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Revalidation Physical Self-Perceptions: A Cross-Cultural Assessment in Indonesian Children

Akhmad Sobarna¹, Ahmad Hamidi², Agus Ahmad Bunyami³, Asep Nirwan Muharam⁴, Denok Sunarsi⁵

 ¹ Physical Education, STKIP Pasundan, Indonesia Email: akhmadsobarna9@gmail.com
 ² Sport Science, Univesitas Pendidikan Indonesia, Indonesia, Email: ahmadhamidi@upi.edu
 ³ Physical Education, STKIP Pasundan, Indonesia, Email: denrony@gmail.com
 ⁴ Physical Education and Recreation, STKIP Pasundan, Indonesia, Email: sumbarahambali@gmail.com
 ⁵ Management, Pamulang University, Indonesia, Email: denoksunarsi@unpam.ac.id

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Abstract. The purposes of this research was to examined the cross-cultural validity of the Physical Self-Perception Profile for Children (PSPP-C), an instrument for assessing physical self-esteem, in Indonesian children. The inventory comprises 36-items designed to measure six constructs from a hypothesised multi-dimensional, hierarchical model of physical self-perception. Two hundred and fifty two children, aged 13 to 14 years, from a secondary school in Bandung- West Java completed the PSPP-C inventory. Descriptive statistics revealed mean construct scores to be comparable with results from other studies. Factor analysis of the inventory items supported a four factor structure and Cronbach alphas confirmed its internal consistency. The hierarchical structure of the underlying model was supported by partial correlation analysis. The PSPP-C exhibited satisfactory validity and reliability for use with children from Indonesia, but caution must be exercised when interpreting some of the subdomains due to discrepancies in the factor structure. The authors also express reservations concerning the indiscriminate use of such psychometric inventories across different cultures.

Keyword: Self-Perceptions; Cross-Cultural; Assessment; Indonesian Children

INTRODUCTION

Self-esteem or self-worth, the 'awareness of good possessed by oneself (Campbell, 1984), arid self-perception, the multi-faceted way a person 'sees' themselves derived from social and visual cues (Fox, 1990), have been shown to be influential variables on mental well-being and behaviour (Harter, 1990). For example, recent research concerning the dieting/eating habits of children and adolescents has raised concerns over the role of self-concept in motivating young people to adversely alter their dieting behaviour (French et al., 1995). These behavioural disorders may be manifestations of abnormalities in a person's physical self perception and self esteem. Given the obvious importance of self-perceptions, there has been a proliferation of research into the structure of a person's self-concept and selfesteem and into the relationship of these variables with behaviour (Campbell, 1984; Harter, 1978; Marsh, 1990).

Specifically, physical self-perceptions and self-esteem have often been associated with people's health behaviours including physical activity (Ferguson et al., 1989; Fox, 1994). Moreover recent research has highlighted the importance of self-perceptions related to the selection, adoption and adherence to physical activities (Page et al., 1993; Fox, 1990). However, in order to quantify and evaluate the physical self-esteem-physical activity behaviour relationship, researchers have had to establish valid and reliable instruments for assessing physical self-esteem and self-concept based on sound theoretical bases (Page et al., 1993). Early research in self-esteem suffered from theoretical over-simplicity. Early unidimensional models of self-esteem and its structure were measured by means of inventories. Assessment instruments using this approach, such as that by Coopersmith (1967), required respondents to rate themselves on perceived personal qualities, attributes and competencies in a wide range of situations and settings. The sum of these scores provided a graduated estimate of a person's global self-esteem. However, people tend to have different perceptions of themselves in different situations and settings (Sonstroem et al., 1992). The unidimensional approach did not take into account the relationship between the different items, the relative importance of each variable and any interaction between the variable items and therefore was not specific enough to produce a valid measure of selfesteem (Rosenberg, 1979).

Subsequent research redefined the approach in order to escape the limitations of the unidimensional theory. Current self-esteem theory identifies an organised, multifaceted and hierarchical structure of self-esteem. Shavelson et al. (1976) did much to define and standardise the structure of self-concept. They defined a broad, superordinate global self-worth concept at the apex of a hierarchical structure comprising several facets or subdomains. The global or apex level of the hierarchy has an implied relationship to the domain level which is in turn related to numerous subscales specific to each of the subdomains (figure 1). The arrangement and number of subordinate domains reflects the structure of self-concepts in specific populations and age groups. For example, in a white, middle class sample of children studied by Jersild (1952) the facets identified were school, social

acceptance, physical attractiveness and ability. This approach is attractive as it enables researchers to examine the organisation of selfesteem in a specific subdomain in relation to its subscales and global self-esteem (Fox, 1990).

The multifaceted, hierarchical approach was adopted by Harter (1978) in an examination of the development of self-concept in children and adolescents. Harter's (1978) model of selfchildren incorporated concept for five subdomains which are subordinate to a global measure of self-esteem: scholastic competence, athletic competence, peer social acceptance, behavioural conduct and physical appearance. The instrument designed to measure these aspects of self-esteem introduced a 'profile' approach to self-esteem measurement. This approach provides an empirical measure of selfesteem within the hierarchical, multifaceted approach and enables researchers to examine group differences among the subdomains, the structural relationships within the theory and the relationship between the subdomains and behaviour.

