

## PHYSICAL ACTIVITY AS A CHANCE FOR ROMA CHILDREN LIVING IN UNFAVORABLE CONDITIONS

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**Abstract:** Until now no larger child sample of exclusively Roma ethnicity has been investigated concerning their basic somatic and motor performance attributes. The aim of the present comparison of Roma and non-Roma prepubertal and pubertal boys was to analyse if there were differences in some anthropometric measures and running performance to see if Roma children fall behind their non-Roma peers in growth and development, and if so, to what extent. Kinanthropometric data collection was carried out in 184 volunteer Roma boys aged 6.51 and 14.50 years. For a control group, exactly the same number of non-Roma subjects was selected randomly from each age group of the same region - Kanjiza and Novi Knezevac.

**Keywords:** BMI, running, endurance.

### INTRODUCTION

Roma children, members of the poorest national minorities, are the children who need special social care. According to the data presented in the analysis of the primary education system in Serbia "... Roma population has a low percentage of enrollment in school, low level of attendance, low grade finish, high repetition rates and a high drop out of school rate. The largest number of children who start elementary education leave the school before finishing the fourth grade (Unicef, 2001). Teachers working with Roma children do not know enough about the problems and culture of the Roma population because they do not get any knowledge in this field during their education and professional development. Within their schools, they are

## FIZIČKA AKTIVNOST KAO ŠANS ZA ROMSKU DECU U NEPOVOLJNIM ŽIVOTNIM USLOVIMA

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**Apstrakt:** Veoma su retka i danas istraživanja koja prikazuju morfološke i motoričke pokazatelje romske dece i koja se problematikom bave u odgovarajućem obimu što se tiče humane biologije, ali i statističkih zakonitosti. Cilj našeg istraživanja je bio da se uporede razvojni pokazatelji romske i neromske dece razne uzrasne dobi i da se izvrši analiza između pokazatelja telesnog razvoja kao i rezultata u motoričkim postignućima. Naravno ukoliko se utvrdi da su razlike signifikantne da se utvrdi u kojoj meri romska deca zaostaju u razvoju. U istraživanje smo uključili 184 učenika koji su se deklarirali da pripadaju romskoj populaciji na teritoriji opština Kanjiža i Novi Knezevac, a u uzorak smo uzeli i dečake neromske populacije u istom broju. Starosna dob dečaka iz obe skupine (romske i neromske dece) nalazio se rasponu između 6,51 i 14,50 godina u periodu istraživanja.

**Cljučne reči:** BMI, brzina, izdržljivost.

### Uvod

Romska deca, pripadnici naše najsiromašnije nacionalne manjine, jesu deca kojoj je potrebna posebna društvena briga. Prema podacima prikazanim u analizi sistema osnovnog obrazovanja u Srbiji "...romska populacija ima nizak procenat upisa u školu, nizak nivo pohađanja nastave, nizak nivo završavanja razreda, visok procenat ponavljanja i visok nivo odustajanja od škole. Najveći broj dece koja su započela osnovno školovanje školu napušta pre nego što završi četvrti razred" (Unicef, 2001). Učitelji koji rade s romskom decom ne znaju dovoljno o problemima i kulturi Roma jer tokom školovanja i profesionalnog razvoja ne dobijaju obuku iz ove oblasti. Unutar svojih škola, oni su najčešće percipirani kao prosvetni

often perceived as teachers who do not achieve success. Failure of the class is mostly attributed to the (non)capability of Roma children, the environment in which they grow up and the characteristics of Roma families, so the teachers themselves often feel helpless and unmotivated. Inclusion of Roma children in education, as well as their survival in the education system, means sensitizing the school environment towards interculturality and recognizing the specificity of the educational needs of Roma children. For a better experience of their own efficiency and a more successful step towards the inclusion of Roma children, it is important to strengthen the professional roles of teachers as partners in pedagogical communication, affective interaction, regulation of social relations in the department (Ivić et al., 2001), as well as the competence for the development of tolerance and respect for diversity (Proposed strategies for improving the education of Roma in the FRY, 2003). The purpose of this research is to point out the possibility of encouraging professional competencies of teachers in working with Roma children in the field of systematic development of motor capabilities and monitoring the anthropological indicators. Living in Central Europe, the Roma people have built their specific life habits that are territorially distinct, but have globally led to more or less expressed isolation. Two important and socially complex factors are emphasized in the mentioned relations. The first factor relates to the low level of education in the Roma population, which leads to a lower standard of living that is lagging behind the living standards in Serbia, Vojvodina. In this context, we need to look at the second set of factors which is reflected in the low level of education, in a critical socio-economic status (due to direct and indirect mechanisms), in a noticeably shorter lifespan in both sexes of the Roma population compared to the non-Roma population. It is indisputable to mention the genetic, cultural and environmental factors which, although with different relative weight, can still influence the growth and development of children as well as their motor capabilities. By comparing the anthropological and motor indicators between Roma and non-Roma children, we wanted to get answers to the following questions: Are there humanobiological differences between our respondents in the anthropological characteristics and in motor performance? The next objective was to determine the extent of the differentiation when revealing significant differences.

#### ***Indicators of School Success among Roma Students***

The specificity of acquiring education of Roma children in different European countries refers to their, as a rule, much lower educational achievements than the achievements

