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ACTIVE COMMUTING TO SCHOOL, BMI, AND HEALTH-RELATED FITNESS OF PRIMARY SCHOOL STUDENTS

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Abstract

Active commuting is considered one of the many forms of physical activity that could increase the level of physical activity among school children. The aim of the current study was to examine the differences between the health-related fitness of school children who engage in active and passive commuting to school, and to explore the associations between active commuting to school and the health-related physical fitness of school children. A total of 152 children (58 girls and 94 boys), aged 12, from four primary schools in the Kraljevo area participated in this study. Basic anthropometric measures were taken along with eight physical fitness tests. Boys who actively commute had greater upper body muscular endurance and cardiorespiratory fitness, and girls who were active school commuters had better results in flexibility, explosive power, upper body muscular endurance, and cardiorespiratory fitness. Linear regression analysis revealed significant associations between active commuting, and abdominal strength and cardiorespiratory fitness for boys, and flexibility and upper body muscular endurance for girls. Considering these positive findings, it is recommended that future studies be conducted on a larger sample and that they include intensive educational campaigning to encourage Serbian schoolchildren to practice active commuting to and from school is likewise recommended.

Key words: school children, physical activity, motor abilities.

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АКТИВНИ ТРАНСПОРТ ДО ШКОЛЕ, БМИ И ЗДРАВСТВЕНО УСМЕРЕНИ ФИТНЕС УЧЕНИКА ОСНОВНЕ ШКОЛЕ

Апстракт

Активни транспорт се сматра једном од многих форми физичке активности које могу да повећају ниво физичке активности код школске деце. Циљ овог истраживања био је да се испитају разлике између ученика који користе активни и пасивни транспорт до школе у нивоу здравствено усмереног фитнеса, као и да се истраже везе између активног транспорта до школе и здравствено усмереног фитнеса код ученика основне школе. Истраживањем је обухваћено укупно 152 ученика (58 девојчица и 94 дечака), старости 12 година из четири основне школе са подручја града Краљева. Измерене су основне антропометријске мере и примењено је осам тестова за процену физичке спремности. Дошло се до сазнања да су дечаци који практикују активни транспорт имали већу мишићну издржљивост горњег дела тела и виши ниво кардиореспираторне спремности, а да су девојчице које активно путују до школе и назад имају бољу флексибилност, експлозивну снагу ногу, мишићну издржљивост горњег дела тела и кардиореспираторну спремност. Резултати линеарне регресионе анализе су показали значајну повезаност између активног транспорта, снаге мишића абдомена и кардиореспираторног фитнеса код дечака, те флексибилности и мишићне издржљивости горњег дела тела код девојчица. Имајући у виду позитивне резултате овог истраживања, препоручује се да будућа истраживања обухвате већи узорак и интензивне образовне кампање, како би се школска деца у нашој земљи подстакла да у већој мери практикују активни транспорт до и из школе.

Кључне речи: школска деца, физичка активност, моторичке способности.

INTRODUCTION

Decreased levels of physical activity, a sedentary lifestyle, and an epidemic of childhood obesity represent public health crises on a global level (Villa-González, Barranco-Ruiz, and Evenson, 2018). Since an overweight status during childhood and adolescence is associated with increased morbidity and mortality in later life (Dietz, 1994; Must et al., 1999), the World Health Organization (WHO) has published recommendations on physical activity and sedentary behaviour for children and adolescents. These recommendations state that children should accumulate at least 60 minutes of moderate-to-vigorous physical activity daily (WHO, 2010). Apart from well the documented changes in the motor behaviour of young children, it has been suggested that the positive self-image that younger primary school pupils have about themselves is a good prerequisite of an effective physical education class (Buišić, Cvejić, and Pejović, 2019). Some authors consider active commuting to school an important and missed opportunity for physical activity, because most children commute to and from school 5 days per week during the school year (Davison, Werder, and Lawson, 2008; Chillón et al., 2011).

