

University of Groningen

Barriers to active participation of school-aged children

Husárová, Daniela

IMPORTANT NOTE: You are advised to consult the publisher's version (publisher's PDF) if you wish to cite from it. Please check the document version below.

Document Version

Publisher's PDF, also known as Version of record

Publication date:

2017

[Link to publication in University of Groningen/UMCG research database](#)

Citation for published version (APA):

Husárová, D. (2017). *Barriers to active participation of school-aged children*. University of Groningen.

Copyright

Other than for strictly personal use, it is not permitted to download or to forward/distribute the text or part of it without the consent of the author(s) and/or copyright holder(s), unless the work is under an open content license (like Creative Commons).

Take-down policy

If you believe that this document breaches copyright please contact us providing details, and we will remove access to the work immediately and investigate your claim.

Downloaded from the University of Groningen/UMCG research database (Pure): <http://www.rug.nl/research/portal>. For technical reasons the number of authors shown on this cover page is limited to 10 maximum.

about causality. Our findings, therefore, need to be confirmed in longitudinal studies. Moreover, in our study we did not include the use of smartphones, which are a highly portable electronic device that can also be combined with physical activities and outdoor/indoor use. In contrast, typical/classic screen-based activities tend to naturally disrupt physical activities and are limited to indoor use (Iannotti et al., 2009a). Therefore, the effect of smartphone use on physical activity deserves further study.

Conclusions

More and more school-aged children spend excessive time on screen-based activities, and the number of these children increases every year, mainly among older peers. It seems that there are several factors which could have an important impact on screen time. The availability of specific electronic devices in their own bedrooms, for example, or the fact that parents or even family-shared activities might play key role in reducing excessive time spent in front of screens. Based on our results, parents and applying rules about watching TV or playing computer games have only a moderate effect. The home environment and parents may still partly influence the behaviour of their children, including how they spend their leisure time. They could keep in mind that they have an opportunity to change the “unhealthy” lifestyle of their children and encourage them to do alternative activities which could be more beneficial to them.



General discussion

This thesis focuses on active participation among school-aged children and its association with health. Moreover, it contributes to the understanding of perceived barriers to this participation, especially in adolescents with health conditions. This final chapter summarises and discusses the main findings of the study. Then the methodological considerations of the study and implications for practice and future research are addressed.

8.1 Main findings

Research question 1:

Do adolescents with long-term illness, asthma and learning disabilities differ in screen-based activities?

We found that adolescents with long-term illness are highly involved in screen-based activities and mostly do not differ from their peers without long-term illness in this regard. However, adolescents with asthma are more likely to play computer games than their peers without any chronic conditions. We also found that adolescents with a learning disability are at greater risk of excessive Internet use.

Research question 2:

Is the association of screen-based behaviour and selected health complaints moderated by physical activity?

We found that adolescents with more intensive screen-based behaviours have more health complaints and that these associations are not moderated by physical activity. Moreover, excessive working with a computer is related to more health problems than is watching TV.

Research question 3:

Is Internet and computer screen time associated with school difficulties and what is the role of sleep quality and unhealthy eating habits?

Time spent with a computer was found to be associated with school difficulties directly and also indirectly via high consumption of soft and energy drinks and lower sleep quality and quantity. However, the direct association of time spent on a computer with school difficulties was relatively weak in comparison with the indirect association via unhealthy eating habits and sleeping difficulties.

Research question 4:

Do adolescents with diabetes mellitus type-1 perceive barriers to active participation?
The more parental worries adolescents perceive, the more likely they are to report diabetes mellitus-related limitations in social relationships, activities at school and leisure-time activities. Adolescents' personal worries are associated only with limitations in exercising and in social relationships.

Research question 5:

Are family-related factors associated with excessive time spent on screen-based activities by adolescents?

We found that parental rules that restrict the time spent on screen-based activities are associated with a lower probability of excessively spending time on screen-based activities. However, parental rules restricting the content of TV programmes or computer work are not. Moreover, adolescents who watched TV jointly with their parents every day were more likely to report excessive TV watching.

8.2 Discussion of the main findings

The main findings will be discussed within the framework of the general aims, as outlined in Chapter 1. We will focus on active participation and understanding of perceived barriers to active participation of school-aged children, especially children with health conditions. Moreover, we will discuss the role of screen-based behaviour as a possible barrier to active participation in daily activities. Finally, we will also discuss the influence of these barriers on health. The relations between the five research questions are summarised in Figure 8.1.

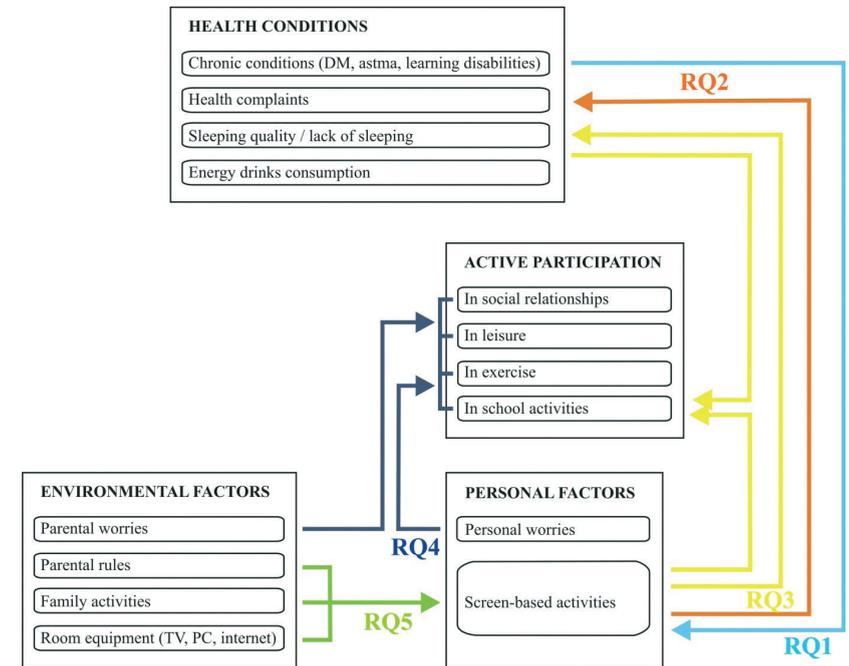


Figure 8.1 Relations between the research questions that have been addressed in this thesis

Health conditions and active participation

This study shows that long-term illness and other health conditions are associated with the life of adolescents and their family, but that these adolescents do not differ from their healthy counterparts regarding screen-based activities. It has to be pointed out that both groups reported a high involvement in screen-based behaviour (Chapter 3). Findings from the Health Behaviour in School-aged Children study showed that 54% of adolescent girls and 59% adolescent boys from Slovakia exceeded recommended 2 hours per day of watching TV in both gender what rank Slovakia among the ten countries with the highest level of excessive watching TV out of the 41 countries on which data were available (Inchley et al. 2016). Overall, this percentage ranged from 30% (Switzerland) to 69% (Israel). Previous findings on physical activity were very similar: Canadian and Finnish school-aged children reporting long-term illness or disability did not differ from their healthy peers in moderate-to-vigorous intensity physical activity. They were also equally physically inactive. Instead of the recommended 7 days per week they reported physical activity on average 3.3 to 4.7 days a week (Rintala et al., 2011). Our results add that the presence of a health condition as such is not necessarily associated with inactivity among adolescents in Central Europe.

Despite the finding of similar levels of screen-based behaviour among healthy adolescents and those who have a health condition, we found that adolescents with asthma reported a higher involvement in computer games playing, and adolescents with learning disabilities reported a greater risk of excessive Internet use (Chapter 3). The explanation may lie in the motivation of these adolescents. Computer gaming is often classified as a mood-management activity that increases one's own feelings of competence (Reinecke, 2009; Reinecke et al., 2012) and that may be popular among asthmatic children as a substitution for physical activity and a coping strategy. In addition to motivation, multiple other factors, like poor motor skills and executive function deficits in children with learning disabilities, may contribute to the low levels of physical activity and subsequently to the high levels of sedentary behaviour (Cook et al., 2015). Some studies focused on screen-based activities among children with a chronic condition have also suggested that excessive time spent in front of screens is associated with negative health outcomes. Increased sedentary behaviour in children with asthma was related, e.g. to obesity (Lang et al., 2004; Kim et al., 2011). Due to a lack of physical activities, asthmatic children may have lower self-esteem and self-efficacy and greater mood difficulties (Seigel et al., 1990; Vila et al., 2000). Children with some types of health conditions thus seem to be at higher risk of excessive screen-based activities, especially when combined with other personal factors.

Moreover, we found that high involvement in screen-based activities, particularly working with a computer, was associated with health complaints among healthy adolescents and that these associations were not moderated by physical activity (Chapter 4). Previous research has shown that excessive time spent watching TV or playing computer games is associated with physical and psychological health complaints (Torsheim et al., 2010; Costigan, et al. 2013). These previous findings may reflect the important role of body postures during these activities. Incorrect sitting postures when spending time with a PC and watching TV may negatively affect different parts of the body, mostly the back or neck. Incorrect postural angles, as an element of sitting, seem to be a risk factor for upper quadrant musculoskeletal pain, as Brink & Louw (2013) found. In addition, other studies show that excessive playing of PC or video games negatively affects sleeping habits (Punamäki et al., 2007) or sleep latency (Higuchi et al., 2005) and is associated with elevated levels of anxiety and depression and even with poorer well-being and life satisfaction (Mentzoni et al., 2011; Chanfreau et al., 2008). Adolescents prefer screen-based activities, regardless of the presence of a health condition, at the expense of participation in, e.g. exercise, school activities or social relationships. This choice may influence their health negatively.