The recognition of the physical self as an important predictor of behaviour (Campbell, 1984) coupled with the recognised association between physical activity behaviour and good health (Blair, 1995) has resulted in an examination of the structure of self-esteem in the physical domain (Fox and Corbin, 1989). Using this hierarchical model of self-esteem, the examination of the physical domain has been conducted on numerous occasions in adults (Fox, 1990; Fox and Corbin, 1989; Page et al., 1993).

Fox and Corbin (1989) introduced an inventory to measure the structure of physical self-perceptions. Four subscales were identified through content analysis of a free-response questionnaire: Sports Competence, Physical Condition, Body Attractiveness and Physical Strength. Subsequently, an inventory was developed to measure these subscales with six items per subscale. The inventory was administered to several samples of college students and the scores subjected to principal components analysis with oblique rotation to establish factorial validity. The analysis revealed a robust structure confirming the existence of the four subscales in the physical domain. The resulting inventory, known as the Physical Self-Perception Profile (PSPP), following rigorous psychometric scrutiny revealed good internal consistency and test-retest reliability. The

profile also contained six items as a measure of global self-esteem derived from the Rosenberg Self-Esteem scales (Rosenberg, 1979). A further set of six items was also included in the inventory as a measure of general or global physical self-worth based on the physical domains conceptualised by Rosenberg (1979) and Harter (1985). Items from the global selfesteem and global physical self-worth batteries were intended to represent a hierarchical arrangement of self-esteem with global selfesteem at the apex level, physical self-worth at the domain level and the PSPP subscales at the subdomain level. As a consequence of this arrangement, the items for the global self-esteem and physical self-worth inventories avoided making any reference to the content of the subdomain items. Fox and Corbin (1989) showed the PSPP subdomains to have strong relationships with physical self-worth scores. Partial correlation analysis controlling for self-worth physical indicated reduced coefficients for all subscales with global selfesteem providing evidence for a three-tier hierarchical arrangement of global self-esteem, physical self-worth and the four subdomains.

The evidence which outlines the beneficial effects of physical activity participation on children's health (Sallis et al., 1994) and the possible role of exercise in controlling obesity (Bar-Or and Baranowski, 1994), has fostered recent interest in selfperception profiling in the physical domain (Biddle et al., 1993). Further, the recognition of increasing self-esteem as a major goal of physical education by government initiatives (Department of Education and Science, 1991) and researchers in physical education (Fox, 1992) coupled with the important role of perceived competence from surveys on sport participation (White and Coakley, 1986) has provided the catalyst for the development of inventories designed to measure physical selfperceptions and self-esteem in children (Whitehead and Corbin, 1988; Whitehead, 1995).

The PSPP has, for example, been adapted to study the structure of physical self perceptions of children Whitehead and Corbin (1988) used a modified version of the PSPP to examine global self-esteem, physical self-worth and the PSPP subscales' relationships in a sample of 12 to 13-year-old children in the United States of America. Psychometric analysis of the adapted instrument, the Physical SelfPerception Profile Children (PSPP-C), confirmed its factorial validity. Recent followup studies have reported similar structures in larger samples of 12 to 13-year-olds in the United States (Whitehead, 1991; 1995). A robust four-factor structure was found to be characteristic of the PSPP-C inventory and a significant amount of variance in physical selfworth was explained by the subscales replicating in children the findings of Fox and Corbin (1989).

Cross-cultural analysis of the PSPP with British adults has shown similar results to those in the United States (Page et al., 1993). However, in British children the factor structure of PSPP-C scores is more problematic. In a study of British 13 to 14-year-olds. Biddle et al. (1993) showed only partial support for the hypothesised factor structure. Factor analysis of the PSPP-C subdomains resulted in the extraction of more than four factors, multiple loadings across factors and loadings on unintended factors suggesting that children were unable to differentiate between some of the The authors concluded subscales. that interaction between cultural and developmental factors may affect the structure and organisation of the PSPP subscales. Clearly it is important to examine the psychometric properties of the PSPP-C utilising appropriate representative samples before using the instrument for research in cultures beyond the U.S A.

Given the increasingly recognised importance of self-esteem and related. concepts as determinants of physical activity behaviour, the development and validation of instrumentation to measure these concepts becomes essential. The present study aims primarily to examine the psychometric properties of the PSPP-C in a representative sample of Indonesian children. Specifically, the present study involves an examination of the construct validity, internal reliability and hierarchical structure of the PSPP-C's variables. Secondly, Indonesian data will be compared with available British and American data.

METHOD

The sample comprised 252 children (118 boys and 134 girls) aged between 13 and 14 years from a secondary school in Bandung Indonesia. Parental consent was obtained prior to the commencement of the data collection.

The PSPP-C purports to examine four subdomains including sports competence (SPORT), body attractiveness (BODY), physical condition (CONDITION) and physical strength (STRENGTH) (Whitehead and Corbin, 1988). Six items are associated with each subdomain. The items designed to represent the whole spectrum of self-perceptions in each subdomain and therefore statements were formulated to measure self-perceptions in terms of product, process and perceived confidence (Fox and Corbin, 1989). For example, items for the body attractiveness subscale included "some kids feel they have a good looking body compared to others" (product), "some kids find it easy to keep their bodies in good shape" (process) and "some kids think that their bodies look good in just shorts and T-shirt" (perceived competence).

