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School physical activity policies and active transport to school among pupils in the Czech Republic

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ABSTRACT

Background: Previous studies indicate that the level of physical activity (PA) significantly affects children's health. Active transport to school is PA on a daily basis that may contribute substantially to the overall volume of moderate to vigorous physical activity (MVPA). Aim of our study was to explore whether schools' health promotion and PA-related policies are associated with active commuting in 15-years-old girls and boys actively commuting to and from school and whether gender differences on active commuting exist.

Methods: Students in 9th grades (N = 1522; mean age 15 years; 47.7% boys) from the Czech Republic were enrolled. The active transport of adolescents was self-reported within the Health Behavior in School-aged Children survey in the year 2010. Data about school policies were obtained from the school-level questionnaire which was responded to by school principals. Associations between active transport and school health or PA policies were calculated by logistic regression.

Results: We found that adolescents actively commuted more often (OR/95%-CI: 3.43/1.87–6.27 [girls]; 2.87/1.46–5.642 [boys]) in schools which promote students' walking and cycling to or from school. Adolescents from schools that are planning an implementation of health promotion reported even higher levels of use of active transport (OR/95%-CI: 5.32/2.38–11.92 [girls]; 4.54/2.01–10.24 [boys]). The association was stronger in boys compared to girls.

Conclusion: School policies and programs promoting active transport to and from schools in the Czech Republic contribute to the use of active transport and should be widely implemented. Gender-sensitive approaches should also be taken into account.

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1. Introduction

The level of physical activity (PA) significantly affects the health of young people, improves the cardiovascular metabolic risk, and contributes to an optimal physical and cognitive development (Andersen et al., 2006, 2011a, 2011b). According to the recommendations for health-enhancing PA levels, adolescents should reach at least a minimum of a daily 60 min of moderate vigorous physical activity (MVPA) (World Health Organization, 2010).

Meeting the MVPA recommendation can be achieved by different types of PA in different contexts (e.g. organized leisure time, active play with friends). However, a large proportion of children are physically active for less than 60 min a day (Kalman et al., 2015). Active transport is a promising approach that can significantly help to achieve the recommended level of 60 min of MVPA a day (Carver et al., 2011) and it is easy to integrate into daily life. Active transport is most often defined as walking, cycling, or other human-powered modes of transport used for practical purposes of getting from one place to another in everyday life (Sallis et al., 2004). Active transport (walking or cycling) to or from school may contribute to the overall volume of MVPA by 33% in both boys and girls (Southward et al., 2012). Active transport also improves the development of motor skills in children (Davis and Jones, 1996), as well as cognitive performance in adolescent girls (Martínez-Gómez et al., 2011). Active transport is also associated with better cardiovascular health and lower body weight (Larouche et al., 2014; Xu et al., 2013). Active commuters are also more physically active in non-curricular physical activity than non-active commuters (Faulkner et al., 2009). Social benefits of active transport were also frequently reported in children because it provides a good opportunity to meet and spend time with friends; there is the chance to talk to them or even to make new friends (Kirby and Inchley, 2013).

If differences between countries are taken into account, the prevalence of active transport between countries varies considerably. For example, in the Netherlands almost 50% of adolescents reported active commuting to school on most school days because there is a widespread active commuting on bicycle and this way of transport is also part of the culture in the Netherlands (Bere et al., 2008). A high prevalence of active transport to school is present in Switzerland (78%), because schools are easily accessible from homes by walking or cycling (Bringolf-Isler et al., 2008). Almost two-thirds of adolescents actively commuted to school in Estonia and Sweden (Chillón et al., 2010). However, less than 20% of the 15-year-old adolescents in Australia did so (Booth et al., 2007). Reasons are bigger distances between schools and their homes. Almost 65% of Czech school-aged children aged 11 to 15 commute to school on foot or by bicycle (Pavelka et al., 2012).

Some studies showed that PA in various forms, such as active transport, as well as the lessons of physical education and organized leisure-time sport, has decreased (Hallal et al., 2012; Patel et al., 2010). The reasons for the decreasing level of PA can generally be noticed in higher urbanization-related car-dependent town planning (Katzmarzyk and Mason, 2009). Lower levels of safety (traffic, few pedestrians and bicycle paths) and/or greater environmental pollution also contribute to the decreasing level of PA (De Vet et al., 2011; Durand et al., 2011). Strategies to promote active transport should take the determinants of active transport from different socio-ecological levels (individual and physical environmental factors) into account to support more children in walking or cycling to school. Within the environmental level of influence PA-related school policies might be important to promote active commuting to and from school but this determinant was rarely examined (Panter et al., 2008). Schools have direct contact with students for approximately six hours each day and for up to 13 critical years of their social, psychological, physical, and intellectual development (Miller et al., 2009). However, only a minority of elementary schools have integrated PA as a health policy theme in all grades (Cardon et al., 2012).

Taking the current body of literature into account, we identified programs that encourage active transport worldwide by applying strategies such as a walking school bus, the Safe Routes to School program, or the Gold Medal Schools program (Chillon et al., 2011). Government of the Czech Republic supports the National Strategy Health 2020 which is part of European health policy framework Health 2020 in 2014. This should implement a mechanism to improve health and healthy behavior of the Czech population. Since 1994 the Czech Republic is part of Healthy Cities 21st Century project. Goal of this project is to improve and support quality of life in municipalities. The Czech Republic is one of the 43 members of the European network Schools for Health in Europe since 1993 also. The program helps schools to apply the above-mentioned strategy and to create conditions to promote health. In contrast, evidence for PA-related policies which takes into account such factors as personal, social and environmental is low (Heath et al., 2012). Aim of our study is to explore whether schools' health promotion and PA-related policies (rule and support for active commuting) are associated or related with active commuting in 15-years-old girls and boys actively commuting to and from school and also whether gender differences on active commuting exist.

2. Material and methods

For 30 years, the Health Behavior in School-aged Children (HBSC) study has been a pioneer cross-national study gaining insight into young people's well-being, health behaviors and their social context. This research collaboration with the WHO Regional Office for Europe is conducted every four years in 45 countries and regions across Europe and North America. With adolescents making about one sixth of the world's population, the HBSC-study uses its findings to inform policy and practice to improve the lives of millions of young people. The data used in the present study are based on the 2009/2010 Czech national HBSC survey. HBSC focuses on a wide range of health, education, social, and family measures affecting young people's health and well-being in students aged 11, 13, and 15 years old. For the purpose of the survey HBSC uses an internationally accepted questionnaire. HBSC has been conducted under the auspices of the WHO every four years since 1983 Schools that support or promote children's walking and cycling were assessed by the School Level Questionnaire (SLQ), which was also used and validated in the 2010 HBSC survey. The SLQ asked questions to the teacher and was used in all the schools participating in the data collection related to the children's questionnaire on

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