

GENDER DIFFERENCES IN SUBJECTIVE WELL-BEING OF HEALTHY HIGH- SCHOOL STUDENTS

Dagmar Nemček¹, Petra Kurková², Julie Wittmannová³

¹*Comenius University in Bratislava, Faculty of Physical Education and Sports, Bratislava, Slovakia*

²*Palacky University Olomouc, Faculty of Education, Olomouc, Czech Republic*

³*Palacky University Olomouc, Faculty of Physical Culture, Olomouc, Czech Republic*

Summary: The objective of this study was to analyse the level of subjective well-being (SWB) through five SWB dimensions and compare it between healthy male and healthy female high school students preferring sedentary leisure time activities. The research sample comprised of 90 male high school students (mean age 16.72 ± 1.33) and 126 female high school students (mean age 16.71 ± 1.36) who preferred sedentary types of leisure time activities with self-reported good health status. A standardized The Bern Subjective Well-Being Questionnaire for Adolescents (BFW) was used as a primary research method. We found significantly higher level of positive SWB dimension ($U = 4281$, $p = 0.002$, $r = 172$) and significantly lower level of negative SWB dimension ($U = 2835$, $p = 0.000$, $r = 424$) in the group of male high school students with self-reported good health status in comparison to female high school students. Parents should be involved in the selection of their children's leisure time activities, so it should not have only the sedentary character but also sport leisure time activities, mainly among young girls.

Keywords: positive and negative dimensions, male and female high school students, self-reported health status, sedentary types of leisure activities.

Introduction

As the name suggests, Subjective Well-being (SWB) is a subjective evaluation by an individual of her/his life in overall (Diener 2000). In a broad sense, SWB measures provide “a sense of how (people’s) lives are going, through the interaction between their circumstances, activities and psychological resources” (New Economics Foundation 2018, p. 18). Following the World Health Organization’s proposal in 1948 that, “Health is not merely the absence of

disease but a state of wellbeing,” well-being has become an increasing focus of research, as well as conceptual debate (La Placa & Knight 2014). It is now generally agreed that well-being is multidimensional and subjectively assessed (Organization for Economic Cooperation 2013). General well-being is regularly described in terms of happiness, with happiness often loosely defined as SWB (Layard 2006). The construct of SWB was developed in response to the weak empirical links found between people’s objective circumstances (e.g., material wealth) and their reported levels of happiness (Layard 2006).

The “bottom-up” theory of SWB argues that global SWB is based on a person’s evaluating of well-being across key life domains (e.g., leisure, work, health) (Headey et al. 1991). Leisure can fulfil needs and desires that are thwarted in other areas of one’s life, such as work, which can protect one’s overall well-being (Kuykendall et al. 2018). Leisure may provide certain unique well-being benefits that cannot be obtained through other domains in life, as leisure is typically characterized by autonomy or greater freedom of choice than other life domains (Graef et al. 1983). The influence of basic psychological needs on well-being has been documented across various life domains, such as work (Van den Broeck et al. 2010), education (Mouratidis et al. 2011), sport (Stenling & Tafvelin 2014) and across diverse cultural samples (e.g., Chen et al. 2015). Although leisure can be solitary or social, social leisure activities strongly contribute to SWB (Parsons, Mackenzie & Brymer 2019). For instance, leisure with friends has been shown to increase immediate well-being, while leisure time with a partner benefits global well-being (Larson et al. 1986). Social leisure activities can build social relationships, promote positive emotions, and improve quality of life (Ryan & Deci 2000). As we mentioned above, participation in the social leisure activity like sport, increase a personal well-being by higher level of the positive aspects as well as lower level of negative aspects of the SWB (Pačesová, 2019).