radnici čija odeljenja ne postižu uspeh. Neuspeh odeljenja u najvećoj meri se pripisuje (ne)spособnostima romske dece, sredini u kojoj ona odrastaju i karakteristikama romskih porodica, pa se i sami učitelji najčešće osećaju bespomoćno i nemotivisano. Uključivanje romske dece u obrazovanje, kao i njihov opstanak u obrazovnom sistemu, podrazumeva senzitivizaciju školske sredine u pravcu interkulturalnosti i prepoznavanja specifičnosti obrazovnih potreba romske dece. Za bolji doživljaj sopstvene efikasnosti i uspešniji korak ka inkluziji romske dece, značajno je jačanje profesionalnih uloga nastavnika kao partnera u pedagoškoj komunikaciji, afektivnoj interakciji, regulisanju socijalnih odnosa u odeljenju (Ivić i saradnici, 2001), kao i kompetencija za razvoj tolerancije i uvažavanje različitosti (Predlog strategije unapređenja obrazovanja Roma u SRJ, 2003). Smisao ovog rada je da ukaže na mogućnosti podsticanja profesionalnih kompetencija učitelja u radu s romskom decom na planu sistematskog razvoja motoričkih sposobnosti i praćenja antropoloških pokazatelja. Živeći na prostorima Srednje Evrope Romi su izgradili svoje specifične životne navike koji se teritorijalno razlikuju ali su globalno doveli do manje ili više izražene izolacije. Dva važna i društveno kompleksna faktora se ističu u spomenutim odnosima. Prvi faktor se odnosi na nizak nivo školske sprema kod romske populacije što dovodi do izraženo nižeg životnog standarda koji zaostaje iza standarda življenja u Srbiji, Vojvodini. U ovom kontekstu moramo da se osvrnemo na drugi sklop faktora koji se ogleda u niskom stepenu školovanja, u kritičnom socio ekonomskom statusu (zbog direktnih i indirektnih mehanizama), u uočljivo kraćem životnom veku kod oba pola pripadnika romske populacije u odnosu na neromsku populaciju. Neosporno je da spomenuti genetski, kulturni i činioci životne sredine iako sa različitom relativnom težinom ipak mogu uticati na rast i razvoj dece kao i na njihove motoričke pokazatelje. I pored već postojećih i sve izraženijih razlika u uzorku romske dece u odnosu na neromsku decu u Srbiji, Vojvodini veoma mali broj istraživanja se bavi ovom problematikom. Upoređivanjem antropoloških i motoričkih pokazatelja između romske i neromske dece hteli smo dobiti odgovore na pitanja: postoje li humanobiološke razlike između naših ispitanika u antropološkim karakteristikama i u motoričkim postignućima. Sledeći cilj je bio da se prilikom otkrivanja značajnih razlika odredi i mera diferencijacije.

#### ***Analiza školskog uspeha romskih učenika***

Izrazita specifičnost sticanja obrazovanja romske dece u različitim evropskim državama, odnosi se na nji-

of non-Roma children, regardless of age and gender. The results presented in the comparative study of Roma children in Europe show that in France 95% of the interviewed teachers consider that their Roma students have insufficient achievements. In Spain, teachers assess the academic achievements of their Roma students with an average grade of 4.3 (on a scale of 10), as opposed to an average grade for non-Roma students which is 6.9. The relationship between school success and students age is inversely proportional: the older the student is, the worse success he or she has (OPRE ROMA, 2002 p. 73)<sup>1</sup>. Available data on educational achievements of Roma students in Serbia, presented in the Monitoring Report *The equal availability of high quality education for Roma*<sup>2</sup>, also points to their significantly lower school performance compared to the majority (Baucal, 2005, according to *Equal accessibility...*, 2007). In the National Testing of third-year school students (hereinafter: National Testing), one-time testing on a representative sample of schools (5000 students in 113 schools) data on school grades of Roma and non-Roma students in mathematics and Serbian language were collected. There is a significant difference in the achievements of Roma and non-Roma students in these two subjects. At the end of the school year, most Roma students had the lowest passing grade (2), and only 5-10% of Roma students had an excellent grade (5), as opposed to over 40% of non-Roma students who achieved this grade in the first three grades in both of these subjects. In addition, 7-11% of Roma students 'achieved' an insufficient grade (1) in the Serbian language subject, at the end of the year, 10-14% of Roma students had an insufficient grade (1) in mathematics, while among non-Roma students there were less than 1% of those who had an insufficient grade at the end of the school year. Overall, the results of Roma students on standardized national testing tests showed that after three years of education, 50% of them did not master the basic knowledge and basic concepts in mathematics and were not able to apply mathematical knowledge in simple situations (at national level, this occurs in 11% of cases); and 56% did not acquire basic knowledge and skills in the Serbian language (at national level this occurs in 14% of cases). According to some interpretations, this

<sup>1</sup> *The Education of Gypsy Chidliness in Europe* project (OPRE ROMA) is a sociological and ethnographic study of the education of Roma children in Italy, France and Spain. Under the term "education", the authors of the study include the process of teaching / teaching Roma children in school, as well as their upbringing and the process of socialization in the family.

<sup>2</sup> *The equal availability of quality education for Roma* is an EUMAP report (the European Union Open Society Institute Monitoring and Advocacy Program) which, among other things, contains data on key educational indicators of the Roma population. The report aims to support the goals of the "Roma Inclusion Decade 2005-2015" in the field of education and to establish a framework for regular monitoring in all areas of the Decade.

hova po pravilu, mnogo niža obrazovna postignuća od postignuća neromske dece, bez obzira na uzrast i pol. Rezultati prikazani u komparativnoj studiji *Obrazovanje romske dece u Evropi* govore da u Francuskoj 95% intervjuisanih učitelja smatra da njihovi romski učenici imaju nedovoljna postignuća. U Španiji, učitelji akademska postignuća svojih romskih učenika ocenjuju prosečnom ocenom 4,3 (na skali do 10), za razliku od prosečne ocene za neromske učenike od 6,9. Odnos između školskog uspeha i uzrasta učenika je obrnuto proporcionalan: što stariji učenik, to gori uspeh (OPRE ROMA, 2002 str. 73)<sup>1</sup>. Dostupni podaci o obrazovnim postignućima romskih učenika u Srbiji, predstavljeni u Izveštaju o monitoringu *Jednaka dostupnost kvalitetnog obrazovanja za Rome*<sup>2</sup>, takođe ukazuju na njihov znatno lošiji školski uspeh u odnosu na većinu (Baucal, 2005, prema *Jednaka dostupnost...*, 2007). Na *Nacionalnom testiranju učenika trećeg razreda osnovne škole* (u daljem tekstu Nacionalno testiranje), jednokratnom testiranju na reprezentativnom uzorku škola (5000 učenika u 113 škola), prikupljeni su podaci o školskim ocenama romskih i neromskih učenika iz matematike i srpskog jezika. U školskim postignućima romskih i neromskih učenika iz ova dva predmeta postoji značajna razlika. Na kraju školske godine, većina romskih učenika ima najnižu prolaznu ocenu (2), a samo 5-10 % romskih učenika ima odličnu ocenu (5), za razliku od preko 40 % neromskih učenika koji dobijaju ovu ocenu u prva tri razreda iz oba predmeta. Pored toga, od 7-11 % romskih učenika dobija nedovoljnu ocenu (1) iz srpskog jezika na kraju godine, odnosno 10-14 % romskih učenika dobija nedovoljnu ocenu iz matematike, dok među neromskim učenicima ima manje od 1% onih koji dobijaju jedinicu na kraju školske godine. Pored toga, rezultati romskih učenika na standardizovanim testovima Nacionalnog testiranja pokazuju da posle tri godine školovanja, 50 % njih nije savladalo ni najosnovnija znanja i elementarne pojmove iz matematike i nije sposobno da primeni matematičko znanje u jednostavnim situacijama (na nacionalnom nivou to se dešava u 11 % slučajeva); i 56 % njih nije

<sup>1</sup> Projekat *The Education of Gypsy chidhood in Europe* (OPRE ROMA) predstavlja sociološku i etnografsku studiju obrazovanja romske dece u Italiji, Francuskoj i Španiji. Pod pojmom „education“ autori studije podrazumevaju proces učenja/podučavanja romske dece u školi, kao i njihovo vaspitavanje i proces socijalizacije u porodici.

