. It is necessary to create a system that will enable children with developmental difficulties to use all available resources that promote their overall development, while providing their parents with every form of support.

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