Personal factors related to active participation

We found that screen-based activities are indirectly associated with lower active participation in school through several personal factors in healthy children as well as in those with a health condition. Specifically, time spent with a computer was associated with school difficulties, particularly when combined with higher consumption of soft and energy drinks resulting in worse quality of sleep (Chapters 5). This association may be causal, i.e. the time spent with a computer causing the other problems, as is partially supported by other studies, which show that the use of computers late into the night and subsequently consuming of beverages containing caffeine or sugar are related to the adolescent's ability to stay alert and fully functional. As a consequence, during the next day adolescents try to stay alert by consuming soft drinks, with caffeine, taurine, guarana and other stimulating ingredients as the main components. Such drinks have a stimulation effect (Babu et al., 2008), and they might disrupt sleep as well (Temple, 2009). Moreover, high caffeine consumption during the previous evening is associated with adolescents' daytime sleepiness the next day (Kristjansson et al., 2011), which may simply be due to sleep deprivation, too. Problems with sleeping in terms of short sleep duration, daytime sleepiness or poor sleeping quality are frequent among adolescents (Gradisar et al., 2011), but sleep quality and quantity seem to be crucial for them, especially in the school context (Curcio et al., 2006). Thus, our finding that higher levels of screen-based behaviour on the previous evening together with other factors limit adolescents' participation in school activities the next day may be causal indeed.

However, an opposite causality is also possible. Hume et al. (2011) indicated that symptoms of depression predict a higher level of TV watching, which suggests that screen-based activities and some health complaints do not have to be in a one-way association. Moreover, according to the mood modification hypothesis of media use, media entertainment is often used as a tool for regulating stressful and otherwise unpleasant feelings (Reinecke et al., 2012). Adolescents may thus turn especially to media entertainment to regulate their school problems. This may lead to a vicious circle: the higher time on the Internet may then cause less sleep and further worsen school problems.

For adolescents with a health condition, their worries due to their condition are reported as a direct barrier to active participation in different areas of their lives, especially in physical activities and social relationships (Chapter 6). In general, our findings indicate that children with a health condition have fewer friends and lower levels of social behaviour. This, in turn, leads to their isolation and increases the odds of becoming a victim of bullying in school (Georgiadi et al., 2012; Lindsay & McPherson, 2011). Moreover, some of the personal characteristics, like lack of motivation or poor health, might be consequently associated with

a lower level of leisure-time physical activities and last into adulthood, as well (Cerin et al., 2010). Finally, screen-based activities themselves might act as barrier to active participation because they not only occupy time that could be used for other activities, but they also absorb the capacity for other activities. However, adolescents need to participate in social activities in order to develop their skills and competencies, which have impact on their health. Our findings add that the health condition and the associated worries indeed limit adolescents' participation, probably via a number of routes.

Environmental factors related to active participation

We found that environmental factors, including family-related factors, restrict active participation of adolescents, too. Parents stimulate more screen-based behaviour through not applying restrictive rules about time spent with computer or TV as well as on frequent joint TV watching (Chapter 7). Previous research shows that parents are effective modulators of the amount of time spent with computer or television, especially through restrictions and joint activities (Nikken & Jansz, 2006; Brooks et al., 2016). Mascheroni & Cuman (2014) show that rules regarding time are an important tool to regulate adolescents' media consumption, but due to the diversification of devices and programmes and the variation between age groups it is quite complicated for parents to find the right level of rule-setting. Some parents set a general limit for all screen media, while others try to limit time for each single device. Limits seem to be set rather intuitively and individually without considering the characteristics and affordances of the particular media (Mascheroni & Cuman, 2014). Moreover, watching TV together with parents does not give adolescents another model of how to spend their leisure time; it does not promote adequate structuring of their leisure time and thus seems to lead to more screen time. Thus, the home environment, especially parents, has the opportunity and means to influence the sedentary behaviour of children, including how they spend their leisure time.

Parental worries as perceived by children with a health condition were reported as being a direct barrier to active participation, mainly in social relationships, activities at school and leisure time activities (Chapter 6). According to a review study (Shields, 2012), there is a wide range of barriers to physical activities, including a lack of knowledge and skills, the child's preferences, fear, parental behaviour, negative attitudes to disability, inadequate facilities, lack of transport, lack of programs and staff capacity, and cost. In relation to these findings, the qualitative study of Shields & Synnot (2016) indicates that social barriers to participation, such as the attitudes of parents, staff and peers, are more influential than the other ones. This might be associated with the fact that parents are aware of all the strict rules required for self-management of the chronic condition

and are concerned about the child's adherence, which is often translated into stressed interactions between themselves and their children. Moreover, parents have considerable anxiety about their children's future well-being (Carroll et al., 2006). In addition, parents of children with a health condition report that their over-protectiveness limits their child's independence (Heah et al., 2006), and that this is really associated with decreased participation in active participation (Majnemer et al., 2008). These findings can be interpreted as meaning that the family is an important factor in influencing active participation among adolescents. On one hand, parental worries are viewed as a barrier to participation in various activities. On the other hand, implementing restrictive parental rules provides a time slot for active participation.

Regarding environmental factors, school seems to be an important determinant of active participation of healthy adolescents as well as of adolescents with a health condition.

The physical environmental characteristics of schools (i.e. facilities for physical activity) relate to students' daily physical activity at school (Haug et al., 2008; Haug et al., 2010), but evidence on the connection of school facilities with screen-based activities and activity is lacking. A study in Slovak adolescents (Kopcakova et al., accepted) showed that not the school environment but the degree of urbanisation was associated with lower screen-based activities. In addition, a study in young Swiss children showed that rates screen-based activities were not associated with the nature of the built environment (Bringolf-Isler et al. 2015). Moreover, having a higher accessibility to sport facilities at school was associated with higher rates of sufficient physical activity of adolescents (Kopcakova et al., accepted).

As for active participation of adolescents with a chronic condition, it seems that management and treatment of such condition might affect their participation within the school context. Those adolescents have to face with many restrictions, such as treatment regimens or special educational needs, what might lead to school absence, resulting in social isolation or lower academic achievement (Jackson 2013, Michaud et al. 2005). Therefore, inclusive education is a necessity for providing quality education for these children. Dyssegaard and Larsen (2013) conclude that successful inclusion requires instruction or in-service training of teachers in intervention initiatives that target children with special needs. This training's focus should be access to resource persons (e.g. school nurse, assistant) who can supervise and offer direct support during teaching; and furthermore increasing the knowledge of evidence-based teaching methods and intervention initiatives that target special needs of these children.

According to the European Agency for Special Needs and Inclusive Education, segregation of pupils with special needs has been increasing since 2008 and there are huge differences between European countries.

For instance, Italy has almost 0% segregation, whereas the Czech Republic or Belgium have percentages ranging from 3.9% to 4.7%. In Slovakia, over 6% of pupils with special needs are educated in segregated settings. These percentages rank Slovakia among the countries with the highest level of segregation among European countries. Despite we do not know what kind of special need prevails among children who are segregated, it might indicate considerable barriers of inclusive education in Slovakia which might face any children with special need (European Agency for Development in Special Needs Education, 2008, 2012). The educational approach and appropriate school environment of all students at schools, including students with chronic conditions may contribute to the provision of a good quality education for all students (Muntaner et al., 2014).

Clustering of health-compromising behaviour

Excessive screen-based behaviour, duration of sleeping, consumption of soft and energy drinks might coincide simply because they are parts of one behavioural cluster. The theoretical and empirical evidence supports the existence of organized patterns in adolescent health-compromising behaviour (Petraitis et al., 1995; Jessor, 1991; van Nieuwenhuijzen et al., 2009). For example, duration of sleep clustered in a sample of 12- to 15-year-old Dutch adolescents with substance use related behaviour (e.g. alcohol consumption, smoking, drug use) switched into a norm-breaking cluster (e.g. delinquency, aggression, drug abuse, smoking) in late adolescence (16-18 years), but fit into a health-promoting behaviour cluster in adulthood (19-40 years) comprising nutrition and exercise-related behaviour (van Nieuwenhuijzen et al., 2009).

Applying evolutionary theory, adolescents with educational aspirations are more likely to be involved in health-promoting behaviour than those without these aspirations, because investment in health is highly valuable for them. Educational expectations were positively associated with health-protective behaviours (e.g. daily fruit and vegetable consumption, regular exercise, tooth brushing) and negatively associated with health-compromising behaviour (daily crisps consumption, daily coke/sugary drinks, alcohol consumption, smoking, fighting, having sexual intercourse) in 15-year-old Scottish adolescents (Whitehead et al., 2015). Children with educational aspiration might be more motivated to control time spent with a computer, avoid drinking soft and energy drinks to suppress tiredness and keep sufficient time of sleeping to assure capacity for successful participation in school activities.

8.3 Strengths and limitations

8.3.1 Quality of the sample

A major strength of this thesis is that it is based on two nationally representative samples of adolescents aged 11 to 15 years, with data that are comparable with other international data from the HBSC study. Moreover, the response rates of both samples were high. Thus, selection bias is unlikely and representativeness is high. The sample of adolescents with diabetes mellitus type 1 from outpatient clinics was small. However, we reached a high response rate in a chronically diseased adolescent population which is not so numerous in Slovakia. Moreover, given the specialised nature of diabetes care for adolescents, these clinics are likely to serve most of the patients concerned in their catchment area. Therefore, we do not expect that we had any major selection bias.

8.3.2 Quality of information

Regarding the quality of the information that we obtained, we used validated internationally recognized instruments that have been used in various studies and documented in a variety of international and national reports and publications (Inchley et al., 2016; Currie et al., 2014; Roberts et al., 2009).

However, a limitation might be the fact that we used only self-reported data, which can be inaccurate and biased by social desirability. While self-reported data on psychological complaints are a rather preferred source of information, the reliability of self-reported physical activity or sedentary behaviours has been heavily discussed in the literature (Bobakova et al., 2015; Biddle et al., 2012; Corder et al., 2009; Slootmaker et al., 2009; Baquet et al., 2007; Nilsson et al., 2002). Self-reported measures of activity participation (e.g. physical activity, screen-based activity, organized leisure-time activities) have been reported to have acceptable test-retest reliability, despite the fact that these tools do not fully estimate time spent on an activity accurately, they do rank accurately (Bobakova et al., 2015; Bobakova et al., 2016; Corder et al., 2009).