Active commuting, in the forms of walking or cycling, followed the overall trend of physical activity decrease, and has consistently been declining over the last 30 years (Mendoza & Liu, 2014). Some authors suggest that various interventions are needed to reverse this trend (Villa-González et al. 2018). While increases in children's weight have coincided with declines in active commuting to and from school (Salmon, Timperio, Cleland, & Venn, 2005), several systematic reviews reported positive associations between active commuting to school and cardiorespiratory fitness in youth (Larouche et al., 2014; Lubans, et al., 2011). The association between active commuting to school and health-related physical fitness has been studied in adolescents (Madsen et al., 2009; Meron et al., 2011) and in children (Cooper et al., 2008; Ostergaard et al., 2013). The majority of the studies that reported associations between active commuting to school and the health-related physical fitness of schoolchildren primarily focused on cardiorespiratory fitness. One of the few studies that explored associations between active commuting to school and the health-related physical fitness of schoolchildren reported that active commuting to school was significantly associated with higher levels of both speed-agility and lower body muscular fitness in boys and girls, respectively (Villa-González, Ruiz, and Chillón, 2015). Interestingly, these authors stated that there were no significant associations between active commuting to school and cardiorespiratory fitness. Every effort to increase physical activity among youth should be considered an essential component of the extended strategy needed to hinder the global obesity epidemic. Many forms of physical activity could be targeted, including regular physical education classes, extracurricular physical activities, various forms of sports, and active commuting.

Considering the lack of literature on associations between active commuting to school and the health-related physical fitness of schoolchildren, especially in Serbia, the purpose of the study was twofold: (1) to examine differences in the health-related physical fitness between schoolchildren who engage in active and passive commuting to school; and (2) to explore the associations between active commuting to school and both aspects of health-related physical fitness of schoolchildren – cardiorespiratory and muscular fitness, respectively. We agree with the notion that school, with its teachers, institutional role, and authority can contribute to the promotion of healthy habits among schoolchildren (Petrović, Momčilović, and Pelemiš, 2022), and that our findings will be a valuable addition to the current knowledge on the matter.

METHODOLOGY

Sample

A total of 152 school children participated in the study. The sample consists of 58 girls and 94 boys. The mean age for the girls was 12.43 (SD 0.50), and the mean age for the boys was 12.21 (SD 0.41). The sample includes children from four schools (urban and suburban) in a wide range of socio-economic backgrounds, and reflects the population of children attending schools in the Kraljevo area.

Measures

The physical fitness of schoolchildren was assessed through eight tests: (1) the single leg stance; (2) hand tapping; (3) leg tapping; (4) forward bend; (5) standing broad jump; (6) sit-ups; (7) bent arm hang, and (8) 6 min lap run (reduced Cooper test). The first seven tests were selected from the test battery of Kurelić et al. (1975). The reduced Cooper test was used as a recommended test of the cardiorespiratory fitness of children (Fjørtoft, Pedersen, Sigmundsson, & Vereijken, 2011). The anthropometric measures taken include height, weight, and BMI, which was calculated using the standard equation (BMI = weight (kg)/height (m2)). Commuting to school was measured through a supervised questionnaire at school. Active commuting was assessed through responses to the question: "How do you typically get to and from school?" Participants had only the option of selecting one main mode, meaning that information on multimode trips, such as walking to or from public transport hubs, was not obtained. This variable was used to derive a two-category exposure variable for the purposes of this study: (1) passive transport (private car, taxi/minicab, motorcycle/moped/scooter, bus); and (2) active transport (walking or cycling). Measurements were taken during the last week of May, before the end of the academic year. The description of the participants is presented in Table 1.

Table 1. Descriptive statistics of participants

Characteristics	Boys	Girls
Number of active commuters (%)	60 (63.8)	34 (58.6)
Number of passive commuters (%)	34 (36.7)	24 (41.3)
Age (years), Mean (SD)	12.21 (0.41)	12.43 (0.50)
N	94	58

Data Analysis

The normality of the variables was assessed using the Kolmogorov-Smirnov test. Differences between participants that use active and passive transport of non-normal variables were tested by using the non-

parametric Mann-Whitney U-test. The Student's t-test was used for normal variables. For the statistical processing of the results of using active transport to and from school, linear regression analysis was conducted in the statistical programme IBM SPSS v.23. The dependent variable was the type of transport to and from school (1 = walking or cycling; 0 = private car, taxi/minicab, motorcycle/moped/scooter, bus). Independent variables were the eight fitness tests (the single leg stance, hand tapping, leg tapping, forward bend, standing broad jump, sit-ups, bent arm hang, and 6 min lap run (reduced Cooper test), along with BMI.