There is a very close connection between sedentary leisure activities and health problems already in young age category people. It has been suggested that young people spend too much time in sedentary activities, which further increases their risk of future health problems (Van Sluijs et al., 2008). In a cross-sectional sample of American 11–15-year-olds, where sedentary behaviour was self-reported but more widely defined (including screen time and activities such as listening to the radio and talking on the phone), age was also positively associated with overall sedentary behaviour (Norman et al., 2005). Moreover, sedentary behaviour-specific psychological factors (such as self-efficacy, and perceived pros and cons), family environmental factors and hills in the neighbourhood were associated with high levels of sedentary time (> 240 min.) among girls, whereas only self-efficacy and barriers to change

were associated among boys (Van Sluijs et al. 2010). For our investigation we selected male and female high school students with self-reported sedentary leisure time activities preferences and self-reported good health status. The objective of this study was to analyse the level of subjective well-being in healthy high school students preferring sedentary leisure activities. Furthermore; this study should deepen the knowledge of the level of subjective well-being dimensions and compare it between male and female high school students.

Methods

Participants and data collection

The research sample comprised of 90 healthy male high school students (mean age 16.72 ± 1.33 years of age) and 126 healthy female high school students (mean age 16.71 ± 1.36 years of age) who preferred sedentary types of leisure time activities. The most preferred sedentary leisure activities in male high school students were TV watching and playing on the electronic devices and the most preferred sedentary leisure activities in female high school students were meeting/chatting with friends – socializing, listen the music and doing nothing. The data was collected from February to June 2019 at six different high schools and vocational schools in Slovak cities Nitra, Liptovský Hrádok, Ružomberok, Bratislava, Humenné and Spišská Nová Ves. The questionnaire was distributed in paper form and respondents were instructed on how to complete it and informed of survey questions related to health status and preferred leisure time activities. For this study, we selected only students who had prefer sedentary leisure time activities and reported good health status. The Ethics Committee of the Faculty of Physical Education and Sports, Comenius University in Bratislava (ref. no. 10/2019), had approved this research. Each participant voluntarily provided written informed consent before the participation in the research.

The Bern Subjective Well-Being Questionnaire for Adolescents (BFW)

A standardized The Bern Subjective Well-Being Questionnaire for Adolescents (BFW; Grob et al., 1991) was used as a primary research method. The BFW questionnaire consists of 28 items scale that measure both positive and negative feelings about yourself, covering five main SWB dimensions: (1) “Overall life satisfaction” supported by 6 items, (2) “Current psychological problems” supported by 7 items, (3) “Current physical difficulties” supported by 8 items, (4) “Self-esteem” supported by 3 items and (5) “Depressive mood” supported by 4 items. Items of four dimensions (1, 2, 4, and 5) were answered using a 6-point Likert scale format ranging from strongly disagree (point 1) to strongly agree (point 6) and dimension 3

Current physical difficulties were answered using a 4-point Likert scale format ranging from not at all (point 1) to very often (point 4). Two SWB dimensions (1 and 4) evaluate a positive attitude of SWB and higher scores indicate higher SWB and three dimensions (2, 3 and 5) evaluate a negative attitude of SWB and higher scores indicate a lower SWB. In this study, a Slovak version of the BFW was used (Džuka 1995).

Data analysis

The program IBM SPSS Statistics version 23.0 was used for data processing. The data were described using absolute and relative frequencies, including the mean (\bar{x}) and standard deviation (\pm SD). The Kolmogorov-Smirnov test was used to evaluate data normality and non-parametric Mann Whitney *U*-test was used to assess differences between two independent groups of male and female high school students. The significance level was set at $\alpha \leq 0.05$ (*) and $\alpha \leq 0.01$ (**). The rate of dependence (effect size) between the two samples of features was conveyed by means of the coefficient *r* ($r > 0.90$ - very large effect size, $r = 0.70 - 0.90$ - large effect size, $r = 0.50 - 0.70$ - medium effect size, $r = 0.30 - 0.50$ - small effect size, $r < 0.29$ - very small effect size) proposed by Pett (1997).