<sup>2</sup> *Jednaka dostupnost kvalitetnog obrazovanja za Rome* je izveštaj EUMAP-a (Program monitoringa i zastupanja Evropske unije Instituta za otvoreno društvo) koji između ostalog, sadrži podatke o ključnim obrazovnim indikatorima romske populacije. Izveštaj ima za cilj da podrži ciljeve „Dekade inkluzije Roma 2005-2015“ u oblasti obrazovanja i da ustanovi okvir za redovno praćenje u svim oblastima Dekade.

means that Roma students were lagging behind other students 2.2 school years in mathematics and 2.6 school years in Serbian language, while they spent an average of three years at school. In the same report, an analysis of possible causes of poorer performance of Roma students was provided - one possible explanation is in their social origin: they are from poor families and their parents have a low level of education. If the lower social and educational status of student's family is the only cause of school failure, then non-Roma students of similar background should have a lower success. In that case, this would mean that schools provide the same level of education quality to all students, and do not contribute to the existing gap between Roma and non-Roma students in school achievement. However, an analysis of the achievements of Roma and non-Roma students with similar socio-economic backgrounds shows that the difference in achievements does exist - Roma students have poorer performance on standardized tests than non-Roma students of similar socio-economic background. In other words, differences in achievements can not be explained only by socio-economic factors but one part of the explanation of why Roma children achieve lower results can also lie in the lower quality of education for Roma children in elementary schools. The lower quality of education here means the different attitudes of teachers towards Roma in relation to non-Roma students, for example by lowering expectations for Roma students. Consequently, they receive less support and incentives from their teachers, and logically, the students produce lower achievements. The illustration and argumentation of this viewpoint is found in the results of Roma and non-Roma students in tasks within the National Testing, compared to their school grades. If teachers had the same expectations for Roma and non-Roma students, and evaluated them on the basis of the same criteria, Roma and non-Roma students with the same grade should have the same average results on a standardized test. But Roma students have shown a weaker performance in tests than non-Roma students with the same grade, which means that Roma students are expected to show less knowledge to get the same grade. Data on the number of those who repeat the class also speak about the poor school performance of Roma students. At the national level, the rate of repetition in the first three grades of primary school is one percent, and for Roma students this rate is 11% p. (equal accessibility..., 2007). Frequent repetition of classes and extremely poor achievements are used as "pedagogical" arguments for the segregation of Roma children in another type of school. Poor grades are used as justifications of school authorities for moving children to special schools and adult education schools, which indicates that Roma students can not follow the curriculum of regular schools. On the other hand, rep-

steklo osnovna znanja i veštine iz srpskog jezika (na nacionalnom nivou to se dešava u 14 % slučajeva). Prema nekim tumačenjima, to znači da romski učenici zaostaju za drugim učenicima 2,2 školske godine u matematici, i 2,6 školske godine iz srpskog jezika, pri čemu su u školi prosečno proveli tri godine. U istom Izveštaju, data je analiza mogućih uzroka slabijeg uspeha romskih učenika – jedno moguće objašnjenje je u njihovom socijalnom poreklu: oni su iz siromašnijih porodica i imaju roditelje sa niskim nivoom obrazovanja. Ukoliko je niži socijalni i obrazovni status porodice učenika jedini uzrok školskog neuspeha, onda bi trebalo da i neromski učenici sličnog porekla imaju slabiji uspeh. U tom slučaju, to bi značilo da škole pružaju isti nivo kvaliteta obrazovanja svim učenicima, i da ne doprinose postojećem jazu između romskih i neromskih učenika u školskom postignuću. Međutim, analiza postignuća romskih i neromskih učenika sa sličnim socio-ekonomskim poreklom, pokazuje da razlika u postignućima ipak postoji – romski učenici imaju slabije rezultate na standardizovanim testovima od neromskih sličnog porekla. Drugim rečima, razlike u postignućima se ne mogu objasniti samo socio-ekonomskim faktorima, već jedan deo objašnjenja zašto romska deca postižu slabije rezultate moguće leži i u nižem kvalitetu obrazovanja za romsku decu u osnovnim školama. Niži kvalitet obrazovanja ovde znači drugačije stavove nastavnika prema romskim u odnosu na neromske učenike, na primer tako što se snižavaju očekivanja za romske učenike. Samim tim oni dobijaju manje podrške i podsticaja od svojih nastavnika, pa i niža postignuća. Ilustracija i argumentacija navedenog stanovišta nalazi se u rezultatima romskih i neromskih učenika na zadacima u okviru Nacionalnog testiranja, a u poređenju sa njihovim školskim ocenama. Ako su nastavnici imali ista očekivanja za romske i neromske učenike, i ocenjihvali ih na osnovu istih kriterijuma, romski i neromski učenici sa istom ocenom bi trebalo da imaju iste prosečne rezultate na standardizovanom testu. Ali romski učenici prolaze slabije na testovima nego neromski učenici sa istom ocenom, što znači da se od romskih učenika očekuje da pokažu manje znanja da bi dobili istu ocenu. O slabom školskom uspehu romskih učenika govore i podaci o broju onih koji ponavljaju razred. Na nacionalnom nivou, stopa ponavljanja u prva tri razreda osnovne škole je jedan posto, a kod romskih učenika ova stopa iznosi 11 % str. (*Jednaka dostupnost...*, 2007). Često ponavljanje razreda i izrazito loša postignuća koriste se kao „pedagoški” argumenti za segregaciju romske dece u drugi tip škola. Školskim vlastima kao opravdanje za premeštanje dece u specijalne i škole za obrazovanje odraslih služe

etition of classes and inadequate success are also one of the reasons why Roma children leave the school completely.

