

Original research article

**PHYSICAL SELF-CONCEPT IN SLOVENIAN ADOLESCENTS:
DIFFERENCES BY GENDER AND SPORTS PARTICIPATION**

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Abstract. *The aim of the study was to examine the multidimensional physical self-concept among Slovenian adolescent males and females in relation to participation in sports. Three hundred and twenty participants aged between 13 and 18 were included in the study. The Slovenian version of the Physical Self-Description Questionnaire (PSDQ) was used to measure the participants' physical self-concept. The results of the multivariate analysis of variance indicated that sport participants had significantly higher scores on almost all the PSDQ subscales than non-sport participants.*

Based on the results of the present study, it can be concluded that sports participation is associated with a more positive physical self-concept and greater self-esteem among adolescents. The findings confirm the existence of gender differences in the physical self-concept of adolescents, but it should be stressed that these differences are smaller in sport participants than non-sport participants. The results might be useful to reflect on effective physical education and sports programs in order to promote a more active and healthy lifestyle among adolescents.

Key words: *physical self-concept, adolescents, gender, sport.*

INTRODUCTION

When talking about the importance of developing an active and healthy lifestyle among young people, many psychological factors that are involved in this process should be taken into account. In particular, the physical self-concept has been determined to play a significant role in the field of physical activity and sport, acting either as a predictor of motor learning and involvement in sport, or as an outcome of physical exercise (Marsh, Chanal, & Sarrazin, 2006). Fox (2000) pointed out that "the physical self occupies a unique position in the self-system because of the body, through its appearance, attributes, and abilities, provides a substantive interface between the individual and the world" (p. 230).

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The physical self-concept is considered an important subdomain of the overall self-concept that incorporates different components, from self-evaluation of one's general appearance and body weight, perception of athletic competence, to judgments of others regarding one's body (Shriver et al., 2013). The formation of the physical self-concept is not influenced only by the data which determine an individual's physical structure, or only by the mere psychological view of one's physicality, but by the close interaction of these two variables with the social context (Cash, Thériault & Annis, 2004).

The physical self-concept plays a crucial role in adolescence, when individuals experience many changes in their body. Thus, maintaining and developing a positive physical self during this period contributes to the better the mental health and well-being of the youth (Maïano, Ninot, & Bilard, 2004). Furthermore, many studies have demonstrated that the physical self-concept is a strong facilitator of physical activity (Peart, Marsh & Richards, 2005); it plays an important role either as a mediating variable that allows the acquisition of motor competencies and promotes sports activities, or as a result of exercise (Marsh et al., 2006). Different studies emphasized the importance of perceived physical appearance and athletic competence for young people's self-esteem (Shapka & Keating, 2005).

In the last decade, a great number of studies examined the relationship between the physical self-concept and physical activity level among children and adolescents (Moreno, Cervelló & Moreno, 2008). Cross-sectional research findings quite consistently indicated that adolescents involved in regular exercise had more favorable physical self-perceptions, especially in terms of perceived motor abilities and body attractiveness compared to their less active or sedentary peers (Asçi, 2004; Moreno et al., 2008). Also, significant correlations were observed between objective measures of physical fitness and the physical self-concept (Carraro, Scarpa & Ventura, 2010). In some intervention studies, exercise and training are proposed to reduce body dissatisfaction and enhance physical self-perception (Campbell & Hausenblas, 2009). Moreover, the results of a recent study conducted on Norwegian adolescents reveal that there is an indirect effect of physical activity on global self-worth through both physical appearance and athletic competence (Haugen, Säfvenbom, & Ommundsen, 2011). According to gender, research indicates that boys and girls usually differ in their physical self-perceptions. In general, boys report a more favorable physical self-concept compared to girls with regard to most components of physical abilities (Çağlar, 2009; Klomsten, Skaalvik & Espnes, 2004; Maïano et al., 2004; Moreno et al., 2008), body attractiveness (Klomsten et al., 2004; Maïano et al., 2004), and overall physical self-appraisals (Moreno et al., 2008; Zueck et al., 2014).

The study of the physical self in adolescence might be helpful for reflecting the effectiveness of physical education and sports programs in order to promote a more active and healthy lifestyle among adolescents, and for the identification of those students at risk of remaining physically inactive and therefore more prone to developing unhealthy lifestyle behavior. It seems necessary to consider any possible interventions which could increase students' activities both in and out of school in order to improve their perceived physical competence. It should be emphasized that perceived competence is closely related to motivational processes. Students with high perceptions of competence are more likely to choose challenging tasks, have fun during the learning process, use more effort to master skills, persist longer when faced with difficulties, and show more confidence (Roberts, Treasure & Conroy, 2007). In order to develop a more positive physical self-concept and increase physical activity involvement among young people, physical

education teachers and coaches should provide attractive programs through creating opportunities to experience success, promoting a positive emotional group climate, and take into consideration the individual needs and interests in specific sports activities, also in relation to gender.