Results

SWB dimensions analyses show significantly higher level of Overall life satisfaction in the group of healthy male high school students (4.378 ± 1.055 points of the mean score) compare the group of healthy female high school students (4.165 ± 0.942 points of the mean score) ($U = 4\,799$, $p = 0.050$, $r = 0.106$) (Table 1). Analysing different items of the SWB dimension Overall life satisfaction we found significantly higher satisfaction with one of six items, concretely of Life plans organisation in the group of male high school students (4.133 ± 1.317 points of the mean score) comparing female high school students (3.778 ± 1.123 points of the mean score) ($U = 4754$, $p = 0.037$, $r = 0.144$).

Results further revealed significantly higher occurrence of Current psychological problems in the group of female students (2.416 ± 0.783 points of the mean score) compared to male students (1.965 ± 0.785 points of the mean score) ($U = 3713$, $p = 0.000$, $r = 0.276$) In this SWB dimension female high school students presented significantly higher level of problems with 6 of 7 items, concretely in the last few weeks they were significantly more worry with other people ($U = 4651$, $p = 0.022$, $r = 0.157$), relationships ($U = 4520$, $p = 0.009$, $r = 0.154$), study ($U = 4559$, $p = 0.008$, $r = 0.140$), health ($U = 4389$, $p = 0.003$, $r = 0.157$),

partner ($U = 4561, p = 0.004, r = 0.139$) and finances ($U = 4148, p = 0.000, r = 0.215$) than their male peers. In the SWB dimension of Current physical difficulties results further declare significantly higher occurrence of current physical difficulties again in the group of female students (2.169 ± 0.615 points of the mean score) compare male students (1.640 ± 0.450 points of the mean score) ($U = 2785, p = 0.000, r = 0.441$). Surprisingly healthy female high school students reported in the last few weeks significantly higher occurrence of stomach-ache ($U = 4126, p = 0.000, r = 0.259$), palpitation ($U = 4271, p = 0.001, r = 0.248$), lack of appetite ($U = 4319, p = 0.001, r = 0.203$), dizziness ($U = 4376, p = 0.000, r = 0.285$), sleep ($U = 4206, p = 0.001, r = 0.224$), fatigue ($U = 3163, p = 0.000, r = 0.394$) and headache ($U = 3198, p = 0.000, r = 0.397$) than healthy male high school students.

Significantly higher level of Self-esteem was presented by healthy male high school students (4.796 ± 1.227 points of the mean score) comparing their female peers (4.209 ± 1.175 points of the mean score) ($U = 3852, p = 0.000, r = 0.237$). The score of all three evaluated items of the SWB dimension of Self-esteem was significantly higher in the group of healthy male students in comparison female students. Concretely male students were able to do things as well as most people ($U = 4601, p = 0.016, r = 0.147$), they felt as valuable as the others ($U = 4233, p = 0.001, r = 0.205$) and they had a positive attitude towards themselves ($U = 3903, p = 0.000, r = 0.245$). The SWB dimension Depressive mood was significantly higher in the group of female students (2.917 ± 1.115 points of the mean score) comparing to their healthy male peers (2.325 ± 0.932 points of the mean score) ($U = 3821, p = 0.000, r = 0.277$) supported by three of four items. Female healthy students achieved significantly higher level of laziness ($U = 3821, p = 0.000, r = 0.314$), total disinterest ($U = 3821, p = 0.000, r = 0.241$) and life sense disinterest ($U = 3821, p = 0.000, r = 0.158$) comparing male high school students.

Table 1
SWB dimension comparison between healthy male and female high school students

SWB dimensions	Male students (n = 90)	Female students (n = 126)	<i>U</i>	<i>Z</i>	<i>p</i>	abs (<i>r</i>)
	$\bar{x} \pm SD$ (point score)					
Overall life Satisfaction	4.378 ± 1.055	4.165 ± 0.942	4799	-1.926	0.050*	0.106
Current psychological problems	1.965 ± 0.785	2.416 ± 0.783	3713	-4.329	0.000**	0.276
Current physical difficulties	1.640 ± 0.450	2.169 ± 0.615	2785	-6.386	0.000**	0.441
Self-esteem	4.796 ± 1.227	4.209 ± 1.175	3852	-4.034	0.000**	0.237
Depressive mood	2.325 ± 0.932	2.917 ± 1.115	3821	-4.095	0.000**	0.277