We further used a question on long-term illness which is very general and might comprise a group of health problems that is very heterogeneous with regard to type as well as severity, and consequently also with regard to their impact on daily activities (e.g. participation in school activities, leisure-time activities). Alternatively, one might start from a patient population of a specific service, as we did for diabetes. This alternative may have the risk, however, that only severe cases are included, except if most patients require that type of service, such as in diabetes. Another limitation might be that parental rules-setting on time and content restrictions for watching TV as well as computer work were measured based

only on the perception of adolescents, and we do not have available data from parents. This may have led to some biased reporting, suggesting a need for confirmation from parents in future research.

8.3.3 Causality

Regarding causality, our studies all had a cross-sectional design. This allows studying and comparing multiple health-related determinants at the same time. However, this design does not allow conclusive statements to be made about the causality of our findings. Thus, our findings need to be confirmed in a study with a longitudinal design.

We assessed the potentially confounding effects of age, gender, physical activity and health condition on the explored associations (e.g. chronic conditions on SBB and active participation, and family related factors on SBB). We found gender and age differences in screen-based behaviour as well as in health complaints, but these did not affect the associations, with small exceptions regarding the relationship between screen-based behaviour and factors regarding the family context.

8.4 Implications

Our study has several implications for public health practice and policy as well as for future research.

8.4.1 Implications for practice and policy

Our study has several important implications for practice and policy. Screen-based activities have become a preferred way of spending leisure time among adolescents in comparison with active participation. This is associated with negative outcomes. Such screen-based activities were also highly frequent among adolescents with long-term illness or a chronic condition, as well as among their healthy peers. Children with a chronic condition in particular very often identified parental or their own worries as limiting their active participation, respectively, replacing them by screen-based activities.

Firstly, our findings showed that adolescents do not meet recommended levels of physical activities, and prefer screen-based activities more, e.g. watching TV, playing computer games or using the Internet. This is connected with negative health outcomes. The excess in screen-based activities at the expense of physical activity associated with undesirable health consequences implies that time spent with a computer especially needs to be restricted in children to prevent health complaints. One way might be to promote a healthier and active lifestyle, for instance by promoting alternative organised leisure-time activities which might be more beneficial for adolescents (Knifsend & Grahan, 2012; Badura et al., 2016). Moreover, screen-based behaviour should not be at the expense

of active participation in other daily activities, like social relationships, organised leisure-time activities, physical activity or school activities. Children's capacity for participation might be directly or indirectly decreased via deteriorating their sleep quality due excessive screen-based behaviour. Therefore, sufficient quality of sleep needs to be promoted by restricting soft and energy drinks and devoting sufficient time for sleep.

Secondly, our results showed that adolescents with a health condition perceived worries in their parents, which affected their own participation in daily activities. The importance of these worries implies that we should pay much more attention to these worries. Our focus should therefore also be on the education of parents in management regimens of chronic diseases. Moreover, appropriate interventions could help parents to acquire effective strategies of coping with the chronic condition of their children, as evidence suggest that the majority of them needs to adapt to management of such condition in the longer term (Lowes & Lyne, 2000).

Considering existing barriers in the physical environment, parents of children with a health condition are often stressed about limitations due to the conditions of their children and view their children as being less able to handle environmental barriers. That might affect the involvement of the child in e.g. physical activity (Riner & Sellhorst, 2013). Thus, environmental barriers besides personal and familial factors are perceived as significant contributors to insufficient engagement in physical activities (Shields et al., 2016). This implies that making supportive and safe physical conditions for active participation of children with health disadvantage is crucial, as well.

Finally, we found that in the home environment parents play an especially important role in encouraging children in their active participation through restriction of time spent with screen-based activities. The findings of EU Kids Online show that most children go online at home, which indicates that their parents are the best positioned to mediate their children's Internet usage. Four forms of parental mediation were found to be most useful: active mediation, restrictive mediation, monitoring and active mediation of the child's safety (Livingstone et al., 2011). Research suggests that the effectiveness of these strategies is complex and that using only one strategy does not have long-term effects. However, using at least one strategy is better than no strategy (Blinka & Sevcikova, 2014). Therefore, interventions should be focused on improving parental mediation skills and their implementation at home.

8.4.2 Implications for future research

Our study also implies several suggestions for future research. One of our study samples comprised a group of adolescents with diabetes mellitus type 1. We reached a high response rate in the catchment area of two hospitals, but the sample size was still quite small due to the low prevalence

of DM-1 in the Slovak adolescent population. Recruiting more outpatient clinics with a larger catchment area regarding adolescents with DM-1 is an option to increase the sample size. Moreover, data from health professionals and parents might provide additional information on active participation and health among adolescents.

As for the quality of information, in our study we used only self-reported data on perceived limitations in participation in different areas of adolescents' lives. However, adding information about health indicators assessed by professionals (e.g. severity of the disease, treatment regime, objective assessment of limitations, compliance) might provide us with some specifics connected to the impact of a particular health condition and its treatment on the daily activities of adolescents.

In this thesis we focused on active participation as well as screen-based activities of adolescents. Using a better measurement of active participation and mapping a wider range of activities that adolescents undertake might provide more details about such behaviour and its associations with health. Furthermore, the available evidence suggests that different factors (e.g. child's preferences, fear, parental behaviour, negative attitudes to disability) might act as barriers to active participation (Shields et al., 2012). At the same time, adolescents and their parents identified several facilitators (e.g. the child's desire to be active, involvement of peers, family support), but further research is needed to examine possible barriers as well as facilitators in particular clinical groups of adolescents.

Finally, the cross-sectional design of our study implies another way for future research. Longitudinal research focused on leisure-time activities of adolescents and its organisation by parents should confirm our results.

8.5 Conclusion

A considerable number of adolescents exceeded the recommended duration of involvement in screen-based activities and at the same time they were not sufficiently physically active, which was associated with negative outcomes (e.g. physical and psychological health complaints). Similarly, adolescents with long-term illness or chronic conditions reported higher levels of screen-based behaviour, but they did not differ from their peers, with exception of adolescents with asthma and learning disabilities. Such children perceived barriers to active participation, including parental and personal worries, which might be associated with frequent engagement in screen-based activities. Moreover, parental restrictions as well as family joint activities were found to be important determinants of the amount of time spent with screen-based activities. Active participation should be promoted, particularly in adolescents with chronic conditions, as they might face more barriers than their healthy counterparts.

Intervention strategies should target their social context, including family and school, as well as the creation or increasing of a physical activity-enhancing environment.

References

- Andreassen, C.S., Torsheim, T., Brunborg, G.S., & Pallesen, S. (2012). Development of a Facebook addiction scale. *Psychological Reports, 110*(2), 501-517.
- Aman, J., Skinner, T.C., De Beaufort, C.E., Swift, P.G.F., Aanstoot, H-J., & Cameron, F. (2009). Associations between physical activity, sedentary behavior, and glycemic control in a large cohort of adolescents with type 1 diabetes: the Hvidoere Study Group on Childhood Diabetes. *Pediatric Diabetes, 10*, 234-239.
- American Academy of Pediatrics, Committee on Public Education. (2001). Children, Adolescents, and television. *Pediatrics, 107*(2), 423-426.
- Atkin, A.J., Corder, K., Ekelund, U., Wijndaele, K., Griffin, S.J., & van Sluijs, E.M.F. (2013). Determinants of change in children's sedentary time. *PLoS ONE, 8*(6), e67627.
- Augustyn, M. B., & McGloin, J. M. (2013). The risk of informal socializing with peers: Considering gender differences across predatory delinquency and substance use. *Justice Quarterly, 30*(1), 117-143.
- Babu, K.M., Church, R.J., & Lewander, W. (2008). Energy drinks: The new eye-opener for adolescents. *Clinical Pediatric Emergency Medicine, 9*, 35-42.
- Bae, D., & Wickrama, K. A. S. (2015). Family socioeconomic status and academic achievement among Korean adolescents: Linking mechanisms of family processes and adolescents' time use. *Journal of Early Adolescence, 35*(7), 1014-1038.
- Badura, P., Geckova, A. M., Sigmundova, D., van Dijk, J.P., & Reijneveld, S. A. (2015). When children play, they feel better: organized activity participation and health in adolescents. *BMC Public Health, 15*, 1090. doi:10.1186/s12889-015-2427-5
- Badura, P., Sigmund, E., Madarasova Geckova, A., Sigmundova, D., Sirucek, J., van Dijk, J.P., & Reijneveld, S. A. (2016). Is Participation in Organized Leisure-Time Activities Associated with School Performance in Adolescence? *PLoS ONE, 11*(4), e0153276.
- Bandura, A. *Social learning theory*. New York: General Learning Press; 1971.
- Barnes, G. M., Hoffman, J. H., Welte, J. W., Farrell, M. P., & Dintcheff, B. A. (2007). Adolescents' time use: Effects on substance use, delinquency and sexual activity. *Journal of Youth and Adolescence, 36*, 697-710.
- Barradas, D.T., Fulton, J.E., Blanck, H.M., & Huhman, M. (2007). Parental influences on youth television viewing. *Journal of Pediatrics, 151*, 369-73.