A further six items were included to measure to general physical self-worth (PSW) which represented a superordinate construct and presumed a hierarchical self-esteem structure with PSW at the domain level. PSW is derived from Harter's (1985) Self-Perception Profile for Children and includes items such as "some kids are proud of themselves physically", "some kids are happy with what they can do physically" and "some kids have a positive feeling about themselves physically". In addition, a six item battery was included adapted from Rosenberg's (1979) Self-Esteem scales to examine global self-esteem. The instrument subscales were translated into Indonesian by two independent translators; a professional philologist and a qualified sport and exercise psychologist, one of the co-authors of this paper.

A paired, forced choice format characterises the PSPP-C. Subjects have to decide which of the two statements is 'really true for me' or 'sort of true for me'. The scoring of the PSPP-C scales and global self-esteem is performed on a four point scale with a midpoint of 25. The scoring system is such that half the items used reversed scoring as a check on whether the respondents read the questions carefully. The instrument was administered using standard guidelines (Fox, 1990). The translated PSPP-C was administered to the Indonesian children by undergraduate students of the Lesgaft State Academy of Physical Culture in quiet classroom conditions under the supervisions of one of the co-authors of this article.

Descriptive statistics were calculated for the PSPP-C subscales, PSW and global selfesteem from the Indonesian boys and girls. A 2 x 6 (gender x PSPP-C variables) multivariate analysis of variance (MANOVA) was performed to examine the gender differences for global self-esteem, PSW and the PSPP-C subscales. Univariate follow-up tests were used to show which variables were responsible for the differences. To test for discrimination between boys and girls, stepwise discriminant analysis was computed using the four PSSP-C subdomain scores. The results of the analysis was used as a basis for determining whether the collapsing or segregation of data across gender was appropriate.

Comparison of subscale scores with data from other studies. A series of independent ttests for grouped data were calculated to test for differences between mean scores elicited in the present study for the global self-esteem, PSW and PSPP-C subdomain scores and those from previous studies.

Factorial validity. The factorial validity of the PSPP-C subscales was examined by exploratory factor analysis. The 24 items from the PSPP-C inventory were subjected to principal components analysis followed by both oblique (oblimin) and orthogonal (varimax) rotations of the resulting factors. Factor examined to correlations were examine associations between factors. Factors contributing to five percent or greater of the explained factor variance were considered significant.

Item-total correlations and internal reliability. The relative contribution of each of the items to the total subscale score was indicated by the Pearson product-moment correlation coefficient between the item score and the total subscale score excluding the item. The internal consistency of the PSPP-C subscales was measured by Cronbach alpha.

Relationships among variables. The structural arrangement of the variables measured by the PSPP-C was examined by partial correlation analysis. Partial correlation coefficients were computed between the PSPP-C subscales and global self-esteem with the effect of PSW statistically removed. Correlation coefficients among the individual subscales were also correlated with PSW partialled out.

Other relationships were examined using zeroorder Pearson correlation coefficients.

RESULTS AND DISCUSSION

Descriptive statistics for the four PSPP-C subdomains, Physical Self-Worth (PSW) and global self-esteem for boys and girls are reported in table 1 with additional data from studies on British children (Biddle et al., 1993) and North American children (Whitehead, 1995). The 2 x 6 (gender x PSPP-C variables) MANOVA showed a significant main effect for gender (Wilks' Lambda = 0.90, p<0.01). Univariate follow-up F-tests revealed that the

global self-esteem (F = 7.07, p<0.01), PSW (F = 7.36, p<0.01) variables were significantly higher in boys than in girls. Only the BODY variable showed no significant gender differences.

Comparison with other studies

The independent t-tests for grouped data revealed a number of significant differences in the global self-esteem, PSW and the PSPP-C subdomain scores between the present study and scores from Biddle et al. (1993) and Whitehead (1995). The differences are indicated in table 1.

 Table 1. Means and standard deviations for Global self-esteem, Physical self-worth and PSPP-C

subdomains for boys and girls from the present study, Biddle et al. (1993) and Whitehead (1995).

Indonesian data			Biddle etal.(1993)		Wh	Whitehead (1995)			
Subscale									
	Boys		Girls	s	Boys	Girls	Boy	S	Girls
	N=118		N=1	34	N=70	N=60	N=23	32	N=227
	Mean	SD	Mean	SD	Mean SD	Meari SD	Mean	SD	Mean SD
Global self-esteem	2.87*t	.64	2.66*t	.64	3.18.60	3.07 .63	3.18	.63	2.97 .72-
Physical self-worth	2.70*t	.45	2.54f	.47	3.09 M	2.76 .66	3.07	.61	2.85 .68
Body	2.43*	.59	2.41	.60	2.83 56	2.49 .62	2.68	.67	2.50 .75
Condition	2.95	.54	2.75	52	3.15 53	2.81 .61	2.94	.66	2.86 .68
Sport	2.96	.60	2.67	.59	3.07 .67	2.72 .58	3.01	.65	2.69 .70
Strength	2.69	.48	2.49	.41	2.88 .69	2.47 51	2.86	.65	2.59 .60

* Significantly different from Biddle et al. (1993) t Significantly different from Whitehead (1995) All differences significant atp < 0.05

