

Original Article

Rosenberg Self-Esteem Scale analyses among elite and competitive athletes, recreational athletes and inactive individuals

DAGMAR NEMČEK¹, STANISLAV KRAČEK², JANKA PERÁČKOVÁ³

¹Department of Sport Educology and Sport Humanities, ²Faculty of Physical Education and Sports, ³Comenius University in Bratislava, Bratislava, SLOVAKIA

Published online: November 24, 2017

(Accepted for publication November 15, 2017)

DOI:10.7752/jpes.2017.s5249

Abstract: Self-esteem (SE) is considered integral to the self-concept, and can be defined in terms of positive feelings about the self. SE has become a household word. It is integral to an individual's sense of their own value, a principal component of mental health a strong indicator of a healthy lifestyle and an important indicator of well-being. The aim of our research was to (1) analyse the SE status using Rosenberg Self-Esteem Scale (RSES) among elite and competitive athletes (ECA; n=154); recreational athletes (RA; n=259) and inactive individuals (IAI; n=303); and (2) compare RSES scores (10 RSES items and RSES total scores) within three evaluated groups. The RSES (Rosenberg, 1989) was used as the primary research method. A 10-item scale that measures global self-worth by measuring both positive and negative feelings about the self. All items are answered using a 4-point Likert scale format ranging from strongly agree to strongly disagree. Higher scores (of each item as well as of total score) indicate higher SE. Qualitative variables were presented as proportion and percentage. Quantitative variables are presented as mean. Pearson chi-square test was used to determine the differences between ECA, RA and IAI. The highest SE in the group of ECA was presented by item number 5 and the highest SE in the groups of RA and IAI was presented by item number 4. The lowest SE was presented by item number 8 in all evaluated groups. We found that IAI achieved the lowest score of total RSES (29.23 points) comparing ECA (31.06 points) and RA (30.78 points) that indicates the lowest SE from all evaluated groups. We found significantly higher SE in the groups of actively living people (ECA and RA) comparing inactive group of respondents. Furthermore we found that there do not exist significant differences in SE between ECA and RA. We recommend that it is essential to increase participation in sports, because such participation can empower inactive people to stay healthier, reach a higher SE and quality of life on their own terms.

Key words: self-esteem; RSES items, RSES total score, participation in sport.

Introduction

Self-esteem (SE) is considered integral to the self-concept, and can be defined in terms of positive feelings about the self. SE has become a household word. Teachers, parents, therapists, and others have focused efforts on boosting self-esteem, on the assumption that high self-esteem will cause many positive outcomes and benefits (Baumeister et al., 2003). It is integral to an individual's sense of their own value (Fox & Corbin, 1989; Sonstroem, 1997), a principal component of mental health (Jambor & Elliott, 2005; Goulimaris et al., 2014) a strong indicator of a healthy lifestyle (Broďáni, Spišiak & Paška, 2015; Bendíková, 2016; Smoleňáková & Bendíková, 2017), and an important indicator of well-being (Shek & McEwen, 2012; Nemček, 2016a, Kvintová & Sigmund, 2016).

The Rosenberg Self-esteem Scale (RSES; Rosenberg, 1989) is the most widely used self-report measure of self-esteem and was designed to measure self-esteem as a one-dimensional construct (Dhingra, 2013). The factor structure of this scale, however, has been the subject of considerable debate (Corwyn, 2000; Owens, 1994). While numerous studies support this one-dimensional model (Shevlin, Bunting & Lewis, 1995), other research has found evidence of a range of multi-factorial solutions (Huang & Dong, 2012). A considerable number of researchers contend that the RSES is more appropriately conceptualized as a two-factor solution, comprised of positive and negative aspects of self-esteem (Bachman & O'Malley, 1986; Carmines & Zeller, 1979; Dobson et al., 1979; Kaufmann et al., 1991; Owens, 1994).