### ***Physical Exercise as a Chance for Development and Various Interpretations of Physical Activity in Literature***

Physical activity is a widely used term, in scientific circles, in media and in ordinary speech too. In a similar or identical sense, other terms are used, such as recreational activity, recreation, physical exercise (exercise), fitness, wellness, training...

Corbin, Pangrazi and Franks (2000) group the definitions into two big categories: definitions related to products and definitions that characterize the processes. The first group includes state definitions, such as physical fitness, health and wellness. These are outcomes, often used in research as dependent variables. The definitions of a process concerns behavior or lifestyles and include physical activity, exercise, sports, dancing, etc. Processes often represent independent variables in research.

Physical activity represents the top, multidimensional term. Forms of physical activity such as work activity, exercise, sport, dance etc. are considered sub-categories of physical activity.

An universally accepted scientific definition of physical activity, determines physical activity as "every physical movement produced by skeletal muscles that results in calorie consumption" (Caspersen et al, 1985). Therefore, physical activity includes all kinds of active games, sports, dancing, exercise, active transport (walking, cycling), normal work and life activities (climbing upstairs, home jobs, carrying groceries, etc...). For example, brisk walking, lightweight exercises, table tennis, playing in the playground, sweeping leaves, belong to the physical activity of approximately the same energy price (3.5-7 kcal/min).

Physical exercise is a narrow term which represents a specific form of physical activity "which is planned, structured, repetitive and results in improvement or preservation of one or more aspects of physical fitness" (Welk, 2002). Harris (2002) gives a broader definition, according to which "Exercise is a planned, structured physical activity that fosters all aspects of physical, mental and social health and fitness, and well-being".

Fitness, according to Harris (2002), "is the ability or set of characteristics an individual possesses or achieves, which allows him to engage in physical activity and gain the benefits of doing it".

Physical activity, regardless of age, is treated as a health-related behavior that can have a beneficial effect on all aspects of health and the overall development of children.

slabe ocene, koje pokazuju da romski učenici ne mogu da prate program redovnih škola. S druge strane, ponavljanje razreda i nedovoljan uspeh predstavljaju i jedan od uzroka što romska deca potpuno napuštaju školu.

### ***Fizičko vežbanje kao šansa za razvoj i razna tumačenja fizičke aktivnosti u literaturi***

Fizička aktivnost je, naime, termin koji se široko upotrebljava, kako u naučnim krugovima, tako i u medijima i običnom govoru. U sličnom ili identičnom značenju, koriste se i drugi termini, poput: rekreativna aktivnost, rekreacija, fizička vežba (vežbanje), fitnes, velnes, kondicija, trening ...

Corbin, Pangrazi i Franks (2000) grupišu definicije u dve velike kategorije: definicije koje se odnose na produkte i definicije koje označavaju procese. U prvu grupu spadaju definicije stanja, poput fizičke kondicije (physical fitness), zdravlja i velnesa (wellness). Radi se o ishodima, koji se često u istraživanjima koriste kao zavisne varijable. Definicije procesa tiču se ponašanja ili životnih stilova, i tu spadaju fizička aktivnost, vežbanje, sportovi, ples itd. Procesi često u istraživanjima predstavljaju nezavisne varijable.

Fizička aktivnost predstavlja krovni, multidimenzionalni termin. Forme fizičke aktivnosti kao radna aktivnost, vežba, sport, ples i dr. smatraju se sub-kategorijama fizičke aktivnosti.

Opšteprihvaćena naučna definicija fizičke aktivnosti određuje fizičku aktivnost kao «svako telesno kretanje proizvedeno skeletnim mišićima koje rezultira kalorijskom potrošnjom» (Caspersen i sar, 1985). Dakle fizička aktivnost uključuje sve vrste aktivne igre, sporta, plesa, vežbanja, aktivni transport (hodanje, vožnja bicikla), uobičajene radne i životne aktivnosti (penjanje uz stepenice, kućni poslovi, nošenje namirnica itd). Primera radi, žustro hodanje, lagane vežbe oblikovanja, stoni tenis, igra na dečjem igralištu, sakupljanje lišća, spadaju u fizičku aktivnost približno iste energetske cene (3.5-7 kkal/min).

Fizička vežba je uži termin, označava specifičnu formu fizičke aktivnosti «koja je planirana, strukturirana, ponavljajuća i rezultira poboljšanjem ili očuvanjem jednog ili više aspekata fizičkog fitnesa» (Welk, 2002). Harris (2002) daje širu definiciju, po kojoj je «Vežba planirana, strukturirana fizička aktivnost koja podstiče sve aspekte fizičkog, mentalnog i socijalnog zdravlja i kondicije, te blagostanje».

Fitnes (kondicija) je, prema Harris (2002) «sposobnost ili set karakteristika koje pojedinac poseduje ili dostiže, a koje mu omogućavaju da se bavi fizičkom aktivnošću i stiče koristi od toga bavljenja».

### ***The importance of physical activity for the development of children***

The significance of physical activity for the health and development of children, and especially its impact on health in adulthood, is not easy or easy to examine. Bar-Or (1995), Fulton et al. (2001), Sirard et al. (2005). There are not enough longitudinal investigations of the intervention type, because they are expensive and technically most complex.

However, based on the existing empirical and theoretical structure related to the physical activity of children and the abundance of epidemiological findings on the adult population, it is possible to identify the potential benefits of physical activity:

- physical activity in the function of integral development of children,
- physical activity in the function of children's health,
- physical activity in the function of health in adulthood.

Ismail (1984) emphasizes that different types of development - physically, intellectually, emotionally and socially - are not simply a 'set of' independent parts, but among them there is 'organic unity'. In other words, action on a certain aspect of development necessarily reflects on other developmental aspects, so there can be no and there can be no isolated effects. The movement, in particular, strongly stimulates the central nervous system, activates the large zones of the bark and thus helps establish new neural connections and better utilization of brain capacities. Movement plays a key role in brain programming, both before and after birth (Cheatum and Hammond, 2000).

The importance of physical activity is reflected in the fact that children with behavioral and learning problems have similar difficulties in motor development (Cheatum and Hammond, 2000). Learning problems often arise from problems of motor development that are not timely recognized.