Bearing in mind Fox's (1990) contention that self-perception analyses should be segregated by gender, the Indonesian data were subjected to stepwise multiple discriminant analysis to examine whether the PSPP-C inventory items were able to discriminate between the genders (table 2). The analysis revealed that the SPORT subdomain was the only significant discriminator between Indonesian boys and girls (Wilks* Lambda = 0.94, R, = 0.24, $x^2 = 14.83$, p<0.01). No other subdomains were entered into the analysis. A follow-up classification summary revealed that 61.5% of the cases were correctly classified including 66.9% of the boys and 56.7% of the girls. On the basis of this analysis and the

315 | Vol 6 No 3, December 2020

significant differences shown by the MANOVA, by gender. subsequent analyses were performed separately

	Structure Coefficients	Correctly clas	sified (%)
SPORT	1.00	Boys	66.9
CONDITION	.71	Girls	56.7
STRENGTH	.44	Overall	613
BODY	.42		

Table 2: Summary of discriminant analysis to classify boys and girls by the PSPP-C subdomains.

Exploratory factor analyses with oblique (oblimin) and orthogonal (varimax) rotations were utilized to examine the factor structure of the PSPP-C separately for boys and girls. Taking into account the assumption that the variables of the PSPP-C have a hierarchical structure and the super-ordinate nature of the PSW scale over the PSPP-C subscales, PSW was excluded from the analyses. Factor correlations were typically low to moderate in magnitude ranging from 0.07 to -052 in boys and from 0.06 to 0.35 in girls. However, due to some high correlation coefficients between the factors the orthogonal solution is reported so as to maintain the independence of the factors.

Four factors accounting for greater than 5% of the explained variance were extracted in the analysis of the boys' data (table 3). These four factors accounted for 56.0% of the variance $X^2 = 14.83, R_c = .24, p < .01$

provided limited support and for the hypothesized four-factor structure for boys. The factors relating to STRENGTH, SPORT, BODY and CONDITION accounted for 38.3%, 6.7%, 6.0% and 5.0% of the variance respectively. Some items did not load on the intended factors and a few items loaded on more than one factor. In particular, the CONDITION subscale was poorly represented and its items were divided between the STRENGTH and SPORT factors. Specifically, two items from the CONDITION subscale, items 7 and 17, had dominant loadings on the SPORT factor. Further, the fourth factor extracted had dominant loadings from two SPORT items, 6 and 26 and one from the CONDITION and appeared to be measuring a second SPORT factor.

Table 3: Rotated factor loadings for boys' PSPP-C items.

		-	Factor	
Scale, item numbers and item descriptions	1	2	3	4
STRENGTH				
4 Feel they are stronger than other kids their age	0.81			
9 Have stronger muscles than other kids their age	0.83			
14 First to step forward when strong muscles are needed				(-0.46)
19 Confident when it comes to strength activities	0.61			
24 Have good muscles compared to other kids their age	0.82			
29 Are among the best when physical strength is needed	0.72			
SPORT				
1 Do very well at all kinds of sports		0.65		
6 Feel they are good enough at sports			(0.42)	(0.61)
11 Think they could do well at any new sports activity		030		
16 Feel they are better than others their age at sports		031		
21 Usually play rather than watch in games and sports		0.61		

Sobarna, Hamidi, Bunyami, Muharam, Sunarsi. Revalidation Physical Self-Perceptions..... | 316

26 Are good at new outdoor games right away				
BODY				
3 Feel they have a good looking body compared to others kids			036	
8 Think it's easy to keep their bodies fit and in good shape			0.45	
13 Think their bodies look good in just shorts and T-shirt			032	
18 Feel they are often admired for their fit, good-looking bodies			0.68	
23 Feel their bodies look in great shape compared to others	(0.56)			(0.46)
28 Are happy about the appearance of their bodies			0.71	
CONDITION				
2 Feel they are always have excellent fitness	(038)	(0.47)		
7 Try and take part in energetic exercise whenever they can		(0.60)		
12 Always have lots of fitness and endurance				038
17 Feel confident when it comes to doing fitness exercises		(0.61)		
22 Feel confident about doing enough exercise to stay very fit				
27 Think that they can always do more exercise than other kids	(042)		((0.42)
Eigenvalue	92	1.6	1.5	1.2
^Variance	383	6.7	6.0	5.0
Cum.%Variance	373	45.0	51.0	56.0

Factor loadings below 0.4 were eliminated.

Table 4 reveals that the girls' data produced four factors explaining 562% of the variance. In descending order of importance, these included STRENGTH (33.3%), BODY (9.9%), SPORT (7.8%) and CONDITION (5.2%). All but two of the SPORT items loaded above 0.4 on at least one other factor and two items loaded on two other factors. Further, only items 7 and 22 received dominant loadings on the CONDITION factor, three of the others on the STRENGTH factor and one on the SPORT factor.

 Table 4: Rotated factor loadings for girls' PSPP-C items.