Note. U and Z = Mann-Whitney U-test statistics; p = statistical significance (p-values * ≤ 0.05 , ** ≤ 0.01); abs(r) = absolute value of r = effect size

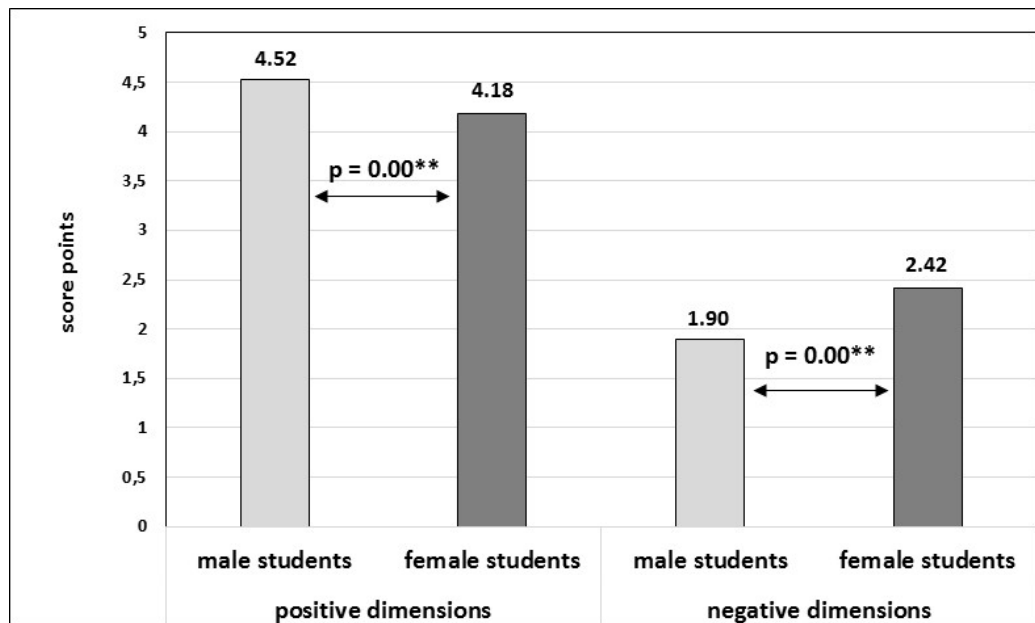


Figure 1

A comparison of positive and negative SWB dimensions between male and female high school students

Summarising the achieved results of the present study we found significant differences in all five SWB dimensions between male and female healthy high school students. Concretely male high school students presented significantly higher level in two positive SWB dimension (4.517 ± 1.017 vs 4.180 ± 0.909 points of the mean score; $U = 4281$, $p = 0.002$, $r = 172$) and significantly lower level in three negative SWB dimension (1.904 ± 0.511 vs 2.417 ± 0.583 points of the mean score; $U = 2835$, $p = 0.000$, $r = 424$) in comparison to female high school students (Figure 1). Observed data generally presented significantly higher SWB in the group of healthy male high school students comparing to female high school students.

Discussion

Sedentary behaviour (or sitting) is ubiquitous in the developed world with young people now spending the majority of their leisure time in sedentary pursuits such as screen-viewing (eg, television/DVD viewing, computer use and internet use), sedentary socialising and inactive forms of transport (Biddle, Petrolini & Pearson 2014). Sedentary behaviour comprises sitting or lying, during waking hours, with low-energy expenditure (Sedentary Behaviour Research Network 2012). There is a growing public health concern over the effects that sedentary lifestyles are having on the physical and psychological health of children and adolescents. The objective of this study was to analyse the level of subjective well-being among healthy high school students preferring sedentary leisure activities. Furthermore; this study should deepen

the knowledge of the level of subjective well-being dimensions and compare it between male and female high school students. Observed data show significantly higher level of the Overall life satisfaction as well as the Self-esteem in the group of male healthy high school students comparing to their female peer. On the other side the results further revealed significantly lower level of the Current psychological problems, the Current physical difficulties and the Depressive mood in the group of healthy male high school students comparing to their female peers. Male high school students with self-reported good health presented significantly higher level of positive SWB dimension and significantly lower level of negative SWB dimension in comparison to their female high school students.

