Validity and Reliability of the Very Short Form of the Physical Self-Inventory among Turkish Adolescents

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Abstract

The study aimed to test the validity and reliability of the Very Short form of the Physical Self-Inventory (PSI-VS) among a sample of 635 Turkish adolescents. These adolescents have completed the 12 original items of the PSI-VS, plus a positively worded reformulation of the single reverse-keyed item of the physical attractiveness (PA) subscale. A series of confirmatory factor analyses was used to examine the psychometric properties of the original and modified versions of the PSI-VS. Findings revealed superior psychometric properties with the modified version than with the original set of items. The modified version was thus subsequently used to examine its factor structure invariance across sexes, age groups, and sport practice involvement. Results not only report that this version was fully invariant across, but also that latent means were significantly different across sexes and sport practice involvement. In sum, the Turkish modified version of the PSI-VS presents acceptable psychometric properties and may be used to repeatedly and/or intensively assess participants' physical self-perceptions in the context of sport and exercise interventions.

Key words: age; sex; measurement invariance; PSI-VS; Turkish.

In sports and exercise research, physical self-perceptions is often considered as a key variable to consider (for recent reviews see Kipp & Weiss, 2013; Lindwall & Aşçı, 2014). To understand the development of these self-perceptions, or the way that they unfold as a result of sport and exercise participation, longitudinal research is often particularly useful. However, longitudinal research is costly and invasive for participants, making it particularly useful to be able to rely on short validated measures which impose a lesser burden on participants and allow for the inclusion of additional measures. To date, the shortest available instrument that has been validated to assess physical self-perceptions is the very short form of the Physical Self-Inventory (PSI-VS; Maïano et al., 2008).

The PSI-VS was designed to overcome some of the limitations of the most commonly used measures of multidimensional self-perceptions, namely (for a review, see Marsh & Cheng, 2012), the Physical Self-Perception Profile (PSPP; Fox & Corbin 1989) and the Physical Self-Description Questionnaire (PSDQ, Marsh, Richards, Johnson, Roche, & Tremayne, 1994). More precisely, the appropriateness of the PSPP has been called into question due to its complex structured alternative response scale which, combined with the reliance on a mixture of negatively- and positively-worded items, makes it harder to properly differentiate self-concepts components (Marsh & Cheng, 2012). Although the PSDQ appears free from these concerns, its length (70 items, or 40 for the short version), makes it impractical for large-scale studies in which short instruments provide a way to maximize return on investments by maximizing the amount of information collected.

The initial Physical Self Inventory (PSI) was developed from the PSPP by Ninot, Delignieres, and Fortes (2000) as a way to address some of these limitations. In doing so, they replaced the PSPP response format by a more typical 6-point Likert scale (1 = not at all, 2 = very little, 3 = some, 4 = enough, 5 = a lot, 6 = entirely), and replaced the Physical Self-Worth and Global Self-Worth scales by items respectively taken from the Self-Description Questionnaire-III (Marsh & O'Neill, 1984) and the Coopersmith's (1967) Self-Esteem Inventory. Starting from Ninot et al.'s (2000) PSI, Maiano et al. (2008) developed a short (PSI-S; 18 items) and very short (PSI-VS; 12 items) versions of PSI.

The PSI-VS, which is the focus of the present study, comprises 12 items, grouped into six two-items subscales designed to assess: global self-worth, physical self-worth, physical condition, sport competence, physical attractiveness, and physical strength. Each of these items are rated using a six-point Likert scale ranging from 1 (*Not at all*) to 6 (*Entirely*). This questionnaire has been respectively validated and cross-validated by Maïano et al. (2008) and Morin and Maïano (2011) among samples of French adolescents. These studies have provided support for the factor validity, reliability, measurement invariance, and convergent validity of the PSI-VS among French adolescents. However, to date, only two studies have examined the extent to which the psychometric properties (i.e., factor validity and reliability, measurement invariance, etc.) of the PSI-VS generalized to languages other than French.