Different measurement models of the physical self-concept have been proposed, including the Physical Self-Description Questionnaire (PSDQ; Marsh, Richards, Johnson, Roche, & Tremayne, 1994). PSDQ research has paid particular attention to establishing the effects of physical activity and exercise on the physical self-concept of children and adolescents. However, very little research has been done on the physical self-perceptions of Slovenian adolescents in relation to sports involvement, particularly with respect to gender. Therefore, the purpose of the present study was to examine the multidimensional physical self-concept using the PSDQ questionnaire among adolescent male and female sport participants and non-sport participants.

THE METHOD

The sample of participants

A total of 320 elementary and high school students (169 females and 151 males) between the ages of 13 and 18 ($M = 15.39$, $SD = 1.69$) participated in the study. The participants were recruited from three of the largest cities in Slovenia. The inclusion criteria was the absence of serious health problems and chronic diseases, including physical disabilities and any related problems. The study was approved by the Ethics Committee for sport at the Faculty of sport, University of Ljubljana.

The measuring instruments

The multidimensional physical self-concept was assessed using the Slovenian version of the Physical Self-Description Questionnaire (PSDQ). The original PSDQ instrument (Marsh et al., 1994) was translated into Slovenian after obtaining permission from the authors. The PSDQ is one of the most commonly used instruments for measuring physical self-concept, including nine specific (Appearance, Body Fat, Physical Activity, Strength, Coordination, Flexibility, Endurance, Sport Competence, Health) and two general components (Global Physical Self and Self-Esteem). The instrument consists of 70 items and the participants respond to each item on a 6-point true–false scale, with higher values indicating a higher perceived competence and a more positive self-concept. The PSDQ has demonstrated good reliability (a median coefficient alpha of 0.92) across the 11 scales, a well-defined, replicable factor structure, as well as convergent and discriminant validity (Marsh et al., 1994). The psychometric properties of the PSDQ have been confirmed in several studies including different populations and cultures (Aşçi, Alfermann, Çağlar & Stiller, 2008; Guérin, Marsh, & Famose, 2004; Tsorbatzoudis, 2005).

The evidence of validity of the PSDQ for the Slovenian adolescent sample was previously determined by a confirmatory factor analysis. The results indicated acceptable goodness of fit indices ($\chi^2/df=1.68$, $CFI=0.98$, $TLI=0.98$, $PNFI=0.83$, $RMSEA=0.06$, $SRMR=0.05$) of the PSDQ for the sample (Dolenc, 2014).

After the administration of the PSDQ, the participants were asked to report some personal data, including age, gender, and their level of sport involvement. The question

was: "Please indicate, if you were involved in some regular and organized sports activity outside your regular physical education classes for the past twelve months". Based on body measurements (the weight and height of the participants) the body mass index (BMI – kg/m²) was calculated.

The procedure

Permission to conduct the study was previously received from the school staff. Written consent to participate in the study was also obtained from the students and their parents. The participants completed the questionnaire at school in the presence of the author of the study. They received detailed instructions for completing the questionnaire and were told to ask if they were confused concerning either the instructions or the clarity of items. They spent approximately fifteen minutes filling out the questionnaire and their responses were kept anonymous.

Statistical analyses

In addition to the descriptive statistics, the internal consistency of the PSDQ was measured using Cronbach's alpha coefficient. To compare the mean values of age and the BMI between adolescent sport participants and non-sport participants, the independent t-test was calculated. A two-way MANOVA was conducted to detect main (gender and sport involvement) and interaction effects in different physical self-concept dimensions. Pillai's Trace multivariate statistics were used (rather than Wilks' Lambda) since the test is more robust and is used with unequal cell size, in the case of heterogeneity of covariance and a significant value of Box's M test (Tabachnick & Fidell, 2001). In this study, Box's M test was significant (Box's M=310.65, F=1.47, p<0.01).

THE RESULTS

Among all the participants, 141 adolescents were involved in regular and organized sports activities at school or in sports clubs (e.g. basketball, volleyball, soccer, handball, athletics, swimming, rowing, gymnastics, sailing, archery, cycling) (sport participants) and 179 adolescents were not involved in any regular sport activity outside their physical education classes (non-sport participants). There were no significant differences in BMI between the groups ($t=-1.85$, $p=.07$), although the adolescent sport participants had a lower BMI ($M=20.84$, $SD=2.12$) than non-sport participants ($M=21.39$, $SD=3.18$). Also, no age differences were found ($t=-1.02$, $p=.31$) between the sport participants ($M=15.28$, $SD=1.68$) and non-sport participants ($M=15.48$, $SD=1.70$).