RESULTS

The male participants' characteristics and mean differences can be found in Table 2. The mean values for BMI indicate that boys who commute actively and passively all fall into the category of a healthy weight for their age and sex, with BMI cut-off points ranging between 15.47 and 21.37 (Cole & Lobstein, 2012). The results of the Mann-Whitney U-test and the Student's t-test revealed differences between boys who commute actively and passively, and these differences are reflected in weight, height, and BMI ($p<0.01$). Boys who commute passively were significantly heavier, taller, and had a higher BMI. Among the physical fitness tests, significant differences were found in the bent arm hang, and the reduced Cooper test, on which boys who commute actively had better results ($p<0.05$).

Table 2. Descriptive characteristics (mean ± sd) of the study sample variables stratified by means of commuting for boys (AC – active commuting; PC – passive commuting)

Variable	AC Boys Mean (SD)		PC Boys Mean (SD)		p
Weight (kg)	48.25	(8.83)	55.25	(11.88)	**0.01****
Height (cm)	156.38	(6.75)	160.60	(7.37)	**0.01***
BMI (kg/m2)	19.63	(2.77)	21.30	(3.63)	**0.01***
Single leg stance	18.39	(13.49)	16.70	(9.30)	0.84
Hand tapping	35.78	(3.77)	36.59	(4.65)	0.36
Leg tapping	29.40	(2.99)	29.41	(3.17)	0.74
Forward bend	34.56	(6.93)	32.19	(6.93)	0.11
Standing broad jump	166.20	(23.21)	162.13	(27.88)	0.81
Sit-ups	21.67	(4.34)	18.79	(7.15)	0.09
Bent arm hang	28.51	(19.21)	21.58	(15.28)	**0.05****
Reduced Cooper test	1077.67	(126.33)	1016.18	(161.09)	**0.05***

*Significant difference between active and passive commuters Mann–Whitney U-test, $p<0.05$.

**Significant difference between active and passive commuters Student's t-test, $p<0.05$.

The female participants' characteristics and mean differences are presented in Table 3. The mean values for BMI indicate that girls who commute actively and passively all fit in the category of a healthy weight for their age and sex, with BMI cut-off points ranging between 15.86 and 21.97 (Cole & Lobstein, 2012). No significant differences existed in weight, height, and BMI between girls who commute actively and passively. Significant differences in three physical fitness tests were found between girls who commute actively and passively. Girls who commute actively had better results in the forward bend, standing broad jump, bent arm hang, and the reduced Cooper test ($p<0.05$ in all four tests).

Table 3. Descriptive characteristics (mean ± sd) of the study sample variables stratified by means of commuting for girls (AC – active commuting; PC – passive commuting)

Variable	AC Girls Mean (SD)		PC Girls Mean (SD)		p
Weight (kg)	50.26	(8.35)	50.34	(9.65)	0.97
Height (cm)	159.35	(6.38)	158.56	(8.39)	0.68
BMI (kg/m2)	19.75	(2.66)	19.9	(2.52)	0.83
Single leg stance	26.78	(17.61)	20.90	(11.83)	0.32
Hand tapping	35.65	(4.05)	36.54	(5.50)	0.42
Leg tapping	29.15	(3.46)	30.33	(4.20)	0.25
Forward bend	40.41	(7.21)	36.50	(8.06)	**0.05***
Standing broad jump	152.67	(17.60)	142.68	(20.50)	**0.05****
Sit-ups	18.88	(4.47)	18.29	(3.66)	0.94
Bent arm hang	17.29	(10.50)	12.44	(6.38)	**0.05***
Reduced Cooper test	991.18	(102.53)	927.08	(127.02)	**0.05****

*Significant difference between active and passive commuters Mann–Whitney U-test, $p<0.05$/

**Significant difference between active and passive commuters Student's t-test, $p<0.05$.

Table 4. Results of linear regression analysis for active commuting, BMI and physical fitness tests of boys and girls

Variable	Active commuting					
	Boys			Girls		
	ß	SE	p	ß	SE	p
BMI	0.03	0.02	0.32	0.03	0.03	0.51
Single leg stance	-0.03	0.02	0.23	-0.07	0.02	**0.01**
Hand tapping	0.06	0.07	0.43	-0.05	0.18	0.64
Leg tapping	0.18	0.10	0.08	0.21	0.13	0.11
Forward bend	0.01	0.04	0.98	0.06	0.06	0.33
Standing broad jump	-0.03	0.01	0.06	0.05	0.03	0.20
Sit-ups	-0.21	0.06	**0.01**	0.10	0.10	0.32
Bent arm hang	-0.01	0.02	0.93	-0.12	0.05	**0.03**
Reduced Cooper test	-0.01	0.01	**0.05**	-0.01	0.01	0.82

Furthermore, higher scores in the single leg stance (ß = -0.07; $p<0.01$) and bent arm hang (ß = -0.12; $p<0.03$) were detected in girls. The results remained consistent when an analysis excluding BMI was performed.