			Fa	ctor	
Sca	le, item numbers and item descriptions	1	2	3	4
STI	RENGTH				
4	Feel they are stronger than other kids their age	0.77			
9	Have stronger muscles than other kids theirage	0.77			
14	First to step forward when strong muscles areneeded	-0.59			
19	Confident when it comes to strength activities	059			
24	Have good muscles compared to other kids theirage	0.74			
29	Are among thebest when physical strength is needed	0.73			
SPO	ORT				
1	Do very well at all kinds of sports	(0.66)			(0.47)
6	Feel they are good enough at sports	(0.54)			
11	Think they could dowell at anynew sports activity			0.56	(0.41)
16	Feel they are better than others their age at sports	(0.60)			(Oil)
21 U	Usually play rather than watch in games and sports			0.76	
26	Are good at newoutdoor games right away			0.76	
BO	DY				
3	Feel they have a good looking body compared to others kids		0.75		
8	Think it's easy to keep their bodies fit and in good shape		057		

317 | Vol 6 No 3, December 2020

13 18	Think their bodies look good injust shorts and T-shirt Feel they are often admired for their fit, good-looking bodies		0.76 <i>011</i>		
23	Feel their bodies look in great shape compared to others	(0.46)	0.46		
28	Are happy about the appearance of their bodies	()	0.55		
со	NDITION				
2	Feel they are always have excellent fitness	(0.61)			0.49
7	Try and take part in energetic exercise whenever they can				0.71
12	Always have lots of fitness and endurance	(.054)			
17	Feel confident when it comes to doing fitness exercises		(0.68)		
22	Feel confident about doing enough exercise to stay very fit				0.75
27	Think that they can always do more exercise than other kids	(051)			0.43
Eig	envalue	8.0	2.4	1.9	12
^Va	riance	333	9.9	7.8	5.2
Cur	n.%Variance	333	43.2	51.0	56.2

Factor loadings below 0.4 were eliminated.

Item-total correlations and internal reliability. The Pearson correlation coefficients between the individual items for each subscale and the subscale total were in the moderate to high order (range, r = 0.60 to 0.87) with the exception of five items (item 7 (CONDITION), r = -0.55; item 8 (BODY), r = 0.53; item 14 (STRENGTH), r = -0.23; item 26 (SPORT), r = 0.54; item 30 (PSW), r = -0.55) for the boys and

three items (item 14, r = -0.34; item 25, r = 0.57; item 30, r = -0.34) for the girls which had itemtotal correlations of less than 0.60. Cronbach's alpha was used to examine the internal reliability of the PSPP-C subscales (table 5). Satisfactory reliability was evident for both the boys' and the girls' subscales with the exception of the BODY subdomain for both genders.

Table 5. Coefficient alphas for the PSPP-C subscales for boys and girls.

Subscale	Boys	Girls
PSW	0.39	0.45
BODY	0.65	0.49
CONDITION	0.70	0.76
SPORT	0.76	0.76
STRENGTH	0.78	0.76

Relationships among variables. Zeroorder correlation coefficients between the PSPP-C subscales, PSW and global self-esteem can be seen in table 6. The correlation coefficients between PSW and global self-esteem (r = 0.48, p<0.01 for boys and r = 0.38, p<0.01 for girls) were higher than those between the subscales and global self-esteem with the exception of the correlation coefficient between the SPORT subscale and global self-esteem for girls (r = 0.46, p<0.01). Further, the coefficients between the PSPP-C subscales and PSW were greater than the coefficients between the subscales and global self-esteem.

	for obj5 (mst me) and gms (second me).					
		1	2	3	4	5
1.	Global	0.48	0.42	0.34	0.41	0.24
		0.38	0.46	0.24	0.18	0.23
2.	Psw		0.67	0.67	0.61	0.41
			0.44	0.57	0.61	0.46
3.	Body			0.56	0.57	0.45
	2			0.35	0.29	0.34
4.	Condition				0.67	0.58
					0.74	0.40
5.	Sport					0.46
	5600					0.43
6.	Strength					
	All coefficients significant at p<0.01					

Table 6. Correlation matrix between Global self-esteem, Physical self-worth and PSPP-C subdomains for boys (first line) and girls (second line).

 Table 7. Zero-order and partial correlation coefficients between Global self-esteem and PSPP subdomains controlling for PSW in boys and girls.

		Boys	Girls	
	Zero	Partial	Zero	Partial
Psw	0.48*	-	0.38*	-
Body	0.42*	0.15	0.46*	0.35*
Condition	0.34*	0.02	0.24*	0.03
Sport	0.41*	0.17	0.18**	-0.08
Strength	0.24*	0.06	023*	0.07
•Significant at p<0.01				
** Significant at p<0.05				

The relationships between the PSPP-C subscale scores and global self-esteem was negated or greatly reduced when PSW was partialled out. Partial correlation analysis controlling for PSW revealed only one significant correlation coefficient between the PSPP-C subscales and global self-esteem (table 7). BODY correlated significantly with global self-esteem when PSW was statistically removed (r = 0.35, p<0.01). No other partial correlation coefficients were significant. The correlations among the subscales were also tested with PSW partialled out and the correlation matrix can be seen in table 8. The correlations were typically low and some were non-significant. The results of these analyses are summarised in figures 2 and 3.

 Table 8. Partial correlation coefficients among PSPP-C subdomains controlling for PSW for boys (first line) and girls (second line).