Gardner's multi-intelligence theory also recognizes the importance of motion, because kinesthetic intelligence is one of the eight types of intelligence (Detterman, 2005). Namely, American psychologist Gardner proposed in 1983 the theory of intelligence with the intention of expanding the traditional definition of intelligence. Instead of the existence of a single general intelligence, Gardner considers that there are several types of intelligences, each of which is an independent system in the brain. In addition to linguistic, logical, mathematical, spatial, music, interpersonal, intrapersonal and naturalistic intelligences, there is also the so-called. body-kinesthetic intelligence. It represents the ability to skillfully

Fizička aktivnost se, bez obzira o kom uzrastu je reč, tretira kao ponašanje u vezi sa zdravljem, koje može povoljno uticati na sve aspekte zdravlja i kompletnog razvoja dece.

### ***Značaj fizičke aktivnosti za razvoj dece***

Značaj fizičke aktivnosti za zdravlje i razvoj dece, a pogotovo njen uticaj na zdravlje u odraslom dobu, nije jednostavno ni lako ispitivati. Bar-Or (1995), Fulton i sar. (2001), Sirard i sar. (2005). Nema dovoljno longitudinalnih istraživanja interventnog tipa, jer su skupa i tehnički najsloženija.

Ipak, na osnovu postojeće empirijske i teorijske građe vezane za fizičku aktivnost dece i obilja epidemioloških nalaza na odrasloj populaciji, moguće je identifikovati potencijalne koristi fizičke aktivnosti:

- fizička aktivnost u funkciji integralnog razvoja dece,
- fizička aktivnost u funkciji zdravlja dece,
- fizička aktivnost u funkciji zdravlja u odraslom dobu.

Ismail (1984) naglašava da različiti tipovi razvoja – fizički, intelektualni, emocionalni i društveni – nisu jednostavno 'skup' nezavisnih delova, već među njima postoji 'organsko jedinstvo'. Drugim rečima, delovanje na određeni aspekt razvoja nužno se odražava na druge razvojne aspekte, tako da nema i ne može biti izolovanih uticaja. Kretanje, naime, snažno stimuliše centralni nervni sistem, aktivira velike zone kore i tako pomaže uspostavljanju novih neuronskih veza i boljem iskorišćenju moždanih kapaciteta. Kretanje igra ključnu ulogu u programiranju mozga, i pre i nakon rođenja (Cheatum i Hammond, 2000).

Značaj fizičke aktivnosti ogleda se i u činjenici da deca sa problemima u ponašanju i učenju imaju slične poteškoće i u motornom razvoju (Cheatum i Hammond, 2000). Problemi u vezi sa učenjem često potiču iz problema motornog razvoja koji nisu blagovremeno prepoznati.

Gardnerova teorija multiple inteligencije takođe priznaje značaj kretanja, jer kinestetička inteligencija predstavlja jednu od osam vrsta inteligencije (Detterman, 2005). Naime, američki psiholog Gardner, predložio je 1983. godine teoriju inteligencije sa namerom da proširi tradicionalnu definiciju inteligencije. Umesto postojanja jedne opšte inteligencije, Gardner smatra da postoji više vrsta inteligencija, od kojih svaka predstavlja nezavisan sistem u mozgu. Pored lingvističke, logičko-matematičke, prostorne, muzičke, interpersonalne, intrapersonalne i naturalističke inteligencije, postoji i tzv. telesno-kinestetička inteligencija. Ona predstavlja

use the body or parts of the body in various activities such as dancing, sports, acting, surgery, and the like.

Physical activity in the function of children's health. According to the World Health Organization, physical activity is a key determinant of energy consumption, and is in the function of energy balance and weight control. This is especially important in a situation where obesity becomes a global phenomenon, and one of the main obstacles in the prevention of non-communicable diseases. In many European countries, more than half of the adult population is moderately obese, and up to 30% is clinically obese (Obesity in Europe, 2002). The prevalence of obesity among children is significantly increased and in some regions it reaches up to 25%. According to the same report, childhood obesity represents an acute health crisis and the rising prevalence of diabetes (type 2) in obese children is a signal for an alert. Although they emphasize that obesity is primarily induced by inadequate nutrition, limited opportunities for physical activity and an ever-increasing sedentary lifestyle contribute to early obesity in children. In obese children, diabetes mellitus type 2, hypertension, low self-esteem, and lower quality of life related to health (AAP, 2003) are recorded to a greater extent.

Systematic exercise is a powerful stimulus for the whole organism and all major organ systems, encouraging trophic processes and strengthening the adaptive abilities of the organism. Many studies have shown that exercise (exercise) of low to moderate intensity stimulates the immune function (Freedson, 1997). The high incidence of poor body and lowered feet in pre-school children is also associated with insufficient activity of children.

Also, physical activity is in the function of the development of motor skills and skills, which is the basis for the later development of moving skills and their application in sports, recreation and everyday life. School age is an extremely important period for acquiring fundamental skills, but attainment of mature patterns of these skills can not be left only to the spontaneous maturation process, but it is also necessary to create opportunities for learning and practicing (Gallahue & Ozmun, 1998). „Insecurity, unfortunately, interferes with the child's ability to play and participate in sports activities. This reverses the child's ability to create friends and learn socially acceptable behavior. Uncoordination also intensifies the difficulties that a child can have with school tasks „(Cheatum and Hammond, 2000, p. 16).

As already mentioned, the nature of the impact, and the mechanisms of the activity of childhood physical activity in childhood, are still not sufficiently known. There are several models that explain the possible relationship

sposobnost većeg korišćenja tela ili delova tela u različitim aktivnostima poput plesa, sportova, glume, hirurije i sl.

Fizička aktivnost u funkciji zdravlja dece. Prema Svetskoj zdravstvenoj organizaciji, fizička aktivnost predstavlja ključnu determinantu energetske potrošnje, i u funkciji je energetske balansa i kontrole telesne težine. To je posebno važno u situaciji kada gojaznost postaje globalni fenomen, i jedna od glavnih prepreka u prevenciji nezaraznih bolesti. U mnogim evropskim zemljama, više od polovine odrasle populacije je umereno gojazno, a do 30% je klinički gojazno (Obesity in Europe, 2002). Prevalencija gojaznosti među decom je u značajnom porastu i u pojedinim regionima dostiže i do 25%. Prema istom izveštaju, dečja gojaznost predstavlja akutnu zdravstvenu krizu i rastuća zastupljenost dijabetesa (tip 2) kod gojazne dece predstavlja signal za uzbunu. Iako ističu da je gojaznost pre svega indukovana neadekvatnom ishranom, ograničene mogućnosti za fizičku aktivnost i sve zastupljeniji sedentarni način života doprinose ranoj gojaznosti kod dece. Kod gojazne dece u većoj meri se registruju dijabetes melitus tip 2, hipertenzija, nisko samocenjeje, te niži kvalitet života povezan sa zdravljem (AAP, 2003).