In the first of these studies, Scalas, Morin, Maïano, and Fadda (2013) examined the psychometric properties of an Italian version of the PSI-VS among a sample of 1121 adolescents and young adults. Their results supported the factor validity and measurement invariance of the PSI-VS across sexes (showing that boys present higher scores on most subscales relative to girls) and sport involvement (showing that adolescents involved in sports tended to present higher scores on most subscales compared to adolescents who do not

practice sports). In addition, the scale score reliability of the various subscales was acceptable (ω_{range} = .68 to .91), except for the physical attractiveness subscale (ω = .52). According to these researchers, this result could be related to the single reverse-keyed item of the physical attractiveness subscale (*Nobody finds me good-looking*).

In the second study, Maïano, Morin, and Probst (2015) examined the psychometric properties of a Dutch version of the PSI-VS among 1115 Flemish adolescents. Results from this study supported the factor validity of the PSI-VS, and showed that most of the subscale score reliability coefficients were acceptable (ω_{range} = .67 to .89), except for the physical attractiveness subscale (ω = .45). The modest reliability of the physical attractiveness subscale was again attributed to the reverse-keyed item that appeared "suboptimal and seriously penalized the reliability of the scale" (Maïano et al., 2015, p. 38). Therefore, due to the potential shortcomings of this item, Maïano et al. (2015) also examined a modified version of the PSI-VS comprising a positively worded (*Everybody thinks that I am good-looking*) replacement for this reverse-keyed physical attractiveness item. Findings from this study revealed that this modification greatly improved the reliability of the physical attractiveness subscale (ω = .72), and that this modified version was fully invariant across sexes, age groups, and body mass index (BMI) categories.

In the past, similar problems with negatively worded items have been highlighted by Lindwall, Aşçı and Hagger (2011), and Aşçı, Fletcher and Çağlar (2009) in relation with the Physical Self-Perception Profile (PSPP; Fox & Corbin, 1989) and the Physical Self-Description Questionnaire (PSDQ; Marsh, Richards, Johnson, Roche, & Tremayne, 1994), respectively. The suboptimal functioning of negatively worded items, led Lindwall et al. (2011) to develop an alternative version of the PSPP with positively worded items only. Consequently, as suggested by Maïano et al. (2015), it is "probable that this kind of item, more specifically when used to assess physical attractiveness, may be more reactive to language, culture, or social desirability." (p. 35). Language and culture indeed appear to represent key variables to consider in order to fully explain inter-individual variability in cognitions, affect, and behavior in psychological theories of sport and exercise (Duda & Allison, 1990; Duda & Hayashi, 1998). Indeed, Duda and Allison (1990) noted that scientific inquiry in the area of sport and exercise psychology requires the incorporation of cross-linguistic or cultural analyses in order to avoid the development of culture-specific theories that fails to be generalizable.

Similarly, examining the psychometrics of the PSI-VS among new linguistic and cultural groups will contribute to increase the normative data available for the PSI-VS scales and provide information on the applicability, utility and generalisability of the instrument to new populations. The extent to which psychometric measures are replicable and generalizable to new cultural or linguistic groups not only provide evidence supporting the universality of the construct across cultural groups, but also makes it possible to conduct more rigorous cross-cultural studies.

In this respect, the present study extends previous research on the psychometric properties of PSI-VS to yet another language, focusing on its Turkish version. More specifically, the first objective was to examine the factor validity and reliability of the original PSI-VS among a sample of Turkish adolescents. Additionally, as recommended in recent studies of the PSI-VS (Maïano et al., 2015; Scalas et al., 2013), the second objective

was to examine the psychometric properties of a modified version of the PSI-VS comprising a positively worded reformulation of the reverse-keyed item of the physical attractiveness subscale. Finally, the best PSI-VS version (original or modified) was used to examine its factor structure invariance across sexes, age groups (early *vs.* late adolescence), and sport practice involvement (involved *vs.* not involved).

Method

Participants and procedures

Three middle schools and three high schools located in Ankara agreed to participate in this study, leading to the recruitment of 635 Turkish adolescents (aged 12-19 years; M_{age} = 14.97 years, SD_{age}= 1.66). Of these participants: (a) 337 were boys and 298 were girls, (b) 249 were early adolescents (12-14 years), and 386 were late adolescents (15-19 years); and (c) 274 practiced sport in a club or in a school team and 361 did not practice sport. The permission to conduct the study was obtained from the ministry of education and met the ethical requirements for research with human participants in Turkey. Only adolescents who returned the consent forms signed by themselves and their parents participated in the study. All participants anonymously completed the PSI-VS during a physical education lesson.