- Barros, L. (2003) Chronic disease: Conceptualization, evaluation and intervention. In: *Psicologia Pediátrica: Perspectiva Desenvolvimentista*, 2nd Edition, Climepsi Editores, Manuais Universitários 13, Lisboa, 135-172.
- Baquet, G., Stratton, G., van Praagh, E., & Berthoin, S. (2007). Improving physical activity assessment in prepubertal children with high-frequency accelerometry monitoring: A methodological issue. *Preventive Medicine*, 44, 143–147.
- Berntsson, L.T., & Ringsberg, K.C. (2014). Swedish parents' activities together with their children and children's health: A study of children aged 2–17 years. *Scandinavian Journal of Public Health*, 42(Suppl 15), 41–51.
- Biddle, S.J.H., Gorely, T., Marshall, S.J., & Cameron, N. (2009). The prevalence of sedentary behavior and physical activity in leisure time: A study of Scottish adolescents using acological momentary assessment. *Preventive Medicine*, 48, 151-155.
- Biddle, S.J.H., Pearson, N., Ross, G.M., & Braithwaite, R. (2010). Tracking of sedentary behaviour of young people: A systematic review. *Preventive Medicine*, 51, 345-351.
- Biddle, S.J.H., Brehm, W., Verheijden, M., & Hopman-Rock, M. (2012). Population physical activity behaviour change: A review for the European College of Sport Science. *European Journal of Sport Sciences*, 12, 4, DOI:10.1080/17461391.2011.635700.
- Bird, J.M., & Markle, R.S. (2012). Subjective well-being in school environments: promoting positive youth development through evidence-based assessment and intervention. *American Journal of Orthopsychiatry*, 82, 61–66.
- Bleakley, A., Jordan, A.B., & Hennessy, M. (2013). The relationship between parents' and children's television viewing. *Pediatrics*, 132(2), 364-371.
- Blinka, L. Excessive use and internet addiction. In: Sevcikova et al. *Děti a dospívající online. Vybraná rizika používání internetu*. [Children and adolescents online. The selected risks of Internet use]. 2014. Praha: Grada.
- Blinka, L., & Sevcikova, A. Rodičovská mediace používání internetu u dětí. In: Sevcikova et al. *Děti a dospívající online. Vybraná rizika používání internetu*. [Children and adolescents online. The selected risks of Internet use]. 2014. Praha: Grada.
- Blinka, L., Skarupova, K., Sevcikova, A., Wölfling, K., Müller, K., & Dreier, M. (2015). Excessive internet use in European adolescents: What determines differences in severity? *International Journal of Public Health*, 60, 249-256.
- Blinka, L., & Smahel, D. Addiction to online role-playing games. In *Internet Addiction: A Handbook and Guide to Evaluation and Treatment*. Edited by Young KS, de Abreu CN. Hoboken: Wiley-Blackwell; 2010:73–90.
- Bobakova, D., Hamrik, Z., Badura, P., Sigmundova, D., Nalecz, H., & Kalman, M. (2015). Test-retest reliability of selected physical activity and sedentary behaviour HBSC items in Czech Republic, Slovakia and Poland. *International Journal of Public Health*, 60(1), 59-67.
- Bond, L., Butler, H., Thomas, L., Carlin, J., Glover, S., Bowes, G., & Patton, G. (2007). Social and school connectedness in early secondary school as predictors of late teenage substance use, mental health, and academic outcomes. *Journal of Adolescent Health*, 40(4), 357.
- Borzekowski, D.L., & Robinson, T.N. (2005). The remote, the mouse, and the no. 2 pencil: the household media environment and academic achievement among third grade students. *The Archives of Pediatrics and Adolescent Medicine*, 159(7), 607-613.
- Bosakova, L., Kolarcik, P., Bobakova, D., Sulcova, M., van Dijk, J.P., Reijneveld, S.A., & Madarasova Geckova, A. (2016). Test–retest reliability of the scale of participation in organized activities among adolescents in the Czech Republic and Slovakia. *International Journal of Public Health*, 61, 329–336.
- Bowers, E. P., Geldhof, G. J., Johnson, S. K., Lerner, J. V., & Lerner, R. M. (2014). Special issue introduction: thriving across the adolescent years: A view of the issues. *Journal of Youth and Adolescence*, 43, 859-868.
- Bradley, G. L. (2010). Skate parks as a context for adolescent development. *Journal of Adolescent Research*, 25(2), 288-323.
- Brindova, D., Dankulincova Veselska, Z., Sigmundova, D., & Madarasova Geckova, A. (2015a). Age and gender differences in prevalence of screen based behavior, physical activity, and health complaints among Slovak school-aged children. *Central European Journal of Public Health*, 23(Suppl), 30-36.
- Brindova, D., Dankulincova Veselska, Z., Klein, D., Hamrik, Z., Sigmundova, D., van Dijk, J.P. & Reijneveld, S.A. (2015b). Is the association between screen-based behaviour and health complaints among adolescents moderated by physical activity? *International Journal of Public Health*, 60(2), 139-145.
- Brink, Y., & Louw, Q.A. (2013). A systematic review of the relationship between sitting and upper quadrant musculoskeletal pain in children and adolescents. *Manual Therapy*, 18, 281-288.
- Brooks, F.M., Chester, K.L., Smeeton, N.C., & Spencer, N.H. (2016). Video gaming in adolescence: factors associated with leisure time use. *Journal of Youth Studies*, 19(1), 36-54.
- Brooks, F., Magnusson, J., Klemmera, E., Spencer, N., & Morgan, A. HBSC England National Report: Health behaviour in school-aged children (HBSC): World Health Organization collaborative cross national study.2015

- Bucksch, J., Sigmundova, D., Hamrik, Z., Troped, P.J., Melkevik, O., Ahluwalia, N., Borraccino, A., Tynjälä, J., Kalman, M., Inchley, J. (2016). International Trends in Adolescent Screen-Time Behaviors From 2002 to 2010. *The Journal of Adolescent Health*, 58(4), 417–425.
- Bull, R., & Scerif, G. (2001). Executive functioning as a predictor of children's mathematics ability: Inhibition, switching, and working memory. *Developmental Neuropsychology*, 19(3), 273–293.
- Calamaro, Ch.J., Mason, T.B.A., & Ratcliffe, S.J. (2009). Adolescents living the 24/7 lifestyle: effects of caffeine and technology on sleep duration and daytime functioning. *Pediatrics*, 123(6), 1005–1010.
- Caldwell, L.L., & Faulk, M. Adolescent leisure from a developmental and prevention perspective. In: Freire T. *Positive Leisure Science. From Subjective Experience to Social Contexts*. 2013. Springer Netherlands.
- Carlson, S.A., Fulton, J.E., Lee, S.M., Foley, J.T., Heitzler, C., & Huhman, M. (2010). Influence of limit-setting and participation in physical activity on youth screen time. *Pediatrics*, 126, 89–96.
- Carroll, A.E., & Marrero, D.G. (2006). How do parents perceive their adolescent's diabetes: a qualitative study. *Diabetic Medicine*, 23, 1222–1224.
- Carter, B., Grey, J., McWilliams, E., Clair, Z., Blake, K., & Byatt, R. (2014). 'Just kids playing sport (in a chair)': experiences of children, families and stakeholders attending a wheelchair sports club. *Disability & Society*, 29(6), 938–52.
- Cerin, E., Leslie, E., Sugiyama, T., & Owen, N. (2010). Perceived barriers to leisure-time physical activity in adults: an ecological perspective. *Journal of physical activity & health*, 7(4), 451–459.
- Cillero, H.I., & Jago, R. (2010). Systematic review of correlates of screen-viewing among young children. *Preventive Medicine*, 51(1), 3–10.
- Clarke, W.L. (2011). Behavioral challenges in the management of childhood diabetes. *Journal of Diabetes Science Technology*, 5(2), 225–228.
- Colaros, L.G., & Eccles, J.S. (2003). Differential effects of support providers on adolescents' mental health. *Social Work Research*, 27, 19–30.
- Conn, K.M., Hernandez, T., Puthoor, P., Fagnano, M., & Halterman, J.S. (2009). Screen Time Use Among Urban Children with Asthma. *Academic Pediatrics*, 9(1), 60–63.
- Cook, B.G., Li, D., & Heinrich, K.M. (2015). Obesity, physical activity, and sedentary behaviour of youth with learning disabilities and ADHD. *Journal of Learning Disabilities*, 48(6), 563–576.
- Corder, K., van Sluijs, E.M., Wright, A., Whincup, P., Wareham, N.J., & Ekelund, U. (2009). Is it possible to assess free living physical activity and energy expenditure in young people by self-report? *American Journal of Clinical Nutrition*, 89(3), 862–70.
- Costigan, S.A., Barnett, L., Plotnikoff, R.C., & Lubans, D.R. (2013). The health indicators associated with screen-based sedentary behavior among adolescent girls: A systematic review. *Journal of Adolescent Health*, 52, 382–392.
- Coyne, S. M., Padilla-Walker, L. M., Stockdale, L., & Day, R. D. (2011). "Game on ... Girls: Associations between Co-playing Video Games and Adolescent Behavioral and Family Outcomes." *Journal of Adolescent Health*, 49(2), 160–165.
- Crouter, A.C., Head, M.R., McHale, S., & Tucker, C.J. (2004). Family time and the psychosocial adjustment of adolescent siblings and their parents. *Journal of Marriage and Family*, 66, 147–162.
- Currie C, Zanotti C, Morgan A, Currie D, de Looze M, Roberts CH et al., eds. *Social determinants of health and well-being among young people. Health Behaviour in School-aged Children (HBSC) study: international report from the 2009/10 survey*. Copenhagen, WHO Regional Office for Europe, 2012 (Health Policy for Children and Adolescents, No. 6).
- Currie C, Griebler R, Inchley J, Theunissen A, Molcho M, Samdal O, Dür W & (eds.) (2010). *Health Behaviour in School-aged Children (HBSC) Study Protocol: Background, Methodology and Mandatory Items for the 2009/10 Survey*. Edinburgh: CAHRU & Vienna: LBIHPR.
- Curcio, G., Ferrara, M., & De Gennaro, L. (2006). Sleep loss, learning capacity and academic performance. *Sleep Medicine Reviews*, 10, 323–337.
- Currie C, Inchley J, Molcho M, Lenzi M, Veselska Z, Wild F (eds). *Health Behaviour in School-aged Children (HBSC) study protocol: Background, methodology and mandatory items for the 2013/14 survey*. St. Andrews: CAHRU; 2014.
- Darling, N. & Steinberg, L. (1993). Parenting style as context: An integrative model. *Psychological Bulletin*, 113(3), 487–496.
- Del Boca, F.K., & Noll, J.A. (2000). Truth or consequences: the validity of self-report data in health services research on addictions. *Addiction*, 95, 347–360.
- Delamater, A.M., de Wit, M., McDarby, V., Malik, J., & Acerini, C.L. (2014). Psychological care of children and adolescents with type 1 diabetes. *Pediatric Diabetes*, 15(suppl. 20), 232–244.
- Denny, S., de Silva, M., Fleming, T., Clark, T., Merry, S., Ameratunga, S., Milfont, T., Farrant, B., & Fortune, S.A. (2014). The prevalence of chronic health conditions impacting on daily functioning and the association with emotional well-being among a national sample of high school students. *Journal of Adolescent Health*, 54, 410–415.
- Dewald, J.F., Meijer, A.M., Oort, F.J., Kerkhof, G.A., & Bögels, S.M. (2010). The influence of sleep quality, sleep duration and sleepiness on school performance in children and adolescents: a meta-analytic review. *Sleep Medicine Reviews*, 14(3), 179–189.
- D'hooge, R., Hellinckx, T., Van Laethem, C., Stegen, S., De Schepper, J.,