Sistematsko vežbanje predstavlja snažan stimulans za ceo organizam i sve velike organske sisteme, podstičući trofičke procese i jačajući adaptivne sposobnosti organizma. Mnoga istraživanja pokazala su da trening (vežbanje) niskog do umerenog intenziteta podstiče imunu funkciju (Freedson, 1997). Visoka zastupljenost loših držanja tela, te spuštenog stopala kod dece predškolskog uzrasta, takođe se dovodi u vezu sa nedovoljnom aktivnošću dece.

Takođe, fizička aktivnost je u funkciji razvoja motoričkih sposobnosti i veština, što predstavlja osnovu za kasnije usavršavanje kretnih veština i njihovu primenu u sportu, rekreaciji i svakodnevnom životu. Školsko doba je izuzetno važan period za sticanje fundamentalnih kretnih veština, ali dostizanje zrelih obrazaca tih veština ne može se prepustiti samo spontanom procesu sazrevanja, već je potrebno stvarati mogućnosti za učenje i uvežbavanje (Gallahue & Ozmun, 1998). «Nespretnost, na nesreću, interferira sa sposobnošću deteta da se igra i učestvuje u sportskoj aktivnosti. To povratno redukuje mogućnosti deteta da stvara prijatelje i uči socijalno prihvatljivo ponašanje. Nekoordinisanost takođe intenzivira teškoće koje dete može imati sa školskim zadacima» (Cheatum i Hammond, 2000; str. 16).

Kao što je već rečeno, priroda uticaja, te mehanizmi delovanja fizičke aktivnosti u detinjstvu na zdravlje

between adult health and activity in the younger age; by Blair et al. (1989), there are three possible directions of the activity of increased physical activity during childhood to the health of an adult:

1. Activity in childhood improves the health of the child, which then uses the health of an adult.
2. The active lifestyle during childhood has direct health benefits in later years.
3. Active child becomes active adult, which is therefore exposed to less risk of illness than inactive adult.

Fulton et al. (2001) state that there is evidence that some chronic diseases (eg obesity, hyperlipidemia, coronary heart disease, diabetes mellitus type 2) may begin to develop during childhood and that healthcare behavior of children can be a precursor to adult health behaviors. Thus, for example, children who have a higher cholesterol level are three times more prone than other children, to have high levels of cholesterol and as adults (NCEP, 1991). According to the American Pediatric Academy, there is a link between early obesity and obesity in adulthood. The probability that obesity will be maintained and in adulthood increases with age: in children 4 years of age it is 20%, and in adolescents as much as 80% (AAP, 2003).

Dealing with physical activity at an early age, especially with the support and encouragement of parents, teachers and others, enables the creation of positive attitudes towards physical activity and the establishment of appropriate habits and value systems (Đorđić and Bala, 2006).

#### SAMPLE AND METHOD OF RESEARCH

As a part of this research, we wanted to determine the situation on the field of anthropological and motor development between members of Roma and non-Roma population of elementary school students, who are attending classes in the north of Vojvodina. The whole sample was 184 Roma students, who were elementary school students on the territory of the municipalities of Novi Kneževac and Kanjiža. We included the same number of non-Roma students in the study and they were representing the control group. Since the number of Roma children is not representative in this research, we didn't want to analyze it in detail (on a centil basis). According to the Helsinki Declaration, the participation of children in both samples was voluntary. In accordance with the applicable laws of the Republic of Serbia, only those students were included in the sample of the Roma population whose parents, when enrolling in school, declared with their signature, that their child belongs

u odraslom dobu, još uvek nisu dovoljno poznati. Postoji više modela koji objašnjavaju moguću vezu između zdravlja odrasle osobe i aktivnosti u mlađem uzrastu; po Blair i sar. (1989) postoje tri moguća pravca delovanja povećane fizičke aktivnosti tokom detinjstva na zdravlje odrasle osobe:

1. Aktivnost u detinjstvu poboljšava zdravlje deteta, što zatim, koristi zdravlju odraslog.
2. Aktivan način života tokom detinjstva ima direktne koristi po zdravlje u kasnijim godinama.
3. Aktivno dete postaje aktivna odrasla osoba, koja je stoga izložena manjem riziku od oboljevanja nego neaktivna odrasla osoba.

Fulton i sar. (2001) navode da postoje dokazi da neke hronične bolesti (npr. gojaznost, hiperlipidemia, koronarna bolest srca, dijabetes melitus tip 2) mogu početi da se razvijaju tokom detinjstva i da zdravstveno ponašanje dece može biti prekursor zdravstvenog ponašanja odraslih. Tako, na primer, deca koja imaju viši nivo holesterola tri puta su sklonija u odnosu na drugu decu, da imaju visok nivo holesterola i kao odrasle osobe (NCEP, 1991). Prema Američkoj pedijatrijskoj akademiji, postoji povezanost između rane gojaznosti i gojaznosti u odraslom dobu. Verovatnoća da će se gojaznost zadržati i u odraslom dobu raste sa uzrastom: kod dece uzrasta 4 godine iznosi 20%, a kod adolescenata čak 80% (AAP, 2003).

Bavljenje fizičkom aktivnošću u ranom uzrastu, posebno uz podršku i podsticanje roditelja, učitelja i drugih, omogućava stvaranje pozitivnih stavova prema fizičkoj aktivnosti i uspostavljanje odgovarajućih navika i sistema vrednosti (Đorđić i Bala, 2006).

#### UZORAK I METODA ISTRAŽIVANJA

U sklopu ovog istraživanja želeli smo da utvrdimo stanje na planu antropološkog i motoričkog razvoja između pripadnika romske i neromske populacije učenika osnovnih škola koji pohađaju nastavu na severu Vojvodine. Ceo uzorak je iznosio 184 učenika romske nacionalnosti koji su učenici osnovnih škola na teritorijama opština Novi Kneževac i Kanjiža. U ispitivanje smo uključili isti broj učenika neromske populacije i oni su predstavljali kontrolnu grupu. Pošto broj romske dece nije reprezentativan u ovom radu smo odustali od veoma detaljne analize (na centilnim osnovama). Prema Helsinškoj Izjavi učešće dece u oba uzorka bilo je na dobrovoljnoj osnovi. Shodno važećim zakonima Republike Srbije samo smo one učenike ubrajali u uzorak romske populacije čiji su se roditelji prilikom upisa u školu svojim potpisom izjasnili da njihovo dete pripada



to the Roma community. The age of the examined children on the day of the examination was between 6.51 and 14.50 years. The range of age and mean values were determined on the basis of the International Biological Program (Weiner & Lourie, 1969). The organized activity in the field of physical activity was represented by physical education at school three times a week, and we did not collect data about sports activities outside the school. We measured the following anthropometric indicators: body height, body mass, skin folds. We calculated the relative amount of subcutaneous fat, and we calculated the body mass index (BMI). The running speed on short sections was measured by running (sprinting) at 30 meters, and cardiorespiratory endurance was measured by running at 1200 meters.