Measures

Demographics. Participants completed a questionnaire in which they were asked to indicate their age, sex, and whether (or not) they participate in regular or organized sport activities after school. Each adolescent who answered "*yes*" was asked to report year, type and level (club or school team) of participation.

PSI-VS. A standardized back-translation procedure (Hambleton & Kanjee, 1995) was used to translate the PSI-VS into Turkish. The original items were translated into Turkish separately by three bilingual researchers. Thereafter, translation discrepancies between the three translated forms were discussed in order to develop an initial Turkish version of the inventory. An additional bilingual translator not involved in the first steps then back-translated this initial Turkish version to the original language. The back-translated version was then compared with the original version and any inconsistencies, errors, biases and incongruences highlighted. These inconsistencies were removed in a further translation and the back-translation comparison process was repeated until the versions were identical. The final versions exhibited no discrepancies with the original PSI-VS when back-translated. As an additional check, the translated instruments were independently reviewed by the jurors to confirm whether each item served the purpose of the instrument.

This translation comprises the 12 original items, plus the new positively-worded physical attractiveness item (see the Appendix for a complete list of items). This questionnaire covers the same six subscales as the original PSI-VS and each item is rated using a six-point Likert scale ranging from 1 (*Not at all*) to 6 (*Entirely*). In this study, the original PSI-VS version refers to the original set of 12 items (with a negatively-worded item of physical attractiveness), and the modified version refers to a 12-item PSI-VS version exclusively composed of positively-worded items.

Data analyses

Analyses were conducted using Mplus 7.2 (Muthén & Muthén, 2014) robust maximum likelihood (MLR) estimator, together with a full-information maximum likelihood

(FIML) procedure to handle the very small amounts of missing data present at the item level ($M_{missing}$ =0.2%). First, the six-factor structure of the original version of the PSI-VS was examined with a confirmatory factor analytic (CFA) model (Model 1-1). As suggested by Morin and Maïano (2011) a second model (Model 1-2) using essentially tau-equivalent constraints (ETECs) was used to achieve the local identification of each factors. ETEC simply involve constraining the loadings of both indicators associated with each factor to be equal to one another, and thus tests whether both items can be considered to be equivalent indicators of the underlying factor. Finally, the same CFA models (1-3 to 1-5) were used with the modified version of the PSI-VS.

The measurement invariance of the PSI-VS was examined across sexes (Models 2-1 to 2-8), early and late adolescents (Models 3-1 to 3-7), and youth involved or not in sport activities (Models 4-1 to 4-7). These invariance tests were performed in the following sequence (Morin & Maïano, 2011): (a) configural invariance without ETECs, (b) loadings invariance without ETECs, (c) loadings invariance with ETECs; (d) intercepts invariance, (e) uniquenesses invariance, (f) variances-covariances invariance, and (g) latent means invariances. In each step, the preceding model served as a referent.

Assessment of model fit was based on multiple indicators (Hu & Bentler, 1999; Marsh, Hau, & Grayson, 2005): the chi-square (χ^2) test of exact fit, the comparative fit index (CFI > .90 or > .95), the Tucker-Lewis index (TLI > .90 or > .95), the root mean square error of approximation (RMSEA < .08 or < .06). Following Chen (2007) and Cheung and Rensvold's (2002), the measurement invariance was evaluated by examining robust χ^2 difference test ($\Delta R\chi^2$; Satorra, 2000) and changes in CFIs ($\leq$ .01) and RMSEAs ($\leq$ .015). Finally, the McDonald's (1970) omega (ω) was used to estimate composite reliability.