- Van Aken, S., Dewolf, D., & Calders, P. (2011). Influence of combined aerobic and resistance training on metabolic control, cardiovascular fitness and quality of life in adolescents with type 1 diabetes: a randomized controlled trial. *Clinical Rehabilitation*, 25, 349-359.
- Dimech, A.S., & Seiler, R. (2011). Extra-curricular sport participation: A potential buffer against social anxiety symptoms in primary school children. *Psychology Sport Exercise*, 12, 347-354.
- Dimitriou, D., Knight, F.L.C., & Milton, P. (2015). The role of environmental factors on sleep patterns and school performance in adolescents. *Frontiers in Psychology*, 6, 1717. doi: 10.3389/fpsyg.2015.01717.
- Drotar, D., Ittenbach, R., Rohan, J.M., Gupta, R., Shroff, J.P., & Delamater, A. (2013). Diabetes management and glycemic control in youth with type 1 diabetes: test of a predictive model. *Journal of Behavioral Medicine*, 36, 234-245.
- Dunton, G.F., Liao, Y., Almanza, E., Jerrett, M., Spruijt-Metz, D., Chou, C.P., & Pentz, M.A. (2012). Joint Physical Activity and Sedentary Behavior in Parent-Child Pairs. *Medicine & Science in sports & exercise*, 44, 1473-1480.
- Dworak, M., Schierl, T., Bruns, T., & Strüder, H.K. (2007). Impact of singular excessive computer game and television exposure on sleep patterns and memory performance of school-aged children. *Pediatrics*, 120(5), 978-985.
- Dworkin, J. B., Larson, R., & Hansen, D. (2003). Adolescents' accounts of growth experiences in youth activities. *Journal of Youth and Adolescence*, 32, 17-26.
- Dyssegaard, C. B. & Larsen, M. S. (2013). Evidence on Inclusion. Danish Clearinghouse for Educational Research. Copenhagen: Department of Education, Aarhus University.
- European Agency for Development in Special Needs Education, 2012. Special Needs Education Country Data 2012, Odense, Denmark: European Agency for Development in Special Needs Education.
- European Agency for Development in Special Needs Education, 2008. Special Needs Education Country Data 2008, Odense, Denmark: European Agency for Development in Special Needs Education.
- Farb, A. F., & Matjasko, J. L. (2012). Recent advances in research on school-based extracurricular activities and adolescent development. *Developmental Review*, 32(1), 1-48.
- Ferrar, K., Chang, C., Ming, L., & Olds, T.S. (2013). Adolescent time use clusters: A systematic review. *Journal of Adolescent Health*, 52, 259-270.
- Finne, E., Bucksch, J., Lampert, T., & Kolip, P. (2013). Physical activity and screen-based media use: cross-sectional associations with health-related quality of life and the role of body satisfaction in a representative sample of German adolescents. *Health Psychology & Behavioural Medicine*, 1(1), 15-30.
- Gaßmann, J., Vath, N., van Gessel, H., & Kröner-Herwig, B. (2009). Risk factors for headache in children. *Deutsches Arzteblatt International*, 106(31-32), 509-16.
- Gage, J. C., Overpeck, M. D., Nansel, T. R., & Kogan, M. D. (2005). Peer activity in the evenings and participation in aggressive and problem behaviors. *Journal of Adolescent Health*, 37, 517(7), 517-14.
- Gebremariam, M.K., Bergh, I.H., Andersen, L.F., Ommundsen, Y., Totland, T.H., Bjelland, M., Grydeland, M., & Lien, N. (2013). Are screen-based sedentary behaviors longitudinally associated with dietary behaviors and leisure-time physical activity in the transition into adolescence? *International Journal of Behavioral Nutrition and Physical Activity*, 10(9), 1-8.
- Gennuso, J., Epstein, L.H., Paluch, R.A., & Cerny, F. (1998). The relationship between asthma and obesity in urban minority children and adolescents. *Archives of Pediatrics and Adolescent Medicine*, 152(12), 1197-1200.
- Gentile, D. (2009). Pathological video-game use among youth ages 8 to 18: A National Study. *Psychological Sciences*, 20(5), 594-602.
- Georgiadi, M., Kalyva, E., Kourkoutas, E., & Tsakiris V. (2012). Young Children's Attitudes Toward Peers with Intellectual Disabilities: Effect of the Type of School. *Journal of Applied Research in Intellectual Disabilities*, 25, 531-541.
- Gradisar, M., Gardner, G., & Dohnt, H. (2011). Recent worldwide sleep patterns and problems during adolescence: A review and meta-analysis of age, region, and sleep. *Sleep Medicine*, 12, 110-118.
- Hamer, M., Stamatakis, E., & Mishra, G. (2009). Psychological Distress, Television Viewing, and Physical Activity in Children Aged 4 to 12 Years. *Pediatrics*, 123, 1263-1268.
- Harris, M.B., & Williams, R. (1985). Video games and school performance. *Education*, 105(3).
- Haynie, D. L., Osgood, D. W. (2005). Reconsidering peers and delinquency: How do peers matter? *Social Forces*, 84(2), 1109-1130.
- Heah, T., Case, T., McGuire, B., & Law, M. (2007). Successful participation: The lived experience among children with disabilities. *Canadian Journal of Occupational Therapy*, 74(1), 38-47.
- Heaney, C.A., & Israel, B.A. (2008). "Social networks and social support". In Glanz, K.; Rimer, B.K.; Viswanath, K. *Health Behavior and Health Education: Theory, Research, and Practice* (4th ed.). San Francisco, CA: Jossey-Bass.
- Helsper, E.J., Kalmus, V., Hasebrink, U., Sagvari, B., & De Haan, J. (2013). *Country Classification: Opportunities, Risks, Harm and Parental Mediation*. LSE, London: EU Kids Online.
- Higuchi, S., Motohasmi, Y., Liu, Y., & Maeda, A. (2005). Effects of playing

- a computer game using a bright display on presleep physiological variables, sleep latency, slow wave sleep and REM sleep. *Journal of Sleep Research*, 14, 267–273.
- Hoeben, E. M., & Weerman, F. M. (2016). Why is involvement in unstructured socializing related to adolescents delinquency? *Criminology*, 54(2), 242-281.
- Holubcikova, J., Kolarcik, P., Madarasova Geckova, A., Reijneveld, S.A., & van Dijk, J.P. (2015). The mediating effect of daily nervousness and irritability on the relationship between soft drink consumption and aggressive behaviour among adolescents. *International Journal of Public Health*, 60(6), 699-706.
- Hume, C., Timperio, A., Veitch, J., Salmon, J., Crawford, D., & Ball, K. (2011). Physical activity, sedentary behavior, and depressive symptoms among adolescents. *Journal of Physical Activity and Health*, 8(2), 152-6.
- Chanfreau, J., Lloyd, Ch., Byron, Ch., Roberts, C., Craig, R., De Feo, D. & McMannus, S. (2008) Predicting well-being. London: NatCen Social Research.
- Chaput, J.P., Leduc, G., Boyer, Ch., Bélanger, P., LeBlanc, A.G., Borghese, M.M. & Tremblay, M.S. (2014). Electronic screens in children's bedrooms and adiposity, physical activity and sleep: Do the number and type of electronic devices matter? *Canadian Journal of Public Health*, 105(4), 273-279.
- Iannotti, R.J., Janssen, I., Haug, E., Kololo, H., Annaheim, B., Borraccino, A. & Hbsc Physical Activity Focus Group. (2009a). Interrelationships of adolescent physical activity, screen-based sedentary behaviour, and social and psychological health. *International Journal of Public Health*, 54(Suppl 2), 191-198.
- Iannotti, R.J., Kogan, M.D., Janssen, I., & Boyce, W.F. (2009b). Patterns of Adolescent Physical Activity, Screen-Based Media Use and Positive and Negative Health Indicators in the U.S. and Canada. *Journal of Adolescent Health*, 44(5), 493–499.
- Inchley J., Currie D., Young T., Samdal O., Torsheim T., Augustson L. et al.(Eds.): Growing up unequal: gender and socioeconomic differences in young people's health and well-being. Health Behaviour in School-aged Children (HBSC) study: international report from the 2013/2014 survey. Copenhagen: WHO Regional Office for Europe; 2016. Health policy for children and adolescents. No. 7
- International Diabetes Federation. *IDF Diabetes Atlas*, 7th edn. Brussels, Belgium:International Diabetes Federation, 2015. <http://www.diabetesatlas.org>
- Ivarsson, M., Anderson, M., Åkerstedt, T., & Lindblad, F. (2013). The effect of violent and nonviolent video games on heart rate variability, sleep, and emotions in adolescents with different violent gaming habits. *Psychosomatic Medicine*, 75(4), 390-396.
- Jackson, M. (2012). The special educational needs of adolescents living with chronic illness: a literature review. *International Journal of Inclusive Education*, 17(6), 543-554.
- Jago, R., Davison, K.K., Thompson, J.L., Page, A.S., Brockman, R., & Fox, K.R. (2011). Parental sedentary restriction, maternal parenting style, and television viewing among 10-to 11-years-olds. *Pediatrics*, 128(3), 572-578.
- Janssen, I., Boyce, W.F., & Pickett, W. (2012). Screen time and physical violence in 10 to 16-year-old Canadian youth. *International Journal of Public Health*, 57, 325-331.
- Jessor, R. (1991). Risk behaviour in adolescence: A psychosocial framework for understanding and action. *Journal of Adolescent Health*, 12, 597-605.
- Jiménez-Iglesias, A., Moreno, C., Rivera, F., & García-Moya, I. (2013). The Role of the Family in Promoting Responsible Substance Use in Adolescence. *Journal of Child and Family Studies*, 22(5), 585–602.
- Jiménez-Iglesias, A., Moreno, C., Ramos, P., & Rivera F. (2015). What family dimensions are important for health-related quality of life in adolescence? *Journal of Youth Studies*, 18(1), 53–67.
- Kalmus, V., Runnel, P., & Siibak, A. Opportunities and benefits online. In Livingstone, S. & Haddon, L. (eds) *Kids Online*. Bristol: Policy Press;2009.
- Kaspersky lab, Smahel, D. (2016). Digital parenting: Fathers are crucial for digital security in parenting. DOI: 10.13140/RG.2.2.30359.98720
- Kim, J.W., So, W.Y., & Kim, Y.S. (2011). Association between asthma and physical activity in Korean adolescents: the 3rd Korea Youth Risk Behavior Web-based Survey (KYRBWS-III). *European Journal of Public Health*, 22(6), 864 - 868.
- Kiesner, J., Poulin, F., & Dishion, T. J. (2010). Adolescent Substance Use With Friends Moderating and Mediating Effects of Parental Monitoring and Peer Activity Contexts. *Merrill-Palmer Quarterly-Journal of Developmental Psychology*, 56(4), 529-556.
- King, G.A., Law, M., King, S., Hanna, S., Kertoy, M., & Rosenbaum, P. (2007). Measuring children's participation in recreation and leisure activities: construct validation of the CAPE and PAC. *Child Care Health & Development*, 33(1), 28–39.
- Knifsend, C. A., & Graham, S. (2012). Too much of a good thing? How breadth of extracurricular participation relates to school-related affect and academic outcomes during adolescence. *Journal of Youth and Adolescence*, 41(3), 379-389.
- Ko, CH., Yen, J.Y., Yen, C.F., Chen, C.S., & Chen, C. (2012). The association between Internet addiction and psychiatric disorder: a review of the literature. *European Psychiatry*, 27(1), 1-8.