### RESULTS

After data processing both from the anthropological and the motor space, the results obtained were presented in parallel with a clear distancing of the results for both populations involved in the sample.

We have shown the results related to body height and body mass in Table 1.

romskoj zajednici. Kalendarski uzrast ispitivane dece je na dan ispitivanja bio u rasponu između 6,51 i 14,50 godina. Raspon uzrasta i srednje vrednosti smo odredili na osnovu Međunarodnog Biološkog Programa (Weiner i Lourie, 1969). Organizovanu aktivnost na planu fizičke aktivnosti predstavljala je nastava fizičkog vaspitanja u školi tri puta nedeljno, a o sportskim aktivnostima van škole nismo skupili podatke. Izmerili smo sledeće antropometrijske pokazatelje: telesnu visinu, telesnu masu, kožne nabore. Izračunali smo relativnu količinu potkožne masti, izračunali smo i stepen uhranjenosti (BMI). Brzinu trčanja na kratkim deonicama izmerili smo na 30 metara a kardiorespiratornu izdržljivost pomoću trčanja na 1200 metara.

### REZULTATI ISTRAŽIVANJA

Nakon obrade podataka kako sa antropološkog tako i sa motoričkog prostora dobijene rezultate prikazali smo uporedno sa jasnim distanciranjem rezultata za obe populacije koje su uključene u uzorak.

**Table 1.** Results of body height and mass of Roma and non-Roma children / **Tabela 1.** Rezultati romske i neromske dece na planu telesne visine i telesne mase

Age / Uzrast	n	Body height / Telesna visina (cm)				Body mass / Telesna masa (kg)			
		Roma / romi		Non-Roma / ne romi		Roma / romi		Non-Roma / ne romi	
		X	SD	X	SD	X	SD	X	SD
7	23	121.62	6.09	125.42*	5.16	22.09	6.48	24.25*	6.07
8	23	126.26	6.56	130.58*	5.39	25.37	7.04	28.59*	6.38
9	23	131.89	7.02	135.98*	6.12	31.42	7.31	32.64*	6.89
10	23	137.74	7.05	142.26*	6.38	35.55	10.33	36.64*	8.58
11	23	142.56	7.10	147.69*	7.09	38.28	11.52	40.37*	10.09
12	23	147.98	7.88	153.16*	7.90	42.18	11.26	44.62*	10.32
13	23	155.92	8.18	159.09*	8.16	47.20	12.27	49.79*	11.34
14	23	162.80	7.46	165.79*	7.89	56.58	13.09	55.69	12.39

\* the difference of averages is significant at the level of 5% / \* razlika proseka je signifikantna na nivou 5%

Roma children in all ages had significantly lower body height than their peers of non-Roma ethnicity. The difference of averages in real values ranged between 2.0 and 4.3 centimeters. Partly due to the significantly lower body height, the body mass of Roma children was significantly lower in the range of 7 to 13 years. In 14-year-olds, the difference of averages was not significant.

The results showing the body mass index and relative subcutaneous fat were shown in Table 2.

Romska deca su u svim uzrastima bila signifikantno niža od svojih vršnjaka neromske nacionalnosti. Razlika proseka u okviru realnih vrednosti kretala se između 2,0 i 4,3 santimetra. Delimično zbog signifikantno niže telesne visine, telesna masa romske dece značajno je bila manja u rasponu od 7 do 13 godina. Kod dece od 14 godina razlika proseka već nije bila signifikantna.

**Table 2.** Body mass index and relative subcutaneous fat / **Tabela 2.** Index telesne mase i relativne potkožne masti

Age / Uzrast	n	Body mass index / Index telesne težine (BMI)				Relative subcutaneous fat / Količina relativne potkožne masti (%)			
		Roma / romi		Non-Roma / ne romi		Roma / romi		Non-Roma / ne romi	
		X	SD	X	SD	X	SD	X	SD
7	23	14.29	4.18	15.10*	3.69	18.59	6.49	17.01*	5.10
8	23	15.51	4.29	16.59*	3.62	19.11	6.88	17.29*	5.57
9	23	17.29	4.20	17.39	3.60	19.61	7.20	17.59*	5.87
10	23	18.39	5.30	18.09	4.09	21.14	7.49	19.35*	6.10
11	23	18.62	5.49	18.71	4.48	21.09	7.59	19.88*	6.26
12	23	19.10	5.06	19.14	4.29	20.89	7.41	19.91*	6.23
13	23	19.19	5.03	19.59	4.31	20.79	6.52	19.52*	6.31
14	23	21.08*	4.89	20.29	4.40	21.28	6.69	19.79*	6.14

\* the difference of averages is significant on the level of 5% / \* razlika proseka je signifikantna na nivou 5%

The body mass index of the non-Roma sample was significantly higher in respondents aged 7 to 8 years, while the same value was significantly higher for Roma children at the age of 14. Regardless of statistically similar results in BMI, subcutaneous fat was more pronounced among members of the Roma population in all the eight examined groups.

Index telesne mase učenika u neromskom uzorku bio je signifikantno veći kod ispitanika u uzrastu od 7 do 8 godina, dok je ista vrednost bila osetno veća kod romske dece u uzrastu od 14 godina. Bez obzira na statistički skoro slične rezultate kod indexa telesne težine (BMI), potkožna mast je bila izraženija kod pripadnika romske populacije u svih osam ispitivanih grupa.