		1	2	3	4
1.	Body		0.19** 0.13	027* 0.04	0.25* 0.17 **
2.	Condition			0.45* 0.60*	0.44* 0.19**
3.	Sport				0.30* 0.21**
4.	Strength				

*Significant at p<0.01

**Significant at p<0.05

Discussion

The PSPP-C subdomain scores for the Indonesian sample were comparable with subdomain scores from other studies with children (Biddle et al., 1993; Whitehead, 1995). This was illustrated by the presence of few significant differences between the PSPP-C subdomain scores as indicated by the independent t-tests for grouped data. At the subdomain level, only the BODY subdomain was significantly higher in the boys from the Biddle et al. (1993) sample and there were no differences between the present results and the Whitehead study. There were, however, significant differences in the PSW and GSW subscales. These differences may be accounted for by firstly, the limited, unrepresentative nature of all the samples and, secondly, by the fact that both PSW and global self-esteem are 'general', superordinate constructs and may therefore be affected by external variables other than the subdomains from the PSPP-C. For example, while global self-esteem is related to PSW, the global measure has been shown to be affected by other domains such as academic, social and emotional self-concepts (Marsh and Shavelson, 1985).

Present results reveal that Indonesian boys exhibited higher scores than girls on the global self-esteem, PSW and all the PSPP-C subscales with the exception of the BODY subscale. Other researchers have found significant gender differences in physical selfperception scores for global self-esteem, PSW and all four PSPP subscales in studies on adults (Fox, 1990). In a study of four independent samples of adult American college students, Fox (1990)illustrated that females scored significantly lower than males in all subscales. Studies using the PSPP-C have shown gender differences for some or all of the variables from the PSPP-C. For example, Whitehead (1995) found that boys scores were significantly higher than those of girls in all but the BODY and CONDITION subscales. Biddle et al. (1993) found differences on all four subdomains but did not examine gender differences in global self-esteem and PSW. The reasons for the present gender differences in the PSPP-C subdomains are unclear, but provide evidence for the need to analyse the gender groups' data separately and for further research on the determinants of self-esteem for the two sexes.

Further evidence for the need to segregate the PSPP-C data sets by gender was provided by the discriminant analysis. The SPORT subscale was the only significant discriminatory variable in the analysis and accounted for the correct classification of 61.5% of the cases. The salience of the SPORT subdomain can be seen in the relative distances between the boys and girls mean scores for this subscale; it has the largest discrepancy and therefore encouraged the separate treatment of boys' and girls' data.

The factor analyses for the boys and girls confirmed a largely four factor structure accounting for 56.0% and 56.2% of the explained variance in the boys and girls respectively. In both boys and girls it seemed that the STRENGTH and BODY subscales were well represented in the analyses and appeared to have cross-cultural validity. However, in both analyses problems were experienced as to the structure of the SPORT and CONDITION subdomains. It may be that Indonesian boys and girls possibly find difficulty in differentiating between these constructs from the PSPP-C. In particular, both girls and boys experienced problems distinguishing in between CONDITION and SPORT.

For the boys analysis, CONDITION subscale items 7 ("some kids try to take part in energetic exercise whenever they can") and 17 ("some kids feel confident when it comes to doing fitness exercises") loaded exclusively and with high magnitude on the SPORT factor. Items 7 and 17 may have been misinterpreted as they are involved with the process of keeping in condition (i.e. *taking part* in physical activities) which could be confused with sports participation and competence. Further, the fourth factor extracted appeared to represent a SPORT factor. rather second than а CONDITION factor, with two of the SPORT items, namely items 6 ("some kids feel they are good enough at sports") and 26 ("some kids are good at new outdoor games") and one CONDITION item 12 ("Some kids always have lots of fitness and endurance") responsible for the dominant loadings. Again confusion may have arisen from an inability to differentiate between fitness and sports competence. A further two CONDITION subscale items cross loaded on both the SPORT and STRENGTH factors which may be attributable to three different causes (1) the children had difficulty in

distinguishing between these concepts (2) the items were poorly translated or (3) the items were not effective at measuring the CONDITION subscale.

The girls also appeared to find some the ambiguity between SPORT and subscales, STRENGTH the SPORT and CONDITION subscales and the CONDITION and STRENGTH subscales. Only three items, 11, 21 and 26, were efficacious at measuring the SPORT subscale while the others cross loaded on either the STRENGTH or CONDITION subscales. Further, only items 7 and 22 clearly represented the CONDITION factor. Three of the other items loaded on the SPORT factor and it seems the children may confuse fitness with sports ability and sports competence. Again, this may be a function of the translation from English to Indonesian.

Other studies have also found difficulty in identifying a clear factor structure for the PSPP-C inventory and corroborate the difficulties experienced with the factorial validity of the CONDITION subscale in the present study. A factor analysis of the PSPP-C instrument items by Whitehead and Corbin (1988) from data collected on seventh and eighth grade children (n = 139) identified reasonably clear SPORT and STRENGTH factors, a less clear BODY construct and no evidence for the existence of a CONDITION factor. In another study on 12 to 15-year-old children (n = 130), Biddle et al. (1993) exhibited clear SPORT and STRENGTH factors but more problematic CONDITION and BODY factors. Whitehead (1995) identified a clear four factor structure in a sample of seventh and eighth grade American children (n = 459) but there were, however, some cross loadings on some of the CONDITION subdomain items for boys and the SPORT subdomain for girls. Splitting of the loadings across two inappropriate factors did not occur in the Whitehead (1995) study as it did in the present study.