The associations between active commuting to school, BMI, and health-related physical fitness are shown in Table 4. Active commuting to school was associated with abdominal muscle strength (Sit-ups; ß = -0.21; $p<0.01$), and cardiorespiratory fitness (Reduced Cooper test; ß = -0.01; $p<0.05$) in boys.

DISCUSSION

The primary aim of this study was to explore the differences between school children who commute actively and passively. Boys and girls who are active school commuters had better results in several physical fitness tests. Boys who are active commuters showed greater shoulder girdle muscular endurance (bent arm hang) and cardiorespiratory fitness (reduced Cooper test), while girls who are active commuters outperformed their less active peers in flexibility (forward bend), explosive power (standing broad jump), shoulder girdle muscular endurance (bent arm hang), and cardiorespiratory fitness (reduced Cooper test). These findings are similar to the results of the study conducted by Villa-González, Ruiz, and Chillón (2015), which note that boys and girls who commute actively had greater speed-agility (although a slight difference) and muscle strength of the lower body, respectively, than boys and girls who were less active school commuters. Basic anthropometric measures (height, weight, and BMI) were significantly higher in boys who are passive commuters, and that can be a plausible explanation for the better results in muscular endurance and cardiorespiratory fitness of boys who are active commuters. That is in agreement with literature showing that subjects (7–12 years old) with a higher BMI and body mass had lower performances on all tests requiring propulsion, or lifting of the body mass, and endurance (Casajús, Leiva, Villarroya, Legaz, & Moreno, 2007). Similar to the results of this study, the findings of another study confirmed significant differences between girls who are active and passive commuters in the following: standing broad jump, bent arm hang, 10×5 m sprint, plate tapping, sit-ups, and 20-m shuttle run (Van de Kop, Toussaint, Janssen, Busch, & Verhoeff, 2021).

Furthermore, the present study found more differences in favour of active commuters in relation to cardiorespiratory fitness (Reduced Cooper test) for both boys and girls, which is in concordance with the study conducted on a sample of Danish and Norwegian children who were active commuters and cycled to school (Cooper et al., 2006; Ostergaard, Kolle, Steene-Johannessen, Anderssen, & Andersen, 2013). These findings support the notion that incorporating more walking into the daily routine should be seen as an important goal in the long-term maintenance of the initial increases in physical activity (Ekblom & Astrand, 2000; Owen, Leslie, Salmon, & Fotheringham, 2000).

The second intent of this study was to explore the associations between active commuting to school and health-related physical fitness (cardiorespiratory and muscular fitness) of schoolchildren. A significant association was detected between active commuting to school, and abdominal muscle strength and cardiorespiratory fitness in boys, which is consistent with other studies (Chillón et al., 2010; Sandercock & Ogunleye, 2012). The results of the study showed that a significant association exists between active commuting to school, and balance (Single leg stance) and shoulder girdle muscular endurance (Bent arm hang) in girls. Other authors found significant correlations between physical fitness, measured by eight physical fitness tests, and the overall level of physical activity, objectively measured with the accelerometer (57,1% active commuters) in girls ages 11 and 12 (Đurić, Bogataj, Zovko & Sember, 2021).

A strong point of this study is the fact that the sample included children from four schools (urban and suburban), from a wide range of socio-economic backgrounds and, thus, reflected the population of children attending schools in the Kraljevo area. However, there are several limitations that should be considered when interpreting the findings of this study. The first limitation is the relatively small sample of participants. The cross-sectional nature of the study design limits causal inferences. Active commuting was not assessed and analysed separately (walking, cycling), but categorically (active or passive commuters). Other studies have found smaller effects for walking than for cycling (Flint & Cummins, 2016). Data from this study did not include the separate body weight status of the participants (underweight, healthy weight, overweight and obese). Further studies, those with more objective measures, should be considered.

CONCLUSION

The present study indicates that boys and girls who are active commuters have an advantage in several health-related fitness parameters over their peers who are passive commuters. The most apparent advantage was in cardiorespiratory fitness, in both boys and girls. It is a fact that children have to travel to and from school in some manner every day, and that should be viewed as an opportunity to gain multiple benefits from physical activity. To the best of our knowledge, no organised educational campaign in our country encourages active commuting to and from school. Considering its low-cost, high-gain potential, that should be a priority for our educational authorities.