One way of boosting SE is participation in sport (Labudová, Nemček & Kraček, 2015; Bendíková & Dobay, 2017). There are numerous benefits of sport participation in terms of both physical and psychological well-being (e.g., self-esteem). SE is an important psychological variable (Bardel et al., 2010) and facet of personality in competitive sport (Adie, Duda & Ntoumanis, 2008). Authors Adie, Duda & Ntoumanis (2008) demonstrated that individuals with higher SE tend to perceive competitive sport as challenging, whereas individuals with lower SE. Although it is well known, that participation in sport (at the recreational as well as at the elite level) can promote SE. High-level competitive athletes participate in sport under conditions that present considerable physical and psychosocial stressors (Lundqvist, 2011). Elite athletes must continually strive for

success in a highly competitive and stressful environment; thus, high-level competitive sport can have either a detrimental or beneficial influence on the wellbeing and health of athletes (Bartholomew et al., 2011).

SE has an important role in achieving good results, if you deeply believe in your own skills and abilities, you will perform well what is important not only for elite athletes but also for those who performing sport at the recreational level. If there is no such faith but doubts which prevails, the elite as well as recreational athletes will have the feeling that the task is far too hard for him, beyond his potentials (Hardy & Crace, 2009, Velikić, Knežević, & Rodić, 2014). Through sport, it may be enhance SE by having a positive image of the bodies and the physical skills and abilities that can be developed (Ahmed et al., 2014). A number of research proved that participation in games and sports and exercise is usually positively enhances the level of SE exercise (Vealey, 1992; Kurková, 2015), but at the same time it is also found that this level is the most stable and difficult to change (Marsh, 1986, 1995; Marsh, Hey, Roche, & Perry, 1997). Similarly Lowery et al. (2005) reported that physical fitness/health-related behaviors were positively related to SE and body image in recreational athletes.

On the other hand, there are some researches showing that sedentary population declares significantly lower SE comparing actively living population who are participating in sport and physical activity regularly. Kavussanu and McAuley (1995) found that physically active individuals were more optimistic and less pessimistic than were inactive/ less active individuals. Nemček (2017a) found that mean scores of each RSES item as well as of RSES total score of sedentary population with hearing impairments point to lower SE comparing actively living people who are deaf or hard of hearing. The same author presents in another publication (Nemček, 2017b) that actively living people with physical disabilities who regularly participating in sport showing significantly higher SE comparing individuals with physical disabilities with sedentary behaviour (Kurková & Nemček, 2016). Considering the previous research findings, the aim of our research was to (1) analyse the SE status using RSES among elite and competitive athletes, recreational athletes and inactive individuals and (2) compare RSES scores (10 RSES items and RSES total scores) within three evaluated groups.

Methods

Participants and procedure

Three main groups of people (n=716) were recruited for the study. The research sample comprised 154 elite and competitive athletes (ECA), 259 recreational athletes (RA) and 303 inactive individuals (IAI) who did not participate in any sport and physical activity in their leisure time. ECA were contacted through representatives of selected national sport organisations (associations and federations) and sport universities located in Slovakia. Questionnaires were filled out during meetings organised by sport organisations and students of sport universities filled out the questionnaires during their classes with university teacher permission. The data of RA were collected mostly through different sport facilities intended for RA and through students attending sport and regular universities located in Slovakia. Questionnaires were filled out after exercise classes and students filled out the questionnaires during their teaching classes with university teacher permission. All RA participated in recreational physical activities regularly at least two times per week. The data of IAI were collected mostly through students attending regular universities located in Slovakia and they were asked to give the same questionnaire to their inactive friends, peers and relatives (parents, grand parents, siblings, etc.). Students filled out the questionnaires during their classes with university teacher permission and questionnaires of their friends, peers and relatives brought to seminars within the span of two months. All data were collected during year period 2015.

The Rosenberg Self-Esteem Scale (RSES)

A 10-item scale that measures global self-worth by measuring both positive and negative feelings about the self: (1) On the whole, I am satisfied with myself; (2) At times I think I am no good at all; (3) I feel that I have a number of good qualities; (4) I am able to do things as well as most other people; (5) I feel I do not have much to be proud of; (6) I certainly feel useless at times; (7) I feel that I'm a person of worth, at least on an equal plane with others; (8) I wish I could have more respect for myself; (9) All in all, I am inclined to feel that I am a failure; (10) I take a positive attitude toward myself (Rosenberg, 1965). The RSES is believed to be uni-dimensional. All items are answered using a 4-point Likert scale format ranging from strongly agree to strongly disagree. Items 2, 5, 6, 8, 9 are reverse scored. Scale format ranging is categorised as follows: "Strongly Disagree" (SD) – 1 point, "Disagree" (D) – 2 points, "Agree" (A) – 3 points, and "Strongly Agree" (SA) – 4 points and the scores summate for all ten items (total score). Higher scores (of each item as well as of total score) indicate higher SE. In this study a Slovak version of the RSES was used (Nemček & Snopková, 2012).