Results

Factor Validity and Reliability

Results from the CFA measurement models are reported in Table I. First, the CFA models with and without ETEC (Models 1-1 and 1-2) estimated on the original version of the PSI-VS resulted in an unsatisfactory fit to the data (CFI and/or TLI < .90, RMSEA > .08). Conversely, the model based on the modified PSI-VS version showed a satisfactory fit to the data (CFI-TLI > .95; RMSEA < .06). However, the CFA using ETECs resulted in a large decrease in goodness of fit indices (ΔCFI of -.021). Modification indices revealed that ETEC should be relaxed for the PS subscale, suggesting that both PS items cannot be considered to be equivalent indicators of the PS factor. This model was thus re-examined while relaxing the ETEC on the PS factor (Model 1-5), and the results revealed a negligible decrease in fit (ΔCFI of .006) when compared to the model without ETEC. The standardized results from the modified PSI-VS model (with partial ETECs) are presented in Table II. They reveal that all loadings are substantial and significant and that the scale score reliability coefficients are modest to acceptable (ω = .51 to .71). Additionally, the analyses of the latent factor correlations are significant and elevated (r = .39-.98).

Measurement Invariance of the Modified Version of the PSI-VS

Tests of measurement invariance were conducted on the modified PSI-VS across sexes (Models 2-1 to 2-8), age groups (Models 3-1 to 3-7) and sport involvement groups (Models 4-1 to 4-7). Results from the invariance tests conducted across sexes showed that:(a) all of the χ^2 and $\Delta R\chi^2$ were significant (except for the configural invariance test, model 2-1);

(b) the CFI, TLI, and RMSEA indicated adequate model fit at all steps; (c) the ΔRMSEA remained under .015, except for latent mean invariance (Model 2-8); and (d) the ΔCFI and ΔTLI never exceeded .01, except for the models of latent variance-covariance (2-6) and latent mean (Model 2-8) invariance. Further probing for the lack of invariance of the latent variance-covariance showed weaker associations between PA and PS in the female group than in the male group (Model 2.7). In regard to latent mean differences, results revealed that when females' latent means are fixed to zero for identification purposes, males' latent means (expressed in SD units) were significantly ($p \leq .01$) higher on the PC (.66), SC (.47), and PS (.90) subscales. The modified PSI-VS is thus strictly (i.e., loadings, intercepts, and uniquensses) invariant across sexes, but presents some meaningful differences across sexes related to the strength of association between factors and latent means.

The measurement invariance tests conducted across age groups and sport involvement categories were very similar and showed that (a) all of the χ^2 were significant and most of the $\Delta R\chi^2$ were significant; (b) the CFI, TLI and RMSEA indicated adequate model fit at all steps; (c) the ΔRMSEA never showed an increase greater than .015, except for latent mean invariance across sport categories (Model 4-7); and (d) the ΔCFI and ΔTLI never showed a decrease greater than .01, except for latent mean invariance across sport categories (Model 4-7). These results thus confirm the full measurement invariance (i.e., loadings, intercepts, uniquensses, and latent variances-covariances) of the modified PSI-VS across age groups and sport involvement categories, but also revealed significant latent mean differences between adolescents involved or not in extracurricular sports. The results showed that when the latent means of adolescents not involved in sports are fixed to zero for identification purposes, adolescents involved in sports were significantly ($p \leq .01$) higher on the GSW (.36), PSW (.58), PC (.96), SC (.88), PA (.39), and PS (.67) subscales.

Discussion

This study assessed the factor validity and reliability of the original PSI-VS and of a modified PSI-VS version comprising a positively worded items, among a sample of Turkish adolescents. Our results showed that the original PSI-VS did not provide an adequate level of fit to the data among Turkish adolescents. However, subsequent analyses revealed that the modified version (including a positively worded reformulation of the single reverse-keyed item of the PA scale) provided an adequate level of fit to the data. This result is consistent with recent studies (Maïano et al., 2015; Scalas et al., 2013) showing that the negatively-worded item of the PA subscale scale may be problematic in other language or culture.

Additionally, the composite reliability of the modified PSI-VS version was found to be reasonable in light of the limited number of items per subscale (ω = .65-.71). However, the composite reliability of the GSW subscale was modest (ω = .51), which may be explained by the suboptimal performance (λ = .495; δ = .755) of the second item ("I would like to stay as I am"). This finding is consistent with recent results obtained with the GSW dimension from the short version of the PSDQ (Maïano, Morin, & Mascret, 2015; Martin &Whalen, 2013; Papaioannou et al., 2013), and suggests that the Turkish version of this item may need to be targeted for re-assessment. In the meantime, this subscale should be used with caution.