REFERENCES

Buišić, S., Cvejić, D., and Pejović, T. (2019). Aspects of the self-concept of younger school children as important factors for active participation in physical education teaching. *Teme*, 43(1), 19-31.

Casajús, J.A., Leiva, M.T., Villarroya, A., Legaz, A., & Moreno, L.A. (2007). Physical Performance and School Physical Education in Overweight Spanish Children. *Annals of Nutrition & Metabolism*, 51(3), 288-296.

Chillón, P., Ortega, F.B., Ruiz, J.R., Veidebaum, T., Oja, L., Maestu, J., & Sjostrom, M. (2010). Active commuting to school in children and adolescents: An opportunity to increase physical activity and fitness. *Scandinavian Journal of Public Health*, 38, 873–879.

Chillón, P., Evenson, K., Vaughn, A., et al. (2011). A systematic review of interventions for promoting active transportation to school. *International Journal of Behavioral Nutrition and Physical Activity*, 8(1)–17.

Cole, T.J., Lobstein, T. (2012). Extended international (IOTF) body mass index cut-offs for thinness, overweight and obesity. *Pediatric Obesity*, 7(4), 284-294.

Cooper, A.R., Wedderkopp, N., Jago, R., Kristensen, P.L., Moller, N.C., Froberg, K., Page, A.S., & Andersen, L.B. (2008). Longitudinal associations of cycling to school with adolescent fitness. *Preventive Medicine*, 47, 324–328.

Cooper, A.R., Wedderkopp, N., Wang, H., Andersen, L.B., Froberg, K., & Page, A.S. (2006). Active travel to school and cardiovascular fitness in Danish children and adolescents. *Medicine & Science in Sports & Exercise*, 38, 1724–1731.

Davison, K.K., Werder, J.L., and Lawson, C.T. (2008). Children's active commuting to school: Current knowledge and future directions. *Preventing Chronic Disease*, 5(3), A100.

Dietz, W.H. (1994). Critical periods in childhood for the development of obesity. *The American Journal of Clinical Nutrition*, 59, 955-959.

Đurić, S., Bogataj, Š., Zovko, V., & Sember, V. (2021). Associations Between Physical Fitness, Objectively Measured Physical Activity and Academic Performance. *Frontiers in public health*, 9, 778837.

Ekblom, B., Astrand, P.O. (2000). Role of physical activity on health in children and adolescents. *Acta Paediatrica*, 89, 762–764.

Fjørtoft, I., Pedersen, A.V., Sigmundsson, H., Vereijken, B. (2011). Measuring physical fitness in children who are 5 to 12 years old with a test battery that is functional and easy to administer. *Physical Therapy*, 91(7), 1087-1095.

Flint, E., & Cummins, S. (2016). Active commuting and obesity in mid-life: cross-sectional, observational evidence from UK Biobank. *Lancet Diabetes & Endocrinology*, 4(5):420-435.

Kurelić, N., Momirović, K., Stojanović, M., Šturm, J., Radojević, Đ. & Viskić-Štalec, N. (1975). *Structure and development of morphological and motor dimensions in youth*. Belgrade: Institute for the Scientific Research of the Faculty of Physical Education.

Larouche, R., Saunders, T.J., Faulkner, J., Colley, G.E., Tremblay, M. (2014). Associations between Active School Transport and Physical Activity, Body Composition, and Cardiovascular Fitness: A Systematic Review of 68 Studies. *Journal of Physical Activity and Health*,11, 206–227.

Lubans, D., Boreham, C., Kelly, P., et al. (2011). The relationship between active travel to school and health-related fitness in children and adolescents: A systematic review. *International Journal of Behavioral Nutrition and Physical Activity*, 8(5), 1-12.

Madsen, K.A., Gosliner, W., Woodward-Lopez, G., & Crawford, P.B. (2009). Physical activity opportunities associated with fitness and weight status among adolescents in low-income communities. *Archives of Pediatrics & Adolescent Medicine*, 163, 1014–1021.

Mendoza, J.A., & Liu, Y. (2014). Active Commuting to Elementary School and Adiposity: An Observational Study. *Childhood obesity*, 10(1), 34-41.

Meron, D., Rissel, C., Reinten-Reynolds, T., & Hardy, L.L. (2011). Changes in active travel of school childrenfrom 2004 to 2010 in New South Wales, Australia. *Preventive Medicine,* 53, 408–410.