Data analyses

Statistical analysis was performed using IBM SPSS 23. Qualitative variables are presented as proportion and percentage. Quantitative variables are presented as mean. Pearson chi-square test was used to determine the differences between the three groups (ECA, RA and IAI). In the current study, only one measurement has been made and three main groups formed the study. The level of statistical significance was set at $p < .05$.

Results

Participants

In the research participated 21.5 % ECA, 36.2 % RA and 42.3 % people who are not participating in any sport and physical activity in their leisure time. The group of ECA is showing higher number of men (76.6 %) up to 30 years of age (90.3 %). Group of RA is also represented mostly by men (59.8 %) up to 30 years of age (65.6 %). And group of inactive people including more women (58.4 %) over 30 years of age (63.4 %). Basic participant's characteristics are presented in Table 1.

Table 1. Data of the 716 participants

| Baseline characteristics of participants | | ECA | RA n (%) | IAI |
|--|-------------------|------------|-------------|------------|
| | | 154 (21.5) | 259 (36.2) | 303 (42.3) |
| Gender | Men | 118 (76.6) | 155 (59.8) | 126(41.6) |
| | Women | 36 (23.4) | 104 (40.2) | 177(58.4) |
| Age | Range 15-29 years | 139 (90.3) | 170 (65.6) | 111(36.6) |
| | Range 30+ years | 15 (9.7) | 89 (34.4) | 192(63.4) |

ECA mostly participated in football and other sport games at the professional level. The group of RA followed in their leisure time mostly group/team physical activities with music accompaniment like different types of aerobics and dances, played football at the recreational level, performed strength work out in the gyms and fitness centres, etc.

RSES

The highest SE in the group of ECA was presented by item number 5 (3.331 points of the mean score), and also by items number 10 (3.286 points of the mean score) and 7 (3.208 points of the mean score). On the other hand, the lowest SE of ECA was presented by item number 8 (2.714 points of the mean score) and also by item number 6 (2.968 points of the mean score). ECA achieved 31.06 points of total RSES score (Table 2).

The highest SE in the group of RA was presented by item number 4 (3.255 points of the mean score), and also by items number 10 (3.243 points of the mean score) and 7 (3.236 points of the mean score). On the other side, the lowest SE of RA was presented by items number 8 (2.587 points of the mean score) and 1 (2.981 points of the mean score). RA achieved 30.78 points of total RSES score, what was lower than RSES total score of ECA (Table 2). The highest SE in the group of IAI was presented by item number 4 (3.142 points of the mean score), and also by item number 7 (3.125 points of the mean score). On the other hand, the lowest SE of IAI was presented also by item number 8 (2.373 of mean score points) like two other evaluated group of respondents (ECA and RA). Low SE in IAI was further presented by items number 6 (2.743 of mean score points) and 2 (2.861 points of the mean score). IAI achieved the lowest score of total RSES score (29.23 points) comparing ECA and RA, that indicates the lowest SE from all evaluated groups (Table 2).

RSES total scores revealed significantly higher SE in the group of physically active people (ECA and RA) comparing IAI (Table 2). RSES items analyses show that ECA are significantly more satisfied with themselves as well as they do have much to be proud of than RA. By 8 RSES items as well as by total RSES score is shown that there do not exist significant differences in SE between ECA and RA. On the other hand RSES items as well as total RSES scores comparisons show significantly higher SE in ECA and RA comparing IAI. In both comparisons are presenting significantly higher SE physically active groups of people (ECA and RA) by 7 from 10 RSES items.

This observed data generally presented significantly higher SE in the group of actively living people (ECA and RA) comparing inactive group of respondents, because mean scores of ten RSES item's as well as mean RSES total score were the lowest in the group of IAI comparing all mean scores of ECA and RA. Besides of this, 80 % of RSES items mean score exceed 3.000 points in groups of ECA and RA comparing IAI, where only 40 % of RSES items exceed 3.000 points of the mean scores.