Moreover, most latent factor correlations are quite high and mostly consistent with previous results obtained with the PSI-VS (Morin & Maïano, 2011; Maïano et al., 2015; Scalas et al., 2013). These high correlations between the PSI-VS subscales may be attributed

to the lower number of items used to cover six physical self-dimensions (Marsh, Aşçı & Marco, 2002) and to "… the highly restrictive independent cluster model (ICM) typically used in CFA studies in which each item is allowed to load on one factor and all non-target loadings are constrained to be zero" (Marsh et al., 2009, p. 440). In order to deal with these inflated latent factor correlations, Marsh et al. (e.g., Marsh, Morin, Parker, & Kaur, 2014; Morin, Marsh, & Nagengast, 2013) have suggested relying on exploratory structural equation modeling (ESEM). However, these models cannot be estimated with only two indicators per factor (Morin et al., 2013).

Another important finding was the strong support for the strict invariance (i.e., loadings, intercepts, and uniquenesses) of the modified Turkish PSI-VS version across sex, age, and sport involvement groups. These results are consistent with those from recent cross-linguistic validation studies of the PSI-VS among Dutch and Italian adolescents (Maïano et al., 2015; Scalas et al., 2013) and support the cross-linguistic generalizability of the measurement invariance of the PSI-VS across various subgroups of adolescents.

Subsequent analyses revealed significant latent mean differences across sexes and sport involvement groups. More specifically, our results showed that boys and adolescents involved in extracurricular sport practice tended to present higher levels on most physical self-concept dimensions than girls and adolescents not involved in extracurricular sport practice. These results are mostly consistent with those reported from previous of mean-level differences on the PSI-VS (Maïano et al., 2008; Morin & Maïano, 2011; Scalas et al., 2013) or other physical self-concept instruments (e.g., Hagger, Biddle, & Wang, 2005; Marsh, Hey, Roche, & Perry, 1997; Marsh, Martin & Jackson, 2010). Nevertheless, no significant latent mean differences were observed across age groups. This finding is consistent with recent studies of the PSI-VS (Morin & Maïano, 2011; Maïano et al., 2015) and of the French short form of the PSDQ (Maïano, Morin, & Mascret, 2015).

In conclusion, the Turkish modified version of the PSI-VS presents acceptable psychometric properties and can be used to assess adolescents' physical self-perceptions in the context of in-depth idiographic studies. In particular, the key contribution of the present study has been to develop a Turkish version of the PSI-VS, and to demonstrate its factor validity, and measurement invariance across subgroups of male and female early and late adolescents involved or not in sport practice. As such, researchers and practitioners can confidently use this questionnaire to assess the physical self-conceptions of Turkish adolescents in the context of comprehensive or interventional research. However, the present investigation also has limitations that need to be addressed in future research. Indeed, the next step in the evaluation of the Turkish modified version of the PSI-VS would be to verify its test-retest reliability, as well as its convergent, concurrent, and discriminant validity among yet more diversified ethnic, linguistic, and cultural groups.

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Table I

Goodness-of-Fit Statistics of Confirmatory Factor Analytic (CFA) Models for the PSI-VS