The item-total correlations provided an estimate of the relative contribution of each item to the total subscale score. In the present study all but eight item-total correlations ranged from 0.60 to 0.87 for both the boys and the girls samples which indicates that most items made a sufficient contribution to the overall subscale scores. However, one item per subdomain and one item from the PSW variable, a total of five items, for the boys and the three items, one each from the SPORT, STRENGTH and PSW subscales, for the girls exhibited correlation coefficients less than 0.60. This suggests that at least one item for all subscales for the boys and three subscales for the girls is suspect and contributes little to the overall subscale score. These items may have lost their relevance to the overall constructs in translation. Further examination and re-wording of these items in the development of future inventories is warranted to ensure adequate contribution of all items.

Internal reliability of the PSPP-C subscales in the Indonesian sample was satisfactory (Cronbach alpha range 0.70 to 0.78) for all subscales other than BODY for both genders. Alpha coefficients for BODY were 0.65 and 0.49 for boys and girls respectively. The coefficients in the present study were generally lower than those reported by other researchers in the United States (Fox, 1990; Fox and Corbin, 1989). However the coefficient range was similar to that reported by Whitehead (1995). Whitehead also found that the internal consistency for the SPORT subscale was questionable, with unsatisfactory alpha coefficients. Item-total correlations from the present study revealed that although one item for the BODY subscale in the boys did not contribute adequately to the overall score (item 8; r = 0.53), no single item could be seen as responsible for the low alpha coefficient. Further, no items from the BODY subscale from the girls exhibited unsatisfactory item-total correlations. Despite the problems with one subscale, the results indicate that the PSPP-C is a potentially reliable instrument for use with Indonesian children of this age group.

While the instrument exhibited adequate factorial validity to support a multifaceted (four factor) structure, the levels of the structure required confirmation and this was provided by partial correlation analysis and the correlation matrix of the subscales with PSW and global self-esteem. Fox (1990) lists four criteria in the confirmation of the hierarchical structure of the self-perception in children with global selfesteem at the apex level, PSW at the domain level and the subscales at the subdomain level. These criteria are that: (1) the relationship between PSW and global self-esteem is stronger than any of the relationships between the global self-esteem and the individual subscales; (2) the relationships between PSW and the individual subscales are stronger than the relationships between global self-esteem and the individual subscales; (3) the relationship between global self-esteem and the individual subscales is greatly diminished or negated all together when PSW is statistically removed from the analysis; and (4) the relationships between the individual subscales is significantly lower when PSW is statistically removed.

The results from the present study confirm that the PSPP-C subscales, the domain of PSW and the global self-esteem measure are arranged in a hierarchical structure. The partial correlation revealed that the relationships between the PSPP-C subscales and global selfesteem were substantially diminished when the mediating effect of PSW was removed. Further, correlation coefficients between the the subscales and global self-worth were lower than the coefficients between the subscales and PSW. This indicates that PSW is a mediating variable at the domain level below global self-esteem and above the subscales which are at the subdomain level. The subscales' independent nature and their relationship to PSW is indicated by the low correlation coefficients observed among the variables when the effect of PSW was partialled out.

The potential indiscriminate use of instruments to measure psychological constructs such as self-esteem across a variety of cultures clearly gives cause for concern. Some of the ideas, language and constructs used by these instruments may not be appropriate or relevant for usage in different cultures. The precise meaning of the words and constructs may be lost in translation to another language. For example, the term 'physical education' when directly translated into Indonesian has little meaning, the more appropriate term would be 'physical culture'. The term 'physical culture', on the other hand, has different connotations in English. Such differences may account for the variation in PSPP-C factor structures evident in the literature and may also account for the problematic factor structure identified in the present sample.

Detailed psychometric evaluation of psychological inventories across different cultures including self-perception instruments is clearly essential. Page et al. (1993) provided some evidence for the cross-cultural validity of the PSPP and indicated that the instrument can be successfully transferred for usage from a North American to a British culture. However, it is noteworthy that in this case both samples

involved English-speaking subjects from industrialised nations with relatively similar demographic and ideological characteristics (the United States and Great Britain). This is less true in the present study with subjects from a Indonesian culture which has numerous cultural differences including a crucial difference in language. Therefore, while Biddle and coworkers (1993) have provided preliminary normative data for the use of the PSPP-C instrument with British children, differences in the meaning of some constructs across cultures provides evidence supporting the need for the development of separate, culture-specific inventories. Such an approach, however, provides a clear limitation to the cross-cultural comparisons in physical self-perceptions which could be made as a result of the use of culturespecific inventories.

CONCLUSIONS AND SUGGESTIONS

Results from the present study reveal that the PSPP-C has considerable potential in determining the physical self-perceptions in Indonesian children. Results indicate that a four factor structure of self-perceptions, similar to those found in other countries, may exist among Indonesian children. Further, the instrument demonstrated a robust internal consistency and relationships among the variables supporting the hypothesized multidimensional, hierarchical structure. Reservations must, however, be expressed as to the exact nature of the four factor structure of physical self-perceptions in this sample. Specifically, the Condition subscale for each gender, particularly for the boys, was poorly defined. This factor exhibited some cross loadings on at least two different factors in the factor solution for the girls and there was little evidence for its existence in the boys' data. Possible solutions to these discrepancies could be gleaned from improvements in the sampling procedure, translation of the inventory items and construction of the inventory. There may be a need to derive the inventory items from a large, stratified, randomly selected which would sample be suitably representative of the population under investigation. Further, the use of back translation as a check on the adequacy of the translation may assist children from other culture, such as Russia, in their understanding of the subdomain concepts. It may however be necessary, in the first instance, to elicit items from the sample by means of an open ended questionnaire. These responses can then be subjected to content analysis to identify categories for the items which may not necessarily be identical to those found in the United States or Great Britain. Hence it is therefore recommended that further investigation into the structure and nature of physical selfperceptions in different culture is initiated from the open-response questionnaire stage. Clearly, the examination of physical selfperceptions in cultures beyond North America and the United Kingdom is a meaningful task since it will provide a clearer understanding of the dimensions children's underlying physical selfperceptions across different cultures.