The basic descriptive statistics of the PSDQ subscales for all the participants are presented in Table 1. The arithmetic means of all the dimensions of the PSDQ were above the midpoint of the rating scale, which indicates a tendency toward positive self-descriptions among the participants. The skewness and kurtosis for all the PSDQ dimensions were within an acceptable range. Cronbach alpha coefficients ranged between 0.78 and 0.92, indicating good reliability of the instrument.

Table 1 Descriptive statistics and the reliability of PSDQ subscales (n = 320)

PSDQ	M	SD	Skewness	Kurtosis	Alpha
Health	4.78	0.85	-0.933	0.499	0.78
Coordination	4.30	0.84	-0.466	-0.061	0.83
Physical Activity	4.32	1.39	-0.581	-0.821	0.87
Body Fat	4.41	1.24	-0.556	-0.677	0.92
Sport Competence	3.95	1.13	-0.492	-0.341	0.91
Global Physical Self	4.25	1.19	-0.673	-0.323	0.89
Appearance	4.10	1.06	-0.473	-0.187	0.87
Strength	4.03	1.05	-0.332	-0.430	0.82
Flexibility	4.33	0.98	-0.328	-0.640	0.88
Endurance	3.72	1.32	-0.146	-0.840	0.90
Self-Esteem	4.73	0.76	-0.644	-0.062	0.85

Table 2 represents means and standard deviations of the PSDQ subscales based on sport involvement and the gender of the participants.

Table 2 Physical self-concept scores for the male and female sport participants and non-sport participants

PSDQ	Sport participants				Non-sport participants			
	Females		Males		Females		Males	
	M	SD	M	SD	M	SD	M	SD
Health	4.90	0.74	4.76	0.83	4.67	0.87	4.82	0.91
Coordination	4.54	0.75	4.61	0.72	3.92	0.86	4.30	0.84
Physical Activity	5.25	0.70	5.32	0.92	3.29	1.27	3.92	1.26
Body Fat	4.32	1.08	4.82	1.13	4.12	1.33	4.51	1.25
Sport Competence	4.36	0.83	4.58	0.87	3.34	1.11	3.80	1.15
Global Physical Self	4.09	1.26	4.78	0.90	3.91	1.21	4.38	1.18
Appearance	3.94	1.16	4.47	1.00	3.86	0.92	4.23	1.10
Strength	4.06	0.87	4.63	0.82	3.51	1.00	4.11	1.14
Flexibility	4.50	0.99	4.62	0.85	4.03	1.01	4.31	0.95
Endurance	3.93	1.14	4.67	1.06	2.97	1.16	3.64	1.31
Self-Esteem	4.81	0.68	4.91	0.65	4.61	0.83	4.67	0.80

The eleven subscales of the PSDQ were analyzed by a two-way multivariate analysis of variance with gender (males/females) and sports involvement (sport participants/non-sport participants) as independent variables (Table 3).

Table 3 The univariate and multivariate analysis of variance of the PSDQ subscales

PSDQ	Main	effects	Interaction
	Gender	Sport involvement	Gender x Sport involvement
	F	F	F
Health	0.00	0.73	2.26
Coordination	6.28*	26.48***	2.93
Physical Activity	8.49**	192.17***	4.93
Body Fat	15.53**	3.37	0.17
Sport Competence	8.96**	61.50***	0.99
Global Physical Self	26.11***	4.95*	0.73
Appearance	15.67***	1.85	0.42
Strength	26.43***	23.49***	0.00
Flexibility	3.29	12.81***	0.50
Endurance	39.20***	56.19***	0.08
Self-Esteem	0.44	6.51*	0.11
Multivariate analysis			
Pillai's Trace	0.18	0.41	0.06
Multivariate <i>F</i>	5.89***	18.98***	1.75