Table 2 RSES comparisons among evaluated groups of population

| Item Nr | ECA | RA | IAI | ECA vs RA | | RA vs IAI | | ECA vs IAI | |
|--------------------|--------------|--------------|--------------|--------------|-------------|--------------|---------------|--------------|---------------|
| | mean | mean | mean | χ^2 | <i>p</i> | χ^2 | <i>p</i> | χ^2 | <i>p</i> |
| 1. | 3.162 | 2.981 | 2.960 | 8.181 | 0.00** | 0.205 | 0.65 | 11.78 | 0.00** |
| 2. | 3.091 | 3.050 | 2.861 | 0.105 | 0.74 | 7.384 | 0.00** | 10.52 | 0.00** |
| 3. | 3.065 | 3.112 | 3.040 | 0.533 | 0.47 | 2.288 | 0.13 | 2.367 | 0.30 |
| 4. | 3.162 | 3.255 | 3.142 | 1.105 | 0.29 | 3.149 | 0.07 | 3.201 | 0.20 |
| 5. | 3.331 | 3.162 | 2.980 | 3.890 | 0.04* | 8.912 | 0.00** | 23.82 | 0.00** |
| 6. | 2.968 | 3.008 | 2.743 | 0.617 | 0.43 | 13.80 | 0.00** | 14.98 | 0.00** |
| 7. | 3.208 | 3.236 | 3.125 | 0.083 | 0.77 | 3.992 | 0.04* | 4.414 | 0.11 |
| 8. | 2.714 | 2.587 | 2.373 | 2.643 | 0.10 | 7.383 | 0.00** | 17.62 | 0.00** |
| 9. | 3.097 | 3.108 | 2.904 | 0.009 | 0.93 | 10.54 | 0.00** | 12.78 | 0.00** |
| 10. | 3.286 | 3.243 | 3.106 | 0.448 | 0.48 | 7.351 | 0.00** | 12.13 | 0.00** |
| Total score | 31.06 | 30.78 | 29.23 | 0.291 | 0.59 | 18.96 | 0.00** | 26.96 | 0.00** |

Notes (1) Possible item score range is 1–4 and possible total score range is 10–40; higher mean scores indicate higher SE.

(2)*level of statistical significance $p < .05$; **level of statistical significance $p < .01$

Discussion

The results of our study presented the SE status using RSES within three population groups (elite and competitive athletes; recreational athletes and inactive individuals). We tried to analyse SE by using the RSES items scores and RSES total score. Finally we compared achieved data within three evaluated groups.

The highest SE in the group of ECA was presented by item number 5 when 89.6 % of them strongly disagreed and disagreed that they do not have much to be proud of. The lowest SE of ECA was presented by item number 8 when 39.6 % of them strongly agreed and agreed that they could have more respect for themselves. The highest SE in the group of RA was presented by item number 4 when 91.9 % of them strongly agreed and agreed that they are able to do things as well as most other people. The lowest SE of RA was presented by items number 8 like a group of ECA where 50.2 % of RA strongly agreed and agreed that they could have more respect for themselves. The highest SE in the group of IAI was presented by item number 4 like it was in the group of RA, when 84.8 % of IAI strongly agreed and agreed that they are able to do things as well as most other people. The lowest SE of IAI was presented also by item number 8 like in two other evaluated group of respondents (ECA and RA), when 57.5 % of them strongly agreed and agreed that they could have more respect for themselves. Furthermore we found that IAI achieved the lowest score of total RSES (29.23 points) comparing ECA (31.06 points) and RA (30.78 points) that indicates the lowest SE from all evaluated groups.