Must A, Spadano J, Coakley EH, Field AE, Colditz G, Dietz WH: The disease burden associated with overweight and obesity. *JAMA*, 282, 1523-1529.

Ostergaard, L., Kolle, E., Steene-Johannessen, J., Anderssen, S.A., & Andersen, L.B. (2013). Cross sectional analysis of the association between mode of school transportation and physical fitness in children and adolescents. *International Journal of Behavioral Nutrition and Physical Activity*, 10(1), 1-7.

Owen, N., Leslie, E. Salmon, J., & Fotheringham, M.J. (2000). Environmental determinants of physical activity and sedentary behavior. *Exercise and Sport Sciences Reviews*, 28, 153–158.

Petrović, J., Momčilović, & Pelemiš, V. (2022). Gender as a determinant of parents and children's attitudes toward the inclusion of sports branches into the elementary school curriculum. *Teme*, 47(4), 851-867.

Salmon, J., Timperio, A., Cleland, V., & Venn, A. (2005). Trends in children's physical activity and weight status in high and low socio-economic areas of Melbourne, Victoria. *Australian and New Zealand Journal of Public Health*, 29(4), 337–341.

Sandercock, G.R.H., Ogunleye, A.A. (2012). Screen time and passive school travel as independent predictors of cardiorespiratory fitness in youth. *Preventive Medicine*, 54, 319–322.

Van de Kop, H., Toussaint, H., Janssen, M., Busch, V., & Verhoeff, A. (2021). Improving Physical Activity Levels in Prevocational Students by Student Participation: Protocol for a Cluster Randomized Controlled Trial. *JMIR research protocols*, 10(7), e28273.

Villa-González, E., Barranco-Ruiz, Y, Evenson, K.R., and Chillon, P. (2018). Systematic review of interventions for promoting active school transport. *Preventive Medicine*, 111, 115-134.

Villa-González, E., Ruiz, J.R., & Chillón, P. (2015). Associations between Active Commuting to School and Health-Related Physical Fitness in Spanish School-Aged Children: A Cross-Sectional Study. *International Journal of Environmental Research and Public Health*, 12, 10362-10373.

WHO, 2010. Global recommendations on physical activity for health. WHO Press, Switzerland.

АКТИВНИ ТРАНСПОРТ ДО ШКОЛЕ, БМИ И ЗДРАВСТВЕНО УСМЕРЕНИ ФИТНЕС УЧЕНИКА ОСНОВНЕ ШКОЛЕ

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Резиме

Активни транспорт до школе, поред редовних часова физичког васпитања, ваннаставних физичких активности и разних облика спорта, сматра се једним од многих облика физичке активности који би могли бити усмерени ка циљу повећања нивоа физичке активности школске деце. Циљ овог исттраживања био је да се испитају разлике између школске деце која користе активни или пасивни транспорт у здравствено усмереном физичком фитнесу, као и да се испита повезаност између активног транспорта са оба аспекта здравствено усмереног физичког фитнеса – кардиореспираторног и мишићног - код ученика основне школе. У истраживању је учествовало укупно 152 деце (58 девојчица и 94 дечака) узраста од 12 година из четири основне школе са подручја Краљева. Измерене су основне антропометријске мере (висина, тежина, БМИ) и осам тестова физичког фитнеса (стајање на једној нози, тапинг руком, тапинг ногом, дубоки претклон, скок у даљ, подизање трупа, издржај у згибу и редуковани Куперов тест (трчање у круг од 6 минута). Дошло се до сазнања да су дечаци, који су користили активан транспорт, имали бољу мишићну издржљивост раменог појаса и кардиореспираторни фитнес, а да су девојчице које су користиле активни транспорт биле боље у флексибилности, експлозивној снази, мишићној издржљивости раменог појаса и кардиореспираторном фитнесу. Резултати линеарне регресије за активни транспорт до школе, БМИ и тестове физичког фитнеса дечака и девојчица потврдили су статистички значајну повезаност између активног транспорта и снаге трбушне мускулатуре и кардиореспираторног фитнеса код дечака, као и везу истог са флексибилности и издржљивости мишића раменог појаса код девојчица. Узимајући у обзир ове позитивне резултате, препоручују се будуће студије са објективнијим мерењима и организованом образовном кампањом за подстицање активног путовања до и од школе у нашој земљи.