Nemček (2017a) investigated the SWB through the level of self-esteem in the group of people who are deaf and hard of hearing preferring sedentary leisure activities ($n = 90$). This minority group of population achieved in the Rosenberg's Self-esteem Scale the highest score in two items. They felt, that they are a people of worth, at least on an equal level as the others as they are able to do things as well as most other people. Individuals who are deaf and hard of hearing may be disadvantaged in terms of health and participation in beneficial physical activities compared to the majority of society due to their information deficit and limited auditory perception (Kurková, 2016). Nemček (2017b) investigated SWB in the group of population with physical disabilities preferring sedentary leisure activities ($n = 98$). This minority group of population declared positive SWB by the highest Rosenberg's Self-esteem Scale score in different items compared to deaf and hard of hearing population. Sedentary people with physical disabilities took a positive attitude toward themselves and they felt that they have a number of good qualities. Healthy population preferring sedentary leisure activities revealed higher level of SWB declared by higher level of life satisfaction comparing sedentary population with chronic diseases (Bendíková & Nemček 2016) and sedentary population with disabilities (Nemček 2016a).

As we already mentioned, surprisingly female high school students who reported a good health status, presented significantly higher occurrence of the physical as well as psychological problems and difficulties in comparison to healthy male high school students. In the last few weeks they were significantly more worried with other people, relationships, study, health, partner and finances than male students. And also, in the last few weeks they registered significantly higher occurrence of stomach-ache, palpitation, lack of appetite, dizziness, bad sleep, fatigue, headache than their healthy male peers.

Population with physical disabilities who prefer sedentary leisure activities revealed in the study of Nemček (2016b) the positive SWB by the highest satisfaction in their life with

home environment, family relations, food, and population who are deaf and hard of hearing declared the positive SWB by the highest satisfaction with family relations, children and love. On the other hand, the negative SWB was presented by both minority groups with sedentary behaviour with dissatisfaction with political situation and justice. People with physical disabilities showed in addition the negative SWB by dissatisfaction in their life with sport participation and deaf people dissatisfaction with finances like female high school students in the present study (Nemček 2016c).

We can further discuss that in the future investigation we need to focus to analyse the level of SWB in the group of female adolescents with different health status level and compare the SWB with healthy girls.

Limits of the study

For our investigation we used only self-reported measures of preferred leisure activities and health status level which are easy to use, less invasive and less expensive. The future investigation needs an objective measure of the health status level and leisure time activities character (sedentary, active) in high school students.

Conclusion

Observed data of the present study reported significantly higher level of SWB in healthy male high school students comparing to healthy female high school students preferring sedentary types of leisure activities. Many researches indicated a very close positive connection between regular participation in sport leisure activities and SWB (Pačesová et al. 2018; Pačesová, Šmela & Antala 2019; Pačesová, Šmela & Kraček 2019). The parents are the most responsible for the leisure time spending by their children and the leisure activities choice. They should be involved in the selection of their children's leisure activities, so it should not have only sedentary character but also sport leisure activities, mainly in young girls. Parents have to control and reduce television viewing, watching videos/DVDs, computer and internet use, chatting with friends through the social nets, playing electronic devices of their children and spend with them more leisure time in the nature by playing different sport and motor (funny) games, cycling, hiking, running, etc. This should lead to increase a SWB of young people with focus on the lifelong physical activity.

Acknowledgement

This scientific research was supported by the grant projects of the Ministry of Education, Science, Research and Sport of the Slovak Republic VEGA No. 1/0409/19, "Sport

as a tool of influencing the cognitive-evaluative component of the subjective well-being of people with health impairments” and VEGA No. 1/0726/17 „Sports motivational profile for different groups of population and the influence of various sport activity to improve the subjective dimension of quality of life”.