REFERENCES

- Bar-Or, O. and Baranowski, T. (1994). Physical activity, adiposity and obesity among adolescents. Pediatric Exercise Science, 6: 348-360.
- Biddle, S., Page, A., Ashford, B., Jennings, D., Brooke, R. and Fox, K. (1993). Assessment of children's physical self-perceptions. International Journal of Adolescence and Youth, 4: 93-109.
- Blair, S.N. (1995). Exercise prescription for health. Quest, 47: 338-353.
- Campbell, R.N. (1984). The New Science: Self-Esteem Psychology. Lanham, MD, University Press of America.
- Coopersmith, S. (1967). The Antecedents of Self-Esteem. San Francisco, CA, W.H. Freeman.
- Department of Education and Science. (1991). Physical Education from 5 to 16. London, HMSO.

- Ferguson, K.J., Yesalis, C.E., Pomrehn, P.R. and Kirkpatrick, M.B. (1989). Attitudes, knowledge, and beliefs as predictors of exercise intent and behaviour in schoolchildren. Journal of School Health, 59: 112-115.
- Fox, K.R. (1990). The physical self-perception profile manual. PRN Monograph. DeKalb, II, Office for Health Promotion.
- Fox, K.R. (1992). Physical education and the development of self-esteem in children. In: N. Armstrong (Ed), New Directions in Physical Education: Vol. 2 Towards a National Curriculum. Champaign, EL, Human Kinetics, pp 33-54.
- Fox, K.R. (1994). Understanding young people and their decisions about physical activity. British Journal of Physical Education, 25: 15-19.
- Fox, K.R. and Corbin, C.B. (1989). The physical self-perception profile: Development and preliminary validation. Journal of Sport and Exercise Psychology, 11:408-430.
- French, S.A., Perry, C.L., Leon, G.R. and Fulkerson, JA . (1995). Changes in psychological variables and health behaviours by dieting status over a 3-year period in a cohort of adolescent females. Journal of Adolescent Health, 16: 438-447.
- Harter, S. (1978). Effectance motivation considered: Toward a developmental model. Human development, 1: 34-64.
- Harter, S. (1985). Manual for the Self-Perception Profile for Children. Denver, CO, University of Denver.
- Harter, S. (1990). Causes, correlates, and the functional role of global selfworth: A lifespan perspective. In

J. Kolligian and R. Sternberg (Eds), Perceptions of Competence and Incompetence Across the Lifespan. New Haven, CT, Yale University, pp 67-97.

- Jersild, A.T. (1952). In Search of Self. New York, NY, Teachers College Bureau of Publications.
- KD Yuangga, J Jasmani, D Sunarsi. (2017). The Influence of Technology Determinism and Technology Literacy on Student Learning Outcomes (On MA Daarul Hikmah Pamulang). PINISI Discretion Review 1 (1), 23-30
- Maddinsyah, Ali, et al (2020). Analysis of Location Selection Effect on the User Decision that Influcence the Success Of the Service Business of Micro, Small and Medium Enterprise (MSME) In Bandung Timur Region. International Journal of Advanced Science and Technology. Vol. 29 No. 06
- Marsh, H.W. (1990). A multidimensional, hierarchical self-concept: Theoretical and empirical justification. Educational Psychology Review, 2: 77-171.
- Marsh, H.W. and Shavelson, R. (1985). Selfconcept: Its multifaceted, hierarchical structure. Educational Psychologist, 20: 107-123.
- Rosenberg, M. (1979). Conceiving the Self. New York, NY, Basic.
- Sallis, J.F., Patrick, K. and Long, B. (1994). Overview of the international consensus conference on physical activity guidelines for adolescents. Pediatric Exercise Science, 6: 299-301.
- Shavelson, R.J., Hubner, J.J and Stanton, G.C. (1976). Self-concept: Validation of construct interpretations. Review of Educational Research, 46: 407-441.

- Sunarsi, D. (2016, October). Pengaruh Minat, Dan Kecerdasan Motivasi Kognitif Terhadap Prestasi Belajar (Studi Kasus Pada Mahasiswa Program Studi S-1 Manajemen. Fakultas Ekonomi. Universitas Pamulang. Thn. Akademik 2015-2016). In Proceedings (Vol. 1, No. 1).
- Sunarsi, D. (2016). Hubungan Pengendalian Diri dengan Prestasi Belajar.
- Sonstroem, R.J., Speliotis, E.D., and Fava, J.L. (1992). Perceived physical competence in adults: An examination of the physical selfperception profile. Journal of Sport Psychology, 14: 