
ANALIZA RAZLIKA INTENZITETA SILE STISKA ŠAKE I POVEZANOST SA SASTAVOM TIJELA KOD UČENIKA MLAĐEG ŠKOLSKOG UZRASTA NA PODRUČJU GRADA MOSTARA

Sažetak

Tjelesni i zdravstveni odgoj kao školski predmet od izuzetne je važnosti za školsku populaciju i nezaobilazan je dio integralnog sistema odgoja i obrazovanja. Tjelesna aktivnost kao osnova tjelesnog i zdravstvenog odgoja predstavlja jedan od temeljnih uslova za normalan rast i razvoj djece školske dobi. Tjelesni odgoj je usmjeren na tjelesnu aktivnost u širem smislu i sport u užem smislu. Učenici uče o različitim vrstama sportova, pravilnoj tehnici, važnosti tjelesne aktivnosti i kako razvijati tjelesnu izdržljivost, dinamogenu sposobnost očitavanja snage, fleksibilnost i koordinaciju. Tjelesni odgoj također promiče timski rad, fair play i osobnu disciplinu. Zdravstveni odgoj usmjerava učenike na usvajanje zdravih životnih navika. To uključuje edukaciju o prehrani, higijeni, prevenciji bolesti, mentalnom zdravlju i važnosti redovitih medicinskih pregleda.

Ova kombinacija nastave pomaže učenicima da usvoje zdrave životne navike i razviju tjelesne sposobnosti koje su važne za njihovo cjelokupno blagostanje i kvalitetu života.

Predmet ovoga istraživanja predstavlja intezitet sile stiska šake i sastav tijela učenika mlađeg školskog uzrasta.

Problem ovoga istraživanja predstavlja analiza inteziteta sile stiska šake i povezanost sa sastavom tijela učenika mlađeg školskog uzrasta.

Populacija iz koje je izabran uzorak za ovo istraživanje predstavlja 1441 učenika i učenica (746 M i 695 Ž) osnovnih škola Grada Mostara. Istraživanje koje je provedeno za potrebe ove disertacije izvršeno je u periodu januar – april 2020. godine i transverzalnog je karaktera. Ovo istraživanje je sprovedeno u osnovnim školama sa područja Mostara.

Cilj ovoga istraživanja je utvrditi razlike inteziteta sile stiska šake i povezanost sa sastavom tijela učenika mlađeg školskog uzrasta na nivou Grada Mostara.

Prva faza istraživanja se odnosila na pripremu testnih kartona, kao i pripremu mjernih instrumenata i saglasnost za istraživanje od resornog ministarstva, kao i izrada plana posjeta školama.

Druga faza istraživanja se odnosila na testiranje učenika i prikupljanje podataka u osnovnim školama.

Treća faza istraživanja se odnosila na unos i sortiranje dobijenih podataka, kao i na njihovu obradu.

Četvrta faza se odnosila na izradu doktorske disertacije i iznošenje određenih zaključaka.

Izbor varijabli izvršen je na osnovu dosadašnjih istraživanja problematike slične ovoj, a imajući u vidu značaj tih varijabli.

Intenzitet sile stiska šake je mjereno metodom izometrijske dinamometrije. Korišten je standardizovan test – Stisak šake (Dopsaj, Ivanović, Blagojević, Vučković, 2009; Dopsaj, Kljajić, Eminović, Koropanovski, Dimitrijević i Stojković, 2011; Ivanović, Koropanovski, Vučković, Janković, Miljuš, Marinković, Atanasov, Blagojević, Dopsaj, 2009). Varijable za procjenu inteziteta sile stiska šake koje su korištene u ovom istraživanju su mišićna sila stiska šake desne ruke (DDR) i mišićna sila stiska šake lijeve ruke (DDL). Za ovo testiranje koristit će se dinamometar CAMRY EH 101 , a rezultati će biti izraženi u kg.

Varijable za procjenu sastava tijela koje su korištene u ovom istraživanju su visina tijela (AVISTJ), težina tijela (AMASTJ), Queteletes index (QINDEX), procenat masti u tijelu (FATT%), težina masti u tijelu (FATkg), težina tijela bez masnog tkiva (FFMkg), mišićna masa (MMkg) u kilogramima, količina vode u organizmu (TBWkg) u kilogramima, količina vode u organizmu (TBW%) u procentima i Body mass index (BMI). Za ovo istraživanje koristit će se TBF-300A Total Body Composition Analyzer.

Jedan od problema istraživanja je bio da se utvrde razlike inteziteta sile stiska šake kod istraživanog uzorka. Na osnovu rezultata centralnih i disperzionih parametara istraživanih varijabli možemo zaključiti da sve varijable imaju normalnu distribuciju sa određenim razlikama u izduženosti i spljoštenosti krive normalne raspodjele rezultata. Analizirajući vrijednosti osnovnih i centralnih disperzionih parametara obje grupe svih uzrasta može se zaključiti heterogenost rezultata kod varijabli koje mjere potkožno masno tkivo i količinu vode u organizmu.. Analizirajući osnovne i centralne disperzione parameter dinamometrije šake i lijeve i desne ruke, a s obzirom na uzrast i spol, možemo utvrditi progresiju rasta inteziteta sile stiska šake po uzrastu. Između VII i VIII razreda evidentna je veća heterogenost s obzirom na spol, gdje se javlja veći prirast inteziteta sile stiska šake kod dječaka u odnosu na djevojčice i taj trend se nastavlja do IX razreda. I kod lijeve i desne šake prisutan je identičan slučaj. U nastavku analize osnovnih i centralnih disperzionih parametara obje grupe svih uzrasta, možemo zaključiti da djevojčice dominiraju u varijabli količina masnog tkiva u procentima (FATT%) i težini masnog tkiva (FMAS), osim u uzrastu I i II

razreda, gdje je ta količina i težina identična . Kod obje varijable, značajno je utvrditi da se ta količina i masa približava s obzirom na spol u period između VI i VII razreda.