**Table 3.** Time results of running at 30 and 1200 meters / **Tabela 3.** Vremenski rezultati trčanja na 30 i na 1200 metara

Age / Uzrast	n	Running at 30 meters / Trčanje na 30 metara (s)				Running at 1200 meters / Trčanje na 1200 metara (s)			
		Roma / romi		Non-Roma / ne romi		Roma / romi		Non-Roma / ne romi	
		X	SD	X	SD	X	SD	X	SD
7	23	6,49	0,63	6,29*	0,56	461,00	52,51	422,13*	46,52
8	23	6,36	0,63	6,18*	0,52	449,87	51,52	402,02*	44,21
9	23	6,25	0,60	6,03*	0,51	437,28	50,37	388,80*	43,04
10	23	6,14	0,65	5,88*	0,63	426,38	52,62	364,91*	42,94
11	23	6,01	0,59	5,73*	0,61	421,85	53,49	356,49*	42,55
12	23	5,82	0,75	5,57*	0,65	420,85	54,79	346,15*	38,07
13	23	5,48	0,54	5,28*	0,56	403,51	57,09	332,15*	35,97
14	23	5,29	0,59	5,15*	0,21	387,76	56,21	315,94*	35,53

\* the difference of averages is significant on the level of 5% / \* razlika proseka je signifikantna na nivou 5%

The results of the tests that measured the speed and the endurance of cardiorespiratory system equally in all eight groups were significantly weaker in the population of Roma children compared to children from non-Roma population.

### CONCLUSION

Regardless of the fact that the Roma children from Vojvodina originate from North India and from the noticeable low socio-economic status of Roma children living in Vojvodina, in each of the examined groups they were 1.5-2.00 centimeters taller than their peers who live

Rezultati testova koji su merili brzinu i izdržljivost kardiorespiratornog sistema podjednako su u svih osam grupa bili signifikantno slabiji u populaciji romske dece u odnosu na decu iz neromske populacije.

### ZAKLJUČCI

Neovisno od toga što Romi iz Vojvodine vode poreklo iz Severne Indije i od veoma jasno primetnog niskog socioekonomskog statusa Roma koji žive u Vojvodini u svakoj od ispitivanih grupa bili su za 1,5-2,00 santimetra viši nego njihovi vršnjaci koji žive u Pataliji u severnoj Indiji (Singh et al.,1992). Moramo istaći i

in Patalia in Northern India (Singh et al., 1992). We must also point out that the body mass index of children of the same age who live in Patalia are significantly lower than the index of Roma children from Vojvodina. In the case of biological acceleration or retardation, average indicators of height and weight are very important. In line with the comparison with domestic references, we concluded that the lagging in growth and development of Roma children is estimated at 0.5-0.75 years. Such a differentiation in an individual case is not significant, but in the case of a group of more than one hundred members, it is a warning sign. Regardless of the differences arising from anthropological origin, the physical and motor development of an individual or group is significantly conditioned by the way of life, therefore in this case the role of systematically implemented physical activity is crucial. When interpreting significant differences, it should be pointed out that the adverse effects of hypokinesia can also be detected in the control group (Photiou et al. 2008., Siva et al., 2009). In the control group, an increased amount of subcutaneous fat was found compared to generations of 20-30 years ago, and motor abilities were significantly lower compared to earlier generations from the same period (Eiben et al., 1991). Regarding the Roma community, we need to look at the reasons why in all eight groups, higher values of fat tissue were found in Roma children compared to the control group. At the same time, better results were noted by the control group compared to Roma children, in running tests that measured speed (running at 30 meters) and endurance (running at 1200 meters). This data undoubtedly confirms the theory about the significant hypokinesia of Roma children, as well as the theory of irregular habits (both in quantity and in quality) in nutrition. The consequence of these facts is that, instead of social connection, there are various forms of segregation (because of the repulsive attitude of non-Roma communities, but also because of the auto segregation of the Roma themselves). We can say, that the assessment that Roma children lagging behind in physical and motor development is less and less the consequence of genetic factors, and the causes must be sought in economical and social conditions. Starting from the known problems encountered by teachers working with Roma children, the problems of Roma children themselves, as well as the results of this analysis, we consider that improvement of educational practice can be achieved by encouraging teachers to plan and undertake activities in accordance with their own potentials in their work environment.

podatak da je index telesne mase dece istog uzrasta koji žive u Pataliji signifikantno manji od indexa romske dece iz Vojvodine. Kod biološke akceleracije ili retardacije veoma su značajni prosečni pokazatelji visine i težine. U skladu i nakon upoređivanja sa domaćim referencama dolazimo do zaključka da se zaostajanje u rastu i razvoju romske dece procenjuje na 0,5-0,75 godina. Takva diferencijacija u slučaju pojedinca nije značajna ali u slučaju grupe koja broji više od sto članova predstavlja upozoravajući podatak. Bez obzira na razlike koje nastaju od antropološkog porekla, telesni i motorički razvoj pojedinca ili grupe značajno je uslovljen načinom života, dakle u ovom slučaju presudna je uloga sistematski sprovedene fizičke aktivnosti. Prilikom tumačenja signifikantno značajnih razlika moramo istaći da se štetni uticaji hipokinezije mogu ustanoviti i u kontrolnoj grupi (Photiou et al. 2008., Siva et al., 2009). U kontrolnoj grupi utvrđena je povećana količina potkožne masti u odnosu na generacije od pre 20-30 godina, a motoričke sposobnosti su značajno slabije u odnosu na ranije generacije iz istog perioda (Eiben et al., 1991). Vodeći brigu o romskoj zajednici moramo da se osvrnemo na razloge zašto su u svih osam grupa utvrđene veće vrednosti masnog tkiva kod romske dece u odnosu na kontrolnu grupu. Istovremeno opominju i bolji rezultati na testovima trčanja koja su merila brzinu (trčanje na 30 metara) i izdržljivost (trčanje na 1200 metara) kod pripadnika kontrolne grupe u odnosu na decu romske nacionalnosti. Ovaj podatak nedvosmisleno potvrđuje teoriju o značajnoj hipokineziji romske dece kao i teoriju o nepravilnim navikama (kako u kvantitetu tako i u kvalitetu) u ishrani. Posledica navedenih činjenica je da se umesto društvenog priključivanja pojavljuju razni oblici segregacije (zbog odbojnog stava neromskih zajednica ali i zbog auto segregacije samih Roma). Nije bez osnova procena da je osetno zaostajanje romske dece u telesnom i motoričkom razvoju sve manje posledica genetskih uticaja, a da se uzroci moraju tražiti u ekonomskim i društvenim prilikama. Polazeći od poznatih problema s kojima se sreću učitelji i nastavnici koji rade s romskom decom, problema same romske dece, kao i rezultata ove analize, smatramo da se na poboljšanje obrazovne prakse može uticati kroz podsticanje nastavnika da planiraju i preduzimaju aktivnosti u skladu sa sopstvenim potencijalima u svom radnom okruženju.

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