Other research investigations presented similar findings. Individuals with higher levels of athletic competence show more enhanced self-concept and SE (Kay, Felker, & Varoz, 1972; Marsh et al., 1997; Marsh et al., 1995), and added to this is the psychological reinforcement of social recognition for their performances (Loland, 1999; Webb, Nasco, Riley, & Headrick, 1998). Other researches found that elite athletes presented greater SE than non-elite athletes (Mahoney, 1989; Marsh et al., 1997) and non-athletes (Kamal, et al., 1995; Marsh et al., 1995). Moreover, elite athletes in the investigation of Marsh et al. (1997) presented higher physical self-concepts than non-elite ones. Results of Cekin (2015) revealed that physically active emerging adults ($n=136$) had significantly higher SE, optimism, and happiness scores than physically inactive emerging adults ($n=237$). Comparing author's results with our sample, The mean total RSES score of physically active emerging adults in the Cekin's (2015) investigation achieved 32.94 points and mean total RSES score of physically inactive 31.57 points. Comparing our results, Cekin's sample of actively living people showed higher SE than our groups of ECA and RA, and also his sample of physically inactive emerging adults presented higher SE than our IAI. A twin study by Stubbe, de Moor, Boomsma and de Geus (2007) showed that for individuals between 18 and 65 years old, participation in exercise is correlated with higher levels of happiness and life satisfaction in all age groups and both variables were mediated by genetic factors. Another study by Kye and Park (2014) also revealed that greater levels of happiness are associated with implementing exercise.

King et al.'s (1993) study showed the lack of difference between SE scores in disabled and healthy individuals and based on their results suggested that clinical care approach not to be determined assuming that disabled people have lower SE. Differences between active and sedentary people with disabilities reveal that those, who prefer active life style and regularly participating in sport (elite and recreational levels) are more satisfied with their life than those, who are not participating in sport at all (Nemček, 2016b).

Conclusion

Based on the aim of the current study, we found significantly higher SE in the groups of actively living people (ECA and RA) comparing inactive group of respondents. Furthermore we conclude that there do not exist significant differences in SE between ECA and RA. Generally we can say that the evaluation of SE by the RSES items shows that it is a suitable tool to assess SE in the population regularly participating in sport as well as inactive individuals. We recommend that it is essential to increase participation in sports, because such participation can empower inactive people to set and attain goals, stay healthier, reach a higher SE and quality of life on their own terms.

Acknowledgement

The scientific paper was supported by grant projects VEGA nr. 1/0726/17 with the topic "*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

Adie, J.W., Duda, J.L. & Ntoumanis, N. (2008). Achievement goals, competition appraisals, and the psychological and emotional welfare of sport participants. *Journal of Sport and Exercise Psychology*, 30(3), 302–322.