- Kopcakova, J., Dankulinova Veselska, Z., Madarasova Geckova, A., Klein, D., van Dijk, J.P., Reijneveld, S.A. (2017). Are school factors and urbanization supportive for being physically active and engaging in less screen-based activities? *International Journal of Public Health*, accepted.
- Kraut, R., Patterson, M., Lundmark, V., Kiesler, S., Mukophadhyay, T., & Scherlis, W. (1998). Internet paradox: A social technology that reduces social involvement and psychological well-being? *American Psychology*, 53(9), 1017.
- Kristjánsson, A.L., Sigfusdóttir, I.D., Allegrante, J.P., & James, J.E. (2011). Adolescent caffeine consumption, daytime sleepiness, and anger. *Journal of Caffeine Research*, 1(1), 75-82.
- Kristjánsson, A.L., Sigfusdóttir, I.D., Mann, M.J., & James, J.E. (2014). Caffeinated sugar-sweetened beverages and common physical complaints in Icelandic children aged 10–12 years. *Preventive Medicine*, 58, 40–44.
- Kröner-Herwig, B., Gassman, J., van Gessel, H., & Vath, N. (2011). Multiple Pains in Children and Adolescents: A Risk Factor Analysis in a Longitudinal Study. *Journal of Pediatric Psychology*, 36(4), 420–432.
- Kuntsche, E.N., Simons-Morton, B., Ter Bogt, T., Sánchez-Queija, I., Muñoz-Tinoco, V., & Gaspar de Matos, M. (2009). Electronic media communication with friends from 2002 to 2006 and links to FtF contacts in adolescence: An HBSC study in 31 European and North American countries and regions. *International Journal of Public Health*, 54(2), 243-250.
- Kuss, D.J., & Griffiths, M.D. (2012). Internet and gaming addiction: a systematic literature review of neuroimaging studies. *Brain sciences*, 2(3), 347-374.
- Lang, Ch., Brand, S., Feldmeth, A.K., Holsboer-Trachsler, E., Pühse, U., & Gerber, M. (2013). Increased self-reported and objectively assessed physical activity predict sleep quality among adolescents. *Physiology & Behavior*, 120, 46–53.
- Lang, D.M., Butz, A., Duggan, A.K., & Serwint, J.R. (2004). Physical activity in urban school-aged children with asthma. *Pediatrics*, 113(4), 341-346.
- Larson, R.W. (2000). Toward a psychology of positive youth development. *American Psychologist*, 55(1), 170-183.
- Larson, R. W., & Verma, S. (1999). How children and adolescents spend time across the world: Work, play, and developmental opportunities. *Psychological Bulletin*, 125(6), 701-736.
- Leatherdale, S.T., Laxer, R.E., & Faulkner, G. Reliability and validity of the physical activity and sedentary behaviour measures in the COMPASS study. COMPASS Technical Report Series. 2014;2(1). Waterloo, Ontario: University of Waterloo. Available at: www.compass.uwaterloo.ca
- Leclair, E., de Kerdanet, M., Riddell, M., & Heyman, E. (2013). Type 1 diabetes and physical activity in children and adolescents. *Journal of Diabetes & Metabolism*, S10: 004, doi:10.4172/2155-6156.S10-004.
- Lee, K. T. H., & Vandell, D. L. (2015). Out-of-school time and adolescent substance use. *Journal of Adolescent Health*, 57, 523-529.
- Lenzi, M., Vieno, A., Perkins, D.D., Santinello, M., Pastor, M., & Mazaridis, S. (2012). Perceived neighborhood social resources as determinants of prosocial behavior in early adolescence. *American Journal of Community Psychology*, 50(1-2), 37-49.
- Lerner, R. M. (2005). Promoting positive youth development: Theoretical and empirical bases. White paper prepared for Workshop on the Science of Adolescent Health and Development, National Research Council, Washington.
- Liese, A.D., Ma, X., Maahs, D.M., & Trilk, J.L. (2013). Physical activity, sedentary behaviors, physical fitness, and their relation to health outcomes in youth with type 1 and type 2 diabetes: A review of the epidemiologic literature. *Journal of Sport & Health Sciences*, 2, 21-38.
- Lindsay, S., Kingsnorth, S., & Hamdani, Y. (2011). Barriers and facilitators of chronic illness self-management among adolescents: a review and future directions. *Journal of Nursing and Healthcare of Chronic Illness*, 3, 186–208.
- Lindsay, S., & Mcpherson, A.C. (2011). Strategies for improving disability awareness and social inclusion of children and young people with cerebral palsy. *Child: care, health and development*, 38(6), 809-816.
- Lissner, L., Lanfer, A., Gwozdz, W., Olafsdóttir, S., Eiben, G., Moreno, L.A., et al. (2012). Television habits in relation to overweight, diet and taste preferences in European children: the IDEFICS study. *European Journal of Epidemiology*, 27, 705–715.
- Livingstone, S., Haddon, L., Görzig, A., & Ólafsson, K. Risks and safety on the internet: The perspective of European children. Full Findings. LSE, London: EU Kids Online; 2011.
- Livingstone, S., & Helsper, E. (2010). Balancing opportunities and risks in teenagers' use of the internet: the role of online skills and internet self-efficacy. *New Media & Society*, 12(2), 309-329.
- Loke, A.Y., & Mak, Y. (2013). Family process and peer influences on substance use by adolescents. *International Journal of Environmental Research and Public Health*, 10, 3868-3885.
- Lowes, L., & Lyne, P. (2000). Chronic sorrow in parents of children with newly diagnosed diabetes: a review of the literature and discussion of the implications for nursing practice. *Journal of Advanced Nursing*, 32(1), 41-48.
- Mahoney, J.L., Harris, A.L., & Eccles, J.S. (2006). Organized activity participation, positive youth development, and the over-scheduling hypothesis. *Social Policy Reports*, 20(4), 3–30.