* $p < .05$; ** $p < .01$; *** $p < .001$

Significant multivariate main effects were found for gender (Pillai's Trace=0.18, $F=5.89$, $p < .001$) and sports involvement (Pillai's Trace=0.41, $F=18.98$, $p < .001$). On the other hand, no significant multivariate interaction effect between independent variables was observed ($p > .05$). Significant univariate effects of sports involvement occurred on most of the PSDQ subscales. The differences between the adolescent sport participants and non-sport participants were found for Physical Activity, Sport Competence, Endurance, Coordination, Strength, Flexibility ($p < .001$), Global Physical Self and Self-Esteem ($p < .05$). In all cases, the sport participants had higher scores compared to the non-sport participants. No significant differences were found on the Health, Body Fat and Appearance subscales ($p > .05$). The univariate analysis of variance revealed a main effect of gender on eight subscales of the PSDQ: Endurance, Strength, Global Physical Self, Appearance ($p < .001$), Physical Activity, Body Fat, Sport Competence ($p < .01$) and Coordination ($p < .05$). In all cases, the males had higher scores than the females. No significant differences were found for the Health and Self-Esteem subscales ($p > .05$).

Also, gender differences were specifically tested for the two groups. In the group of sport participants, the males scored significantly higher on Strength, Endurance and Appearance ($p < .01$), whereas in the non-sport participants group, the males scored higher on Physical Activity, Strength, Endurance ($p < .001$), Global Physical Self, Coordination, Sport Competence ($p < .01$), Appearance and Body Fat ($p < .05$) compared to the females.

DISCUSSION

The purpose of the study was to assess the physical self-concept of Slovenian adolescents in relation to gender and sports involvement by using the Physical Self-Description Questionnaire. The results showed that adolescents were influenced by these

variables; however, there was no interaction effect. This lack of significant interaction suggests that gender and sports involvement separately affect the domains of the physical self. The results revealed that male sport participants showed better scores on physical self-perception than other studied groups (female sport participants, male and female non-sport participants).

Adolescents who were engaged in regular sports activities outside of school hours exhibited higher levels of perceived sport competence and reported better physical abilities (coordination, endurance, strength, flexibility) compared to adolescents not engaged in regular sports activities. More frequent activity could mean more opportunities for the development of different motor abilities, which in turn leads to a more favorable perception of motor competences. The group of sport participants also reported greater global physical self and overall self-esteem than their peers not engaged in regular sports activities. These results were also confirmed when the comparison between sport participants and non-sport participants was made specifically for males and females.

The obtained results are comparable with similar studies, indicating that sport-involved adolescents of both genders provide more favorable physical self-perceptions, in particular in terms of perceived athletic competence and physical fitness compared to those not engaged in regular sports activities (Asçi, 2004; 2008; Malette et al., 2008; Moreno et al., 2008). Moreover, our findings are in line with past research, suggesting that physical activity allows the development of motor skill competence, which in turn is associated with an increase in self-esteem and confidence (Carraro et al., 2010; Haugen, Ommundsen & Seiler, 2013). However, it should be noted that some studies have also found differences in the fields of perceived physical appearance and body satisfaction in favor of sports active adolescents (Moreno et al., 2008), while these differences were not determined in the present study. Similarly, some research findings indicate that the physical appearance domain seems to be less closely related to sport participation (Esnaola, 2005).

On the basis of the existing literature, we can assume that the mechanisms that explain the relationship between physical activity and the physical self-concept are both physiological and psychosocial in nature. The former is related to changes in the components of physical condition (e.g. body composition, cardiorespiratory function), which occur after physical activity. Improvements in physiological functions should also lead to positive psychological outcomes, such as a more favorable self-perception in the physical domain, higher self-esteem and improved general well-being (Spence, McGannon, & Poon, 2005). Other explanations attribute a greater role to psychosocial mechanisms, which emphasize the importance of satisfying the needs for acceptance, belonging and self-affirmation. This includes the development of competence and social skills, self-regulation and self-control during sport participation as well as positive attitudes and expectations associated with exercise (Fox, 2000; Lindwall & Lindgren, 2005).

A basic question in determining the link between the physical self and sporting behavior is the direction of causality. The cross-sectional nature of our study does not allow us to identify causal relationships. Some contemporary studies confirm the reciprocal effect model which implies that the physical self-concept and physical activity are reciprocally related and mutually reinforcing (Marsh et al., 2006; Marsh, Papaioannou & Theodorakis, 2006). Regular and appropriate physical activity has the potential to enhance physical self-perceptions among adolescents, and vice versa, more favorable perceptions of one's physical abilities contribute to an increase in physical activity levels.