- Bachman, J. G. & O'Malley, P. M. (1986). Self-concept, self-esteem, and educational experiences: The frog pond revisited (again). *Journal of Personality and Social Psychology*, 50(1), 35–46.
- Bardel, M., Fontayne, P., Colombel, F. & Schiphof, L. (2010). Effects of match result and social comparison on sport state self-esteem fluctuations. *Psychology of Sport and Exercise*, 11(3), 171–176.
- Bartholomew, K.J., Ntoumanis, N., Ryan, R.M. & Thogersen-Ntoumani, C. (2011). Psychological need thwarting in the sport context: Assessing the darker side of athletic experience. *Journal of Sport and Exercise Psychology*, 33(1), 75–102.
- Baumeister, R.F., Campbell, J.D., Krueger, J.I. & Vohs, K.D. (2003). Does high self-esteem cause better performance, interpersonal success, happiness, or healthier lifestyles? *Psychological Science in the Public Interest*, 4(1), 1–44.
- Bendíková E. (2016). Changes in the posture of students due to equipment-aided exercise programs that are applied in physical and sport education. *Journal of Physical Education and Sport*, 16(2), 281–286.
- Bendíková, E. & Dobay, B. (2017). Physical and Sport Education as a Tool for Development of a Positive Attitude Toward Health and Physical Activity in Adulthood. *European Journal of Contemporary Education*, 6(1), 14–21.
- Brod'ani, J., Spišiak, M. & Paška, E. (2015). The interaction of physical activity and quality of life of adolescents. *Journal of Physical Education and Sport*, 15(3), 518–524.
- Carmines, E.G. & Zeller, R.A. (1979). *Reliability and validity assessment*. Beverly Hills, CA: Sage.
- Cekin, R. (2015). Psychological Benefits of Regular Physical Activity: Evidence from Emerging Adults. *Universal Journal of Educational Research*, 3(10), 710–717.
- Corwyn, R. F. (2000). The factor structure of global self-esteem among adolescents and adults. *Journal of Research in Personality*, 34(4), 357–379.
- Dhingra K. (2013). Validity and Composite Reliability of the Rosenberg Self-Esteem Scale among U.K. University Students. *Journal of Humanistics & Social Sciences*, 2(1), 24–30.
- Ahmed, D., Mladenovic, M., King, W., Ho, Y., Lee, K.H. & Khan, B.A. (2014). Exploring the perception of self esteem among high school athletes. *SportLogia*, 10(2), 81–88.
- Dobson, C., Goudy, W. J., Keith, P. M. & Powers, E. (1979). Further analysis of Rosenberg's self-esteem scale. *Psychological Reports*, 44(2), 639–641.
- Fox, K.R. & Corbin, C.B. (1989). The physical self-perception profile: Development and preliminary validation. *Journal of Sport and Exercise Psychology*, 11(4), 408–430.
- Goulimaris, D., Mavridis, G., Genti, M. & Rokka, S. (2014) Relationships between basic psychological needs and psychological well-being in recreational dance activities. *Journal of Physical Education and Sport*, 14(2), 277 – 284.
- Hardy, C. & Crace, K. (2009). Dealing with precompetitive anxiety. *Sport Psychology Training Bulletin*, 3513–3517.
- Huang, C. & Dong, N. (2012). Factor structures of the Rosenberg Self-Esteem Scale: A meta- analysis of pattern matrices. *European Journal of Psychological Assessment*, 28(2), 132–138.
- Jambor, E. & Elliott, M. (2005). Self-esteem and coping strategies among deaf students. *Journal of Deaf Studies and Deaf Education*, 10(1), 63–81.
- Kamal, A. F., Blais, C., Kelly, P. & Ekstrand, K. (1995). Self esteem attributional components of athletes versus nonathletes. *International Journal of Sport Psychology*, 26, 189–195.
- Kaufman, P., Rasinski, K.A., Lee, R. & West, J. (1991). *National Education Longitudinal Study of 1988. Quality of the responses of eighth-grade students in NELS88*. Washington, DC: U.S. Department of Education.
- Kavussanu, M. & McAuley, E. (1995). Exercise and optimism: are highly active individuals more optimistic? *Journal of Sport and Exercise Psychology*, 17(3), 246–246.
- Kay, R. S., Felker, D. W. & Varoz, R. O. (1972). Sports interests and abilities as contributors to self-concept in junior high school boys. *Research Quarterly*, 43(2), 208–215.
- King, G.A., Shultz, I.Z., Steel, K., Gilpin, M. & Carthers, T. (1993). Self-evaluation and self-concept of adolescents with physical disabilities. *American Journal of Occupational Therapy*, 47(2), 132–140.
- Kurková, P. (2015). Emotions in the physical activities of Czech students who are deaf or hard of hearing in general and special education. *Journal of Physical Education and Sport*, 15(4), 823–828.
- Kurková, P. & Nemček, D. (2016). Attitudes of students with disabilities towards physical education lessons: reasons for their indifference and preference for leisure time activities. *Journal of Physical Education and Sport*, 16(1), 222–229.
- Kvintová, J. & Sigmund, M. (2016). Physical activity, body composition and health assessment in current female University students with active and inactive lifestyles. *Journal of Physical Education and Sport*, 16 Supplement issue (1), 627 - 632
- Kye, S.Y. & Park, K. (2014). Health-related determinants of happiness in Korean adults. *International Journal of Public Health*, 59(5), 731–8.
- Labudová, J., Nemček, J. & Kraček, S. (2015). *Šport na každý deň. [Sport for everyday]*. Bratislava, Slovakia: END.