References

1. BENDÍKOVÁ, E. & D. NEMČEK, 2016. Life satisfaction of healthy people and people with non-communicable diseases: differences between active and inactive individuals. In: *Sport Scienc.* **9**(suppl. 2), pp. 19-23.
2. BIDDLE, S.J., I. PETROLINI & N. PEARSON, 2014. Interventions designed to reduce sedentary behaviours in young people: a review of reviews. In: *British Journal of Sports Medicine.* **48**(3), pp. 182-186.
3. CHEN, B., M. VANSTEENKISTE, W. BEYERS, L. BOONE, E.L. DECI, J. VAN DER KAAP-DEEDER, . . . J. VERSTUYF, 2015. Basic psychological need satisfaction, need frustration, and need strength across four cultures. In: *Motivation and Emotion.* **39**(2), pp. 216–236.
4. DIENER, E., 2000. Subjective well-being: the science of happiness and a proposal for a national index. In: *The American Psychologist.* **55**(1), pp. 34–43.
5. DŽUKA, J., 1995. Faktorová analýza modifikovanej verzie Bernského dotazníka subjektívnej pohody (BDP). In: *Československá psychologie.* **39**(6), pp. 512-522. ISSN 1804-6436.
6. GRAEF, R., M. CSIKSZENTMIHALYI & S.M. GIANINNO, 1983. Measuring intrinsic motivation in people's everyday lives. In: *Leisure Studies.* **2**(2), pp. 155–168.
7. GROB, A., R. LÜTHI, F.G. KAISER, A. FLAMMER, A. MACKINNON & A.J. WEARING, 1991. Berner Fragebogen zum Wohlbefinden Jugendlicher (BFW). In: *Diagnostica.* **37**(1), pp. 66-75.
8. HEADEY, B., R. VEENHOVEN & A. WEARING, 1991. Top-down versus bottom-up theories of subjective well-being. In: *Social indicators research.* **24**(1), pp. 81–100.
9. KURKOVÁ, P. 2016. Physical activity among older people who are deaf and hard of hearing: perceived barriers and facilitators. In: *Physical Activity Review.* **4**, pp. 72-80.
10. KUYKENDALL, L., L. BOEMERMAN & Z. ZHU, 2018. The importance of leisure for subjective well-being. In: DIENER, E., S. OISHI & L. TAY (eds). *Handbook of well-being.* DEF Publishers, Salt Lake City.

11. LA PLACA, & A. KNIGHT, 2014. Well-being: its influence and local impact on public health. In: *Public Health*. **128**(1), pp. 38-42.
12. LARSON, R., R. MANNELL & J. ZUZANEK, 1986. Daily well-being of older adults with friends and family. In: *Psychology and Aging*. **1**(2), pp. 117-126.
13. LAYARD, R., 2006. Happiness: lessons from a new science. Penguin, Oxford.
14. MOURATIDIS, A., M. VANSTEENKISTE, G. SIDERIDIS & W. LENS, 2011. Vitality and interest–enjoyment as a function of class-to-class variation in need-supportive teaching and pupils’ autonomous motivation. In: *Journal of Educational Psychology*. **103**(2), pp. 353-366.
15. NEMČEK, D., 2016a. Life satisfaction of people with disabilities: a comparison between active and sedentary individuals. In: *Journal of Physical Education and Sport*. **16**(2) pp. 1084-1088.
16. NEMČEK, D., 2016b. Quality of life of people with disabilities: differences in satisfaction with indicators and domains between active and inactive individuals. In: *Physical Activity Review*. **4**, pp. 62-71.
17. NEMČEK, D., 2016c. Quality of life of people with disabilities from sport participation point of view. In: *Acta Facultatis Educationis Physicae Universitatis Comenianae*. **56**(2), pp. 77-92.
18. NEMČEK, D., 2017a. Self-esteem analyses in people who are deaf or hard of hearing: a comparison between active and inactive individuals. In: *Physical Activity Review*, **5**, pp. 95-104.
19. NEMČEK, D., 2017b. Self-esteem in people with physical disabilities: Differences between active and inactive individuals. In: *Acta Facultatis Educationis Physicae Universitatis Comenianae*. **57**(1), p. 34-47.
20. NEW ECONOMICS FOUNDATION, 2018. National accounts of well-being: bringing real wealth onto the balance sheet. New Economics Foundation Publishing. [online]. Dostupné z: https://neweconomics.org/uploads/files/2027fb05fed1554aea_uim6vd4c5.pdf
21. NORMAN, G.J., B.A. SCHMID, J.F. SALLIS, K.J. CALFAS, & K. PATRICK, 2005. Psychosocial and environmental correlates of adolescent sedentary behaviors. In: *Pediatrics*. **116**(4), pp. 908-16.
22. ORGANISATION FOR ECONOMIC COOPERATION (OECD), 2013. How’s life? 2013: measuring well-being. Paris: OECD Publishing, [online]. Dostupné z: <https://doi.org/10.1787/9789264201392-en>.