Numerous studies on adolescents have demonstrated gender differences in the physical self-concept, indicating that males have generally more favorable self-perceptions in the physical domain compared to females (Esnaola, Rodríguez & Goñi, 2010; Klomsten et al., 2004; Maiano et al., 2004; Moreno-Murcia, Hernández, Vaillo & Sicilia, 2010). In the present study, the males exhibited greater physical endurance and strength than did the females. They perceived themselves as more physically active and successful in sports compared to their female peers. The males were also more satisfied with their body and physical appearance than the females. However, they did not differ in perceived health, flexibility and overall self-esteem. Our results are largely consistent with previous studies that have assessed gender differences in physical self-perceptions among adolescents using the PSDQ questionnaire (Çağlar, 2009; Gadbois & Bowker, 2007; Klomsten et al., 2004). Gender differences are a reflection of both biological characteristics of males and females, as well as behavior patterns acquired through the socialization process and gender role development. We may assume that in some aspects of the physical self, boys have higher scores than girls because they actually achieve more favorable outcomes in these areas. For example, muscle mass is generally more developed in boys than in girls after puberty, especially in the upper part of the body. This in turn means that boys generally perform better on strength tests than girls (Malina, Bouchard & Bar-On, 2004). Thus, if boys show greater muscle strength, it is not surprising that they express higher scores in the component of physical self that refers to this specific ability. Nevertheless, research indicates that gender differences in the physical self-concept are usually greater than one would expect based on the biological characteristics of men and women. Thus, psychosocial determinants should also be considered. The social context through gender stereotyping can exert a major influence on gender differences in the physical self (Klomsten et al., 2004). Traditionally, sports have been considered a masculine domain, providing greater opportunities for males to develop physical abilities and motor skills and with these, improve their physical self to a greater extent than females (Colley, Berman & van Millingen, 2005). According to gender stereotypes, boys and girls adapt through socialization to different roles in the society and society has different expectations for them; while boys meet the social ideal of the athletic (muscular) body, girls are more concerned with the existing cultural standards of thinness and attractiveness in women. Research findings suggest that girls are more critical of their bodies, usually overestimate their physical dimensions and are more dissatisfied with their physical appearance compared to boys (Bowker, Gadbois, & Cornock, 2003). Some authors have demonstrated that individuals with a poor physical self are more vulnerable to the cultural pressures of a more slim body (Rodríguez-Fernández, González-Fernández & Goñi, 2013) and might be at a higher risk of developing eating disorders (Gondoli, Corning, Salafia, Bucchianeri & Fitzsimmons, 2011).

CONCLUSION

Based on the results of the present study, it can be concluded that sports participation is associated with a more positive physical self-concept and greater self-esteem among adolescents. The findings confirm the existence of gender differences in the physical self-concept in adolescents, but it should be emphasized that these differences are smaller in sport participants than in non-sport participants. Thus, gender differences in the physical self-concept tend to decrease with increased sports engagement.

Although our study provides insight into the multidimensional physical self-concept among Slovenian adolescents, it is necessary to be careful in making generalizations which extend to the whole population of adolescents, because the sample was restricted to students in urban areas. Thus, future studies should include participants from different living environments which would allow for a more accurate view of the physical self-perceptions among Slovenian adolescents. Finally, more longitudinal and intervention studies are needed to determine the causal link between physical self-perceptions and physical activity levels. Considering the numerous physical and psychological health benefits of sport and physical activity, additional research is needed to examine the nature of sports involvement and the physical self-concept relationship, so that sport can be successfully promoted among adolescents.

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FIZIČKI SELF-KONCEPT SLOVENSКИH ADOLESCENATA: RAZLIKE PREMA POLU I BAVLJENJU SPORTOM

Cilj ovog rada bio je ispitati višedimenzionalni fizički self-koncept kod adolescenata i adolescentkinja u zavisnosti od bavljenja sportom. U istraživanju je učestvovalo ukupno 320 ispitanika uzrasta od 13 do 18 godine. Primenjena je bila slovenska verzija upitnika za procenu karakteristika fizičkog self-koncepta (Physical Self-Description Questionnaire – PSDQ).

Rezultati multivarijatne analize variance ukazuju da adolescenti koji se bave sportom imaju značajno veće rezultate kod većine ispitivanih subskala upitnika PSDQ u odnosu na adolescente koji se ne bave sportom. Stoga možemo zaključiti, da redovito bavljenje sportom pozitivno utiče na pojedine aspekte fizičkog self-koncepta kao i na opšte samovrednovanje adolescenata i adolescentkinja. Takođe smo kod ispitanika utvrdili postoj polnih razlika u fizičkom self-konceptu, ali su razlike bile izraženije u grupi nespportista. Dobijeni rezultati potiču refleksiju o važnosti efikasnih sportskih programa i fizičkog vaspitanja u školama u cilju promovisanja zdravog i aktivnog načina života mladih.

Ključne reči: fizički self-koncept, adolescenti, polna pripadnost, sport.