- Loland, N.W. (1999). Some contradictions and tensions in elite sportsmen's attitudes towards their bodies. *International Review for the Sociology of Sport*, 34(3), 291-302.
- Lowery, S.E., Kurpius, S.E.R., Befort, C., Blanks, E.H., Sollenberger, S., Nicpon, M.F., et al. (2005). Body Image, Self-Esteem, and Health-Related Behaviors Among Male and Female First Year College Students. *Journal of College Student Development*, 46(6), 612-23.
- Lundqvist, C. (2011). Well-being in competitive sport - The feel-good factor? A review of conceptual considerations of well-being. *International Review of Sport and Exercise Psychology*, 4(2), 109-127.
- Mahoney, M.J. (1989). Psychological predictors of elite and non-elite performance in Olympic weightlifting. *International Journal of Sport Psychology*, 20(1), 1-12.
- Marsh, H.W. (1986). Global self-esteem: its relation to specific facets of self-concept and their importance. *Journal of Personality and Social Psychology*, 51(6), 1224-1236.
- Marsh, H.W. (1995). A Jamesian model of self-investment and self-esteem: comment on Pelham. *Journal of Personality and Social Psychology*, 69(6), 1151-1160.
- Marsh, H.W., Hey, J., Roche L.A. & Perry, C. (1997). Structure of physical self-concept: Elite athletes and physical education students. *Journal of Educational Psychology*, 89(2), 369-380.
- Marsh, H.W., Perry, C., Horsely, C. & Roche, L. (1995). Multidimensional self-concepts of elite athletes: How do they differ from the general population? *Journal of Sport and Exercise Psychology*, 17(1), 70-83.
- Nemček, D. & Snopková, Z. (2012). Diferencie v sebahodnotení medzi športujúcou a nešportujúcou populáciou. [Differences in self-esteem between active and inactive population]. In *Pohyb a zdravie [Movement and Health]* (pp. 124-131). Trenčín, Slovakia : Trenčianska univerzita A. Dubčeka, Fakulta zdravotníctva.
- Nemček, D. (2016a). Cognitive element of subjective well-being of the Slovak population. In *Physical Activity, Health and Prevention: International Scientific Conference* (pp. 62-67). Žilina, Slovakia: IPV Institute of Education.
- Nemček, D. (2016b). Life satisfaction of people with disabilities: a comparison between active and sedentary individuals. *Journal of Physical Education and Sport*, 16(2), 1084-1088.
- Nemček, D. (2017a). Self-Esteem analyses in people who are deaf or hard of hearing: A comparison between active and inactive individuals. *Physical Activity Review*, 5, 95-104.
- Nemček, D. (2017b). Self-Esteem in people with physical disabilities: Differences between active and inactive individuals. *Acta Facultatis Educationis Physicae Universitatis Comenianae*, 57(1), 34-47.
- Owens, T.J. (1994). Two dimensions of self-esteem: Reciprocal effects of positive self-worth and self-deprecation on adolescent problems. *American Sociological Review*, 59(3), 391-407.
- Rosenberg, M. (1965). *Society and the adolescent self-image*. Princeton, NJ: Princeton University Press.
- Rosenberg, M. (1989). *Society and the adolescent self-image*. (Rev. Ed.). Middeltown, CT: Wesleyan University Press.
- Shek, Y.L. & McEwen, M.K. (2012). The relationships of racial identity and gender role conflict to self-esteem of Asian American undergraduate men. *Journal of College Student Development*, 53(5), 703-718.
- Shevlin, M., Bunting, B.P. & Lewis, C.A. (1995). Confirmatory Factor Analysis of The Rosenberg Self-Esteem Scale. *Psychological Reports*, 76(3), 707-710.
- Smoleňáková, N. & Bendíková E. (2017). Effect of the Content Standard for Changing the Level of Knowledge of Secondary School Students. *Journal of Physical Education and Sport*, 17(1), 182 - 187.
- Sonstroem, R.J. (1997). Exercise and self-esteem. In W. P. Morgan (Ed.), *Physical activity and mental health* (pp. 128-143). Washington DC: Taylor & Francis.
- Stubbe, J.H., de Moor, M.H.M., Boomsma, D.I. & de Geus, E.J.C. (2007). The association between exercise participation and well-being: A co-twin study. *Preventive Medicine*, 44(2), 148-52.
- Vealey, R.S. (1992). Personality and sport: A comprehensive view. In T. S. Horn (Ed.), *Advances in sport psychology* (pp. 25-60). Champaign, IL: Human Kinetics Publishers.
- Velikić, D., Knežević, J. & Rodić, N. (2014). Relations of some personality traits and characteristics of sportsmen with the level of sports anxiety. *SportLogia*, 10(1), 35-43.
- Webb, W.M., Nasco, S.A., Riley, S. & Headrick, B. (1998). Athlete identity and reactions to retirement from sports. *Journal of Sport Behavior*, 21, 338-362.