Models	PSI-VS Version	Description	$\chi^2(df)$	CFI	TLI	RMSEA	90% CI	CM	$\Delta R\chi^2(df)$	ΔCFI	ΔTLI	ΔRMSEA
CFA	Original	1-1. CFA without ETEC	180.625(39)**	.934	.888	.076	.065-.087	-	-	-	-	-
		1-2. CFA with ETEC	312.372(45)**	.875	.816	.097	.087-.107	1-1.	131.59(6)	-.059	-.072	+.021
	Modified	1-3. CFA without ETEC	99.677 (39)**	.973	.955	.049	.038-.062	-	-			
		1-4. CFA with ETEC	153.314 (45)**	.952	.930	.062	.051-.072	1-3.	56.38** (6)	-.021	-.025	+.013
		1-5. CFA with partial ETEC	118.797 (44)**	.967	.951	.052	.041-.063	1-4.	19.34** (5)	-.006	-.004	+.003
CFA:sex	Modified	2-1. Configural invariance without ETEC	146.810 (78)**	.970	.948	.053	.039-.066	-	-	-	-	-
		2-2. λ invariant without ETEC	151.578 (84)**	.970	.953	.050	.037-.063	2-1.	4.44 (6)	.000	+.005	-.003
		2-3 λ invariant with partial ETEC	176.409 (89)**	.961	.943	.056	.043-.068	2-2.	26.01 (5)**	-.009	-.010	+.006
		2-4. λ, τs invariant	193.052 (95)**	.957	.940	.057	.045-.069	2-3.	17.04 (6)**	-.004	-.003	+.001
		2-5. λ, τs, δs invariant	214.723 (107)**	.952	.941	.056	.045-.067	2-4.	21.96 (12)*	-.005	+.001	-.001
		2-6. λ, τs, δs, ξ/φ invariant	264.554 (128)**	.940	.938	.058	.048-.068	2-5.	50.01 (21)**	-.012	-.003	+.002
		2-7. λ, τs, δs, $\xi/\varphi_{(\varphi \text{ PS-PA free})}$ invariant	249.085 (127)**	.946	.944	.055	.045-.065	2-5.	34.26 (20)*	-.006	+.003	-.001
		2-8. λ, τs, δs, ξ/φ, ηs invariant	363.778 (133)**	.898	.899	.074	.065-.083	2-7.	123.76 (6)**	-.048	-.045	+.019
CFA: age groups	Modified	3-1. Configural invariance without ETEC	129.432 (78)**	.977	.961	.046	.031-.059	-	-	-	-	-
		3-2. λ invariant without ETEC	138.213 (84)**	.976	.962	.045	.031-.058	3-1.	8.64 (6)	-.001	+.001	-.001
		3-3. λ invariant with partial ETEC	156.109 (89)**	.970	.956	.049	.036-.061	3-2.	18.07 (5)**	-.006	-.006	+.004
		3-4. λ, τs invariant	168.138 (95)**	.968	.955	.049	.037-.061	3-3.	12.25 (6)	-.002	-.001	.000
		3-5. λ, τs, δs invariant	182.465 (107)**	.967	.959	.047	.035-.059	3-4.	14.99 (12)	-.001	+.004	-.002
		3-6. λ, τs, δs, ξ/φ invariant	221.052 (128)**	.959	.958	.048	.037-.058	3-5.	38.75 (21)*	-.008	-.001	+.001
		3-7. λ, τs, δs, ξ/φ, ηs invariant	247.260 (134)**	.950	.951	.052	.041-.062	3-6.	27.83 (6)**	-.009	-.007	+.004
CFA:sport involvement	Modified	4-1. Configural invariance without ETEC	139.362 (78)**	.970	.950	.050	.036-.063	-	-	-	-	-
		4-2. λ invariant without ETEC	148.649 (84)**	.969	.951	.049	.036-.062	4-1.	9.26 (6)	-.001	+.001	-.001
		4-3. λ invariant with partial ETEC	157.882 (89)**	.967	.951	.049	.037-.062	4-2.	9.26 (5)	-.002	.000	.000
		4-4. λ, τs invariant	180.610 (95)**	.959	.943	.053	.041-.065	4-3.	24.09 (6)**	-.008	-.008	+.004
		4-5. λ, τs, δs invariant	201.053 (107)**	.955	.944	.053	.041-.064	4-4.	20.70 (12)	-.004	+.001	.000
		4-6. λ, τs, δs, ξ/φ invariant	235.225 (128)**	.948	.947	.051	.041-.062	4-5.	34.07 (21)*	-.007	+.003	-.002
		4-7. λ, τs, δs, ξ/φ, ηs invariant	325.158 (134)**	.908	.909	.067	.058-.076	4-6.	99.29 (6)**	-.040	-.038	+.015

Note. χ^2 = chi-square; *df* = degrees of freedom; CFI = comparative fit index; TLI = Tucker-Lewis index; RMSEA = root mean square error of approximation; 90% CI = 90% confidence interval of the RMSEA; ETEC = essentially tau-equivalent constraints;λ = loading; τ = intercept; δ = uniquenesses; ξ = variance; φ = covariance; η = factor means;PA = Physical Attractiveness; PS = Physical Strength;CM = comparison model; $\Delta R\chi^2$ = Robust chi-square difference tests (calculated from loglikelihoods for greater precision); Δ = change from previous model.* $p < .05$,** $p < .01$.