- Mahoney, J.L., & Stattin, H. (2000). Leisure activities and adolescents antisocial behaviour: The role of structure and social context. *Journal of Adolescence*, 23, 113-127.
- Majnemer, A., Shevell, M., Law, M., Birnbaum, R., Chilingaryan, G., Rosenbaum, P., & Poulin, Ch. (2008). Participation and enjoyment of leisure activities in schoolaged children with cerebral palsy. *Developmental Medicine & Child Neurology*, 50, 751-758.
- Malecki, C.K., & Demaray, M.K. (2003). What type of support do they need? Investigating student adjustment as related to emotional, appraisal, information, and instrumental support. *School Psychology Quarterly*, 18(3), 231-52.
- Martinez-Gomez, D., Ruiz, J.R., Gomez-Martinez, S., Chillon, P., Rey-Lopez, J.P., Diaz, L.E., Castillo, R., Veiga, O.L. & Marcos, A. (2011). Active Commuting to School and Cognitive Performance in Adolescents: The AVENA Study. *Archives of Pediatrics & Adolescent Medicine*, 165(4), 300-5.
- Mascheroni, G., & Cuman, A. *Net Children Go Mobile: Final report*. Milano: Educatt.
- Mathers, M., Canterford, L., Olds, T., Hesketh, K., Ridley, K., & Wake, M. (2009). Electronic media use and adolescent health and well-being: Cross-sectional community study. *Academic pediatrics*, 9, 307-314.
- Mazur, J., Sentenac, M., Brooks, F., Małkowska-Szkućnik, A., Gajewski, J., & Gavin, A. (2013). Burden of chronic health conditions in adolescence measured by school surveys. *Developmental Period Medicine*, 17(2), 157-164.
- Mayes, S.D., Calhoun, S.L., & Crowell, E.W. (2000). Learning disabilities and ADHD overlapping spectrum disorders. *Journal of Learning Disabilities*, 33(5), 417-424.
- Melkevik, O., Torsheim, T., Iannotti, R.J., & Wold, B. (2010). Is spending time in screen-based sedentary behaviors associated with less physical activity: a cross national investigation. *International Journal of Behavioral Nutrition & Physical activity*, 7, 46.
- Mentzoni, R.A., Brunborg, G.S., Molde, H., Myrseth, H., Skouverøe, K.J.M., Hetland, J. et al. (2011). Problematic video game use: Estimated prevalence and associations with mental and physical health. *Cyberpsychology, Behavior & Social Networking*, 14(10), 591-596.
- Michaliszyn, S.F., & Faulkner, M.S. (2010). Physical activity and sedentary behavior in adolescents with type 1 diabetes. *Research in Nursing & Health*, 33, 441-449.
- Michaud, P.A., Suris, J.C., & Viner, R. *The adolescent with a chronic condition: Epidemiology, developmental issues and health care provision*. Geneva: Department of Child and Adolescent Health and Development; 2007.
- Milde-Busch, A., von Kries, R., Thomas, S., Heinrich, S., Straube, A., & Radon, K. (2010). The association between use of electronic media and prevalence of headache in adolescents: results from a population-based cross-sectional study. *BMC Neurology*, 10, 12.
- Missotten, L.Ch., Luyckx, K., & Seiffge-Krenke, I. (2013). Family climate of adolescents with and without type 1 diabetes: Longitudinal associations with psychosocial adaptation. *Journal of Child & Family Studies*, 22, 344-354.
- Muntaner, J.J., Forteza, D., Salom M. (2014). The inclusion of students with chronic diseases in regular schools. *Procedia – Social and Behavioral Sciences*, 132, 74-79.
- Nelson, I. A., & Gastic, B. (2009). Street ball, swim team and the sour cream machine: A cluster analysis of out of school time participation portfolios. *Journal of Youth and Adolescence*, 38, 1172-1186.
- Nilsson, A., Ekelund, U., Yngve, A., & Sjöström, M. (2002). Assessing physical activity among children with accelerometers using different time sampling intervals and placements. *Pediatric Exercise Science*, 14, 87-96.
- Nikken, P., & Jansz, J. (2006). Parental Mediation of Children's Video-game Playing: A Comparison of the Reports by Parents and Children. *Learning, Media and Technology*, 31 (2), 181-202.
- Nuutinen, T.M., Roos, E., Ray, C., Villberg, J., Välimaa, R., Holstein, B. et al. (2014). Computer use, sleep duration and health symptoms: a cross-sectional study of 15 year-olds in three countries. *International Journal of Public Health*, 59(4), 619-628.
- Offer, S. (2013). Family time activities and adolescents' emotional well-being. *Journal of Marriage & Family*, 75, 26 – 41.
- Olafsdottir, S., Eiben, G., Prell, H., Hense, S., Lissner, L., Marild, S., Reisch, L., & Berg, CH. (2014). Young children's screen habits are associated with consumption of sweetened beverages independently of parental norms. *International Journal of Public Health*, 59, 67-75.
- Ottova-Jordan, W., Smith, O.R.F., Augustine, L., Gobina, I., Rathmann, K., Torsheim, T. et al. (2015). Trends in health complaints from 2002 to 2010 in 34 countries and their association with health behaviours and social context factors at individual and macro-level. *European Journal of Public Health*, 25(2), 83-9.
- Pearce, N., Ait-Khaled, N., Beasley, R., Mallol, J., Keil, U., Mitchell, E., Robertson, C. & the ISAAC Phase Three Study Group (2007). Worldwide trends in the prevalence of asthma symptoms: Phase III of the International Study of Asthma and Allergies in Childhood (ISAAC). *Thorax*, 62, 758-766.
- Penedo, F.J., & Dahn, J.R. (2005). Exercise and well-being: A review of mental and physical health benefits associated with physical activity. *Current Opinion in Psychiatry*, 18, 189-193.
- Petratis, J., Flay, B.R., & Miller, T.Q. (1995). Reviewing theories of

- adolescent substance use: organizing pieces in the puzzle. *Psychological Bulletin*, 117,67-86.
- Pulver, A., Davison, C., & Pickett, W. (2015). Time-use patterns and the recreational use of prescription medications among rural and small town youth. *The Journal of Rural Health*, 31, 217-228.
- Punamäki, R.L., Wallenius, M., Nygård, C.H., Saarni, L., & Rimpelä, A. (2007). Use of information and communication technology (ICT) and perceived health in adolescence: The role of sleeping habits and waking-time tiredness. *Journal of Adolescence*, 30, 569-585.
- Rahl, R.L. (2010). *Physical activity and health guidelines: Recommendations for various ages, fitness levels, and conditions from 57 authoritative sources*. United States: Human Kinetics.
- Reinecke, L. (2009). Games and recovery: The use of video and computer games to recuperate from stress and strain. *Journal of Media Psychology*, 21(3), 126-142.
- Reinecke, L., Tamborini, R., Grizzard, M., Lewis, R., Eden, A., & Bowman, D.N. (2012). Characterizing mood management as need satisfaction: The effects of intrinsic needs on selective exposure and mood repair. *Journal of Communication*, 62(3), 437-453.
- Riddoch, C.H.J., Bo Andersen, L., Wedderkopp, N., Harro, M., Klasson-Heggebø, L., Sardinha, L.B., Cooper, A.R., & Ekelund, U. (2004). Physical activity levels and patterns of 9-and 15-year-old European children. *Medicine & Science in Sports & Exercise*, 36, 86-92.
- Richards, G., & Smith, A. (2015). Caffeine consumption and self-assessed stress, anxiety, and depression in secondary school children. *Journal of Psychopharmacology*, 29(12), 1236-1247.
- Riner, W.F., & Sellhorst, S.H. (2013). Physical activity and exercise in children with chronic health conditions. *Journal of Sports and Health Science*, 2, 12-20.
- Rintala, P., Välimaa, R., Tynjälä, J., Boyce, W., King, M., Villberg, J., & Kannas, L. (2011). Physical activity of children with and without long-term illness or disability. *Journal of Physical Activity & Health*. 8(8), 1066-73.
- Roberts, C., Freeman, J., Samdal, O., Schnor, C., Looze, M., Gabhainn, S.N. et al. (2009). The Health Behaviour in School-aged Children (HBSC) study: methodological developments and current tensions. *International Journal of Public Health*, 54(Suppl 2), 140-150.
- Rothon, C., Edwards, P., Bhui, K., Viner, R.M., Taylor, S., & Stansfeld, S.A. (2010). Physical activity and depressive symptoms in adolescents: A prospective study. *BMC Medicine*, 8, 32.
- Ryan, R.M., Rigby, C.S., & Przybylski, A. (2006). The motivational pull of video games: A self-determination theory approach. *Motivation & Emotion*, 30(4), 344-360.
- Santos, T., de Matos, M.G., Simões, M.C., Fonseca, H., & do Céu Machado, M. (2013). Individual factors related to chronic condition in Portuguese adolescents: Highlights from the HBSC/WHO study. *Health*, 5, 25-34.
- Seigel, W.M., Golden, N.H., Gough, J.W., Lashley, M.S., & Sacker, I.M. (1990). Depression, self-esteem, and life events in adolescents with chronic diseases. *Journal of Adolescent Health Care*, 11(6), 501-504.
- Shannon, C.S. (2006). Parents' messages about the role of extracurricular and unstructured leisure activities: adolescents' perceptions. *Journal of Leisure Research*, 38(3), 398-420.
- Sharif, I., & Sargent, J.D. (2006). Association between television, movie, and video game exposure and school performance. *Pediatrics*, 118(4), 1061-1070.
- Sharp, E. H., Tucker, C. J., Baril, M. E., van Gundy, K. T., & Rebellon, C. J. (2015). Breadth of participation in organized and unstructured activities over time and rural adolescents' functioning. *Journal of Youth and Adolescence*, 44(1), 62-76.
- Shields, N., Synnot, A.J., & Barr, M. (2012). Perceived barriers and facilitators to physical activity for children with disability: a systematic review. *British Journal of Sports Medicine*, 46, 989-997.
- Shields, N., & Synnot, A. (2016). Perceived barriers and facilitators to participation in physical activity for children with disability: a qualitative study. *BMC Pediatrics*, 16(9), 1-10.
- Shields, N., & Synnot, A.J. (2014). An exploratory study of how sports and recreation industry personnel perceive the barriers and facilitators of physical activity in children with disability. *Disability & Rehabilitation*, 36(24), 2080-4.
- Sibley, B.A., & Etnier, J.L. (2003). The relationship between physical activity and cognition in children: a meta-analysis. *Pediatric Exercise Science*, 15(3), 243-256.
- Sijtsma, A., Sauer, P.J.J., & Corpeleijn, E. (2015). Parental correlations of physical activity and body mass index in young children- the GECKO Drenthe cohort. *International Journal of Behavioral Nutrition and Physical Activity*, 12(132), 1-7.
- Skarupova, K., Olafsson, K., & Blinka, L. (2015). Excessive Internet Use and its association with negative experiences: Quasi-validation of a short scale in 25 European countries. *Computers in Human Behavior*, 53, 118-123.
- Skinner, T.C., Hoey, H., McGee, H.M., & Skovlund, S.E. (2006). A short form of the quality of life for youth questionnaire: exploratory and confirmatory analysis in a sample of 2,077 young people with type 1 diabetes mellitus. *Diabetologia*, 49, 621-628.
- Skoric, M.M., Teo, L.L.C., & Neo, R.L. (2009). Children and video games: addiction, engagement, and scholastic achievement. *Cyberpsychology Behavior*, 12(5), 567-572.

- Slater, M.D. (2007). Reinforcing spirals: The mutual influence of media selectivity and media effects and their impact on individual behaviour and social identity. *Communication Theory*, 17(3), 281-303.
- Slootmaker, S.M., Schuit, A.J., Chinapaw, M.J.M., Seidell, J.C., & van Mechelen, W. (2009). Disagreement in physical activity assessed by accelerometer and self-report in subgroups of age, gender, education and weight status. *International Journal of Behavioral Nutrition & Physical Activity*, 6(17), 1-10.
- Smith, L., Louw, Q., Crous, L., & Grimmer-Somers, K. (2008). Prevalence of neck pain and headaches: impact of computer use and other associative factors. *Cephalalgia*, 29, 250-257.
- Sook-Jung, L., & Young-Gil, C. (2007). Children's Internet Use in a Family Context: Influence on Family Relationships and Parental Mediation. *Cyberpsychology Behavior*, 10(5), 640-644.
- Sörbom, D. Karl Jöreskog and LISREL: A Personal Story. In: Cudeck, R., Du Toit, S., Sörbom D. *Structural Equation Modeling: Present and Future*. Scientific Software International; 2001; pp. 3-10.
- Spada, M.M. (2014). An overview of problematic Internet use. *Addictive Behavior*, 39, 3-6.
- Spilková, J. (2015). Leisure time preferences and health-risk behaviour of teenagers in the post-communist Central European countries. *Children's Geographies*, 13(4), 435-450.
- Springer, A.E., Kelder, S.H., Barroso, C.S., Drenner, K.L., Shegog, R., Ranjit, N. et al. (2010). Parental influences on television watching among children living on the Texas-Mexico border. *Preventive Medicine*, 51, 112-117.
- Strong, W.B., Malina, R.M., Bumke, C.J., Daniels, S.R., Dishman, R.K., Gutin, B., et al. (2005). Evidence based physical activity for school-age children. *Journal of Pediatrics*, 146, 732-737.
- Suris, J.C., Michaud, P.A., & Viner, R. (2004). The adolescent with a chronic condition. Part I: developmental issues. *Archives of Disease in Childhood*, 89, 938-942.
- Svensson, R., & Oberwittler, D. (2010). It's not the time they spend, it's what they do: The interaction between delinquent friends and unstructured routine activity on delinquency. *Journal of Criminal Justice*, 38, 1006-1014.
- Sweeting, H., West, P., & Richards, M. (1998). Teenage family life, lifestyles and life changes: Associations with family structure, conflict with parents and joint family activities. *International Journal of Law, Policy & Family*, 12, 15-46.
- Škařupová, K., Ólafsson, K., & Blinka, L. (2016). The effect of smartphone use on trends in European adolescents' excessive Internet use. *Behavior & Information Technology*, 35(1), 68-74.
- Taylor, R.M., Gibson, F. & Franck, L.S. (2008). A concept analysis of health-related quality of life in young people with chronic illness. *Journal of Clinical Nursing*, 17, 1823-1833.
- Temple, J.L. (2009). Caffeine use in children: What we know, what we have left to learn, and why we should worry. *Neuroscience & Biobehavioral Reviews*, 33, 793-806.
- Torsheim, T., Eriksson, L., Schnohr, Ch.W., Hansen, F., Bjarnason, T., & Välimaa, R. (2010). Screen-based activities and physical complaints among adolescents from the Nordic countries. *BMC Public Health*, 10, 324.
- Trainor, S., Delfabbro, P., Anderson, S., & Winefield, A. (2010). Leisure activities and adolescent psychological well-being. *Journal of Adolescence*, 33(1), 173-186.
- Tremblay, M.S., LeBlanc, A.G., Kho, M.E., Saunders, T.J., Larouche, R., Colley, R.C. et al. (2011). Systematic review of sedentary behaviour and health indicators in school-aged children and youth. *International Journal of Behavioral Nutrition & Physical Activity*, 8, 98.
- Tsiouli, E., Alexopoulos, E.C., Stefanaki, C.H., Darviri, C.H., & Chrousos, G.P. (2013). Effects of diabetes-related family stress on glycemic control in young patients with type 1 diabetes: Systematic review. *Canadian Family Physician*, 59, 143-9.
- Tully, C., Aronow, L., Mackey, E., & Streisand, R. (2016). Physical activity in youth with type 1 diabetes: A review. *Current Diabetes Reports*, 16(85), 1-8.
- Tyrlík, M., & Sýkorová, Z. Leisure time. In: *Adolescent psychosocial development in Brno: An ELSPAC study 2005 – 2011*. Edited by Ježek S, Lacinová L, Macek P. Brno: Masaryk University; 2011:43-56.
- Yang, F., Helgason, A.R., Sigfusdottir, I.D., & Kristjánsson, A.L. (2012). Electronic screen use and mental health-being of 10-12-year-old children. *European Journal of Public Health*, 23, 492-498.
- Yen, J.Y., Ko, C.H., Yen, C.F., Wu, H.Y., & Yang, M.J. (2007). The comorbid psychiatric symptoms of Internet addiction: attention deficit and hyperactivity disorder (ADHD), depression, social phobia, and hostility. *Journal of Adolescent Health*, 41(1), 93-98.
- Valkenburg, P.M., & Peter, J. (2013). The differential susceptibility to media effects model. *Journal of Communication*, 63, 221-243.
- van den Eijnden, R.J., Meerkerk, G.J., Vermulst, A.A., Spijkerman, R., & Engels, R. (2008). Online communication, compulsive Internet use, and psychosocial well-being among adolescents: a longitudinal study. *Developmental Psychology*, 44(3), 655.
- van Nieuwenhuijzen, M., Junger, M., Velderman, M.K., Wiefferink, K.H., Paulussen, T.W.G.M., Hox, J., & Reijneveld, S.A. (2009). Clustering of health-compromising behavior and delinquency in adolescents and adults in the Dutch population. *Preventive Medicine*, 48, 572-578.
- van Zutphen, M., Bell, A.C., Kremer, P.J., & Swinburn, B.A. (2007).

- Association between the family environment and television viewing in Australian children. *Journal of Paediatrics & Child Health*, 43, 458-463.
- Veitch, J., Arundell, L., Hume, C., & Ball, K. (2013). Children's perceptions of the factors helping them to be 'resilient' to sedentary lifestyles. *Health Education Research*, 28(4), 692-703.
- Velde, S.J., van der Horst, K., Oenema, A., Timperio, A., Crawford, D., & Brug, J. (2011). Parental and home influences on adolescents' TV viewing: A mediation analysis. *International Journal of Pediatric Obesity*, 6, 364-372.
- Vila, G., Nollet-Clemencon, C., De Blic, J., Mouren-Simeoni, M.C., & Scheinmann, P. (2000). Prevalence of DSM IV anxiety and affective disorders in a pediatric population of asthmatic children and adolescents. *Journal of Affective Disorder*, 58(3), 223-231.
- Vokacova, J., Badura, P., Pavelka, J., Kalman, M., & Hanus, R. (2016). Brief report: Changes in parent-adolescent joint activities between 2002 and 2014 in the Czech Republic, Health Behaviour in School-aged Children (HBSC) study. *Journal of Adolescence*, 51, 1-5.
- Walker, R.G., Obeid, J., Nguyen, T., Ploeger, H., Proudfoot, N.A., Bos, C. et al. (2015). Sedentary time and screen-based sedentary behaviors of children with a chronic disease. *Pediatric Exercise Science*, 27, 219-225.
- Wang, M.T., & Dishion, T.J. (2012). The trajectories of adolescents' perceptions of school climate, deviant peer affiliation, and behavioural problems during the middle school years. *Journal of Research on Adolescence*, 22, 40-53.
- Weerman, F. M., Bernasco, W., Bruinsma, G. J. N., & Pauwels, L. J. R. (2015). When is spending time with peers related to delinquency? The importance of where, what, and with whom. *Crime & Delinquency*, 61(10), 1386-1413.
- Weiss, M.D., Baer, S., Allan, B.A., Saran, K., & Schibuk, H. (2011). The screens culture: impact on ADHD. *ADHD Attention Deficit & Hyperactivity Disorders*, 3, 327-334.
- Wethington, H., Pan, L., & Sherry, B. (2013). The association of screen time, television in the bedroom, and obesity among school-aged youth: 2007 National Survey of Children's Health. *Journal of School Health*, 83(8), 573-581.
- Whitehead, R., Currie, D., Inchley, J., & Currie, C. (2015). Educational expectations and adolescent health behaviour: an evolutionary approach. *International Journal of Public Health*. 60(5), 599-608.
- Wight, V. R., Price, J., Bianchi, S. M., & Hunt, B. R. (2009). The time use of teenagers. *Social Science Research*, 38, 792-809.
- Wolfe, J., Kar, K., Perry, A., Reynolds, C., Gradisar, M., & Short, M. A. (2014). Single night video-game use leads to sleep loss and attention deficits in older adolescents. *Journal of Adolescence*, 37(7), 1003-1009.
- Wolfson, A.R., & Carskadon, M.A. (2003). Understanding adolescents' sleep patterns and school performance: a critical appraisal. *Sleep Medicine Reviews*, 7(6), 491-506.
- World Health Organisation. Global recommendations on physical activity for health. Switzerland; 2010.
- World Health Organization. How to use the ICF: A practical manual for using the International Classification of Functioning, Disability and Health (ICF). Exposure draft for comment. October 2013. Geneva: WHO.
- World Health Organization. International classification of functioning, disability and health : children & youth version : ICF-CY. 2007. Geneva: WHO.
- WHO: International Classification of Functioning, Disability and Health. Geneva, Switzerland: WHO, 2001
- The first comparison of outcomes in SR within EU kids online survey. [<http://www.medialnavychova.sk/prve-vysledky-projektu-eu-kids-online/>]