23. PAČESOVÁ, P., 2019. *Vybrané psychologické aspekty športovania adolescentov a adolescentiek*. Bratislava: Slovenská vedecká spoločnosť pre telesnú výchovu a šport. ISBN 978-80-8907-78-2.
24. PAČESOVÁ, P., P. ŠMELA, & B. ANTALA, 2019. Male's level of personal well-being and anxiety trait regarding a sport activity level. In: *Sport Mont Journal*. **17**(2), pp. 59-62.
25. PAČESOVÁ, P., P. ŠMELA, & S. KRAČEK, 2019. Personal well-being as part of the quality of life: Is there a difference in the personal well-being of women and men with higher level of anxiety trait regarding their sport activity? In: *Physical Activity Review*. **7**, pp. 201-208.
26. PAČESOVÁ, P., P. ŠMELA, S. KRAČEK & L. PLEVKOVÁ, 2018. Women's Well-Being, State and Trait Anxiety Regarding their Sport Activity. In: *Sport Mont Journal*. **16**(2), pp. 33-38.
27. PARSONS, H., S.H. MACKENZIE, S. FILEP & E. BRYMER, 2019. Subjective Well-being and Leisure. W. LEAL FILHO et al. (eds.). *Good Health and Well-Being*, Springer: Nature Switzerland AG.
28. PETT, M.A., 1997. *Nonparametric statistics for health care research: Statistics for small samples and unusual distributions*. Thousand Oaks, CA: Sage.
29. RYAN, R.M. & E.L. DECI, 2000. Self-determination theory and the facilitation of intrinsic motivation, social development, and well-being. In: *American Psychologist*. **55**(1), pp. 68-78.
30. SEDENTARY BEHAVIOUR RESEARCH NETWORK, 2012. Letter to the Editor: standardized use of the terms 'sedentary' and 'sedentary behaviours'. In: *Applied Physiology Nutrition and Metabolism*. **37**(3), pp. 540-2.
31. STENLING, A. & S. TAFVELIN, 2014. Transformational leadership and well-being in sports: the mediating role of need satisfaction. In: *Journal of Applied Sport Psychology*, **26**(2), pp. 182–196.
32. VAN DEN BROECK, A., M. VANSTEENKISTE, H. DE WITTE, B. SOENENS & W. LENS, 2010. Capturing autonomy, competence, and relatedness at work: construction and initial validation of the Work-Related Basic Need Satisfaction Scale. In: *Journal of Occupational and Organisational Psychology*. **83**, pp. 981-1002.
33. VAN SLUIJS, E.M.F., A. PAGE, Y. OMMUNDSEN & S.J. GRIFFIN, 2008. Behavioural and social correlates of sedentary time in young people. In: *British Journal of Sports Medicine*. **44**(10), pp. 747-755.