Ključne riječi: *Intenzitet sile stiska šake, sastav tijela, mlađi školski uzrast*

ANALYSIS OF DIFFERENCES IN THE INTENSITY OF HAND GRIP STRENGTH AND THE RELATIONSHIP WITH BODY COMPOSITION AMONG YOUNG SCHOOL-AGE STUDENTS IN THE CITY OF MOSTAR

Abstract

Physical and health education as a school subject is extremely important for the school population and is an indispensable part of the integral system of upbringing and education. Physical activity as the basis of physical and health education represents one of the fundamental conditions for normal growth and development of school-age children. Physical education is focused on physical activity and sports. Students learn about different types of sports, proper technique, the importance of physical activity and how to develop physical endurance, strength, flexibility and coordination. Physical education also promotes teamwork, fair play and personal discipline. Health education directs students to adopt healthy lifestyle habits. This includes education on nutrition, hygiene, disease prevention, mental health and the importance of regular medical check-ups.

This combination of instruction helps students develop healthy lifestyle habits and physical abilities that are important to their overall well-being and quality of life.

The subject of this research is the intensity of the hand grip force and body composition of students of younger school age.

The problem of this research is the analysis of the intensity of the hand grip force and its connection with the body composition of students of younger school age.

The population from which the sample was chosen for this research represents 1,441 male and female students (746 male and 695 female) of elementary schools in the City of Mostar. The research that was carried out for the purposes of this dissertation was carried out in the period January - April 2020 and is transversal in nature. This research was conducted in primary schools in the area of Mostar.

The aim of this research is to determine the differences in the intensity of the hand grip force and the relationship with the body composition of students of younger school age at the level of the City of Mostar.

The first phase of the research was related to the preparation of test cards, as well as the preparation of measuring instruments and consent for the research from the relevant ministry, as well as the development of a school visit plan.

The second phase of the research was related to student testing and data collection in primary schools.

The third phase of the research was related to the entry and sorting of the obtained data, as well as their processing.

The fourth phase was related to the preparation of the doctoral dissertation and the presentation of certain conclusions.

The choice of variables was made on the basis of previous research on issues similar to this one, bearing in mind the importance of those variables.

The intensity of the hand grip force was measured using the method of isometric dynamometry. A standardized test was used - Handshake (Dopsaj, Ivanović, Blagojević and Vučković, 2009; Dopsaj, Kljajić, Eminović, Koropanovski, Dimitrijević and Stojković, 2011; Ivanović, Koropanovski, Vučković, Janković, Miljuš, Marinković, Atanasov, Blagojević and Dopsaj, 2009). The variables for evaluating the intensity of the hand grip force used in this research are the muscle force of the right hand hand grip (DDR) and the muscle force of the left hand hand grip (DDL). The CAMRY EH 101 dynamometer will be used for this test, and the results will be expressed in kg.

The variables for assessing body composition that were used in this research are body height (AVISTJ), body weight (AMASTJ), Quetelet's index (QINDEX), body fat percentage (FATT%), body fat weight (FATkg), body weight without fat tissue (FFMkg), muscle mass (MMkg) in kilograms, amount of water in the body (TBWkg) in kilograms, amount of water in the body (TBW%) in percentages and Body mass index (BMI). The TBF-300A Total Body Composition Analyzer will be used for this research.

One of the problems of the research was to determine the differences in the intensity of the hand grip force in the studied sample. Based on the results of the central and dispersion parameters of the researched variables, we can conclude that all variables have a normal distribution with certain differences in the elongation and flattening of the normal distribution curve of the results. Analyzing the values of the basic and central dispersion parameters of both groups of all ages, it is possible to conclude the heterogeneity of the results in the variables that measure subcutaneous fat tissue and the amount of water in the body. , we can determine the progression of the intensity of the hand grip force by age. Between grades VII and VIII, greater heterogeneity is evident with respect to gender, where there is a greater increase in the intensity of hand grip strength in boys compared to girls, and this trend continues until grade IX. An identical case is present in both the left and right hands. In the

continuation of the analysis of the basic and central dispersion parameters of both groups of all ages, we can conclude that girls dominate in the variables of the amount of fat tissue in percentage (FATT%) and the weight of fat tissue (FMAS), except in the age of class I and II, where this amount and the weight is identical. With both variables, it is significant to determine that this quantity and mass approaches with respect to gender in the period between the VI and VII grades.

Key words: Intensity of hand grip force, body composition, younger school age.