Table 2.

Standardized Parameters Estimates from the Confirmatory Factor Analytic Modelof the Modified version of the PSI-VS

Items	GSW (λ)	PSW (λ)	PC (λ)	SC (λ)	PA (λ)	PS (λ)	δ
GSW 1	.664						.560
GSW 2	.495						.755
PSW 1		.736					.458
PSW 2		.748					.441
PC 1			.751				.437
PC 2			.636				.596
SC 1				.732			.464
SC 2				.716			.487
PA 1					.748		.441
PA 2					.731		.465
PS 1						.625	.609
PS 2						.854	.271
ω	.51	.71	.65	.69	.71	.71	

Latent Factor Correlations

Factors	GSW	PSW	PC	SC	PA	PS
GSW	-					
PSW	.985	-				
PC	.628	.822	-			
SC	.671	.728	.958	-		
PA	.837	.675	.693	.739	-	
PS	.391	.571	.933	.720	.609	-

Note. λ = loading; δ = uniquenesses; ω = McDonald (1970) scale score reliability coefficient; CFA = confirmatory factor analyses; ETEC = essentially tau-equivalent constraints; GSW = Global Self-Worth; PSW = Physical Self-Worth; PC = Physical Condition; SC = Sport Competence; PA = Physical Attractiveness; PS = Physical Strength. All loadings, uniquenesses and correlations are significant at $p < .001$.

Appendix

Turkish, French,and English Back-Translated Items from the PSI-VS.

Items	Turkish Items	French Items	English Items
GSW1	Kendimle ilgili olumlu düşüncelere sahibim	J'ai une bonne opinion de moi-même	I have a good opinion of myself
PSW1	Fiziksel olarak yapabildiklerimle gurur duyarım	Globalement, je suis satisfait(e) de mes capacités physiques	Globally, I'm proud of what I can do physically
PS1	Birçok kişiden fiziksel olarak daha güçlüyüm	Je suis physiquement plus fort(e) que les autres	I'm physically stronger than most people
PSW2	Fiziksel olarak yapabildiklerimden ve kim olduğumdan memnunum/mutluyum	Je suis content(e) de ce que je peux faire physiquement	I am happy with who I am and what I can do physically
PC1	Fiziksel dayanıklılık gerektiren egzersizlerde iyi olabilirim	Je serais bon(ne) dans une épreuve d'endurance	I would be good at physical stamina exercises
PA1	Güzel görünen bir vücuda sahibim	J'ai un corps agréable à regarder	I have a nice body to look at
PS2	Kuvvet gerektiren egzersizlerde iyi olabilirim	Je serais bon(ne) dans une épreuve de force	I would be good at exercisesthat require strength
PC2	Yorulmadan uzun süre koşabileceğimi düşünürüm	Je pense pouvoir courir longtemps sans être fatigué(e)	I think I could run for a long time without tiring
SC1	Bütün sporlarda zorlukların üstesinden gelebilecek yolları bulabilirim	Je me débrouille bien dans tous les sports	I can find a way out of difficulties in all sports
PA2	Hiç kimse görünüşümü güzel bulmaz*	Personne ne me trouve beau(belle)*	Nobody find me good-looking*
PA2 reversed	Herkes güzel göründüğümü düşünür	Tout le monde me trouve beau(belle)	Everybody thinks that I am good-looking
SC2	Sporları iyi yaparım	Je réussis bien en sport	I do well in sports
GSW2	Kendim gibi kalmak isterim	Je voudrais rester comme je suis	I would like to stay as I am
Answer Scale	1- Hiç 2- Çok Az 3- Biraz 4- Yeterince 5- Çok 6- Tamamen	1-Pas du tout 2- Très peu 3- Un peu 4- Assez 5- Beaucoup 6- Tout à fait	1- Not at all 2- Very little 3- Some 4- Enough 5- A lot 6- Entirely

Note. * Negatively-worded; GSW = Global self-worth; PSW = Physical self-worth; PC = Physical condition; SC = Sport competence; PA = Physical attractiveness; PS = Physical strength; English items have not been validated yet and are only provide to help readers not familiar with French or Turkish to understand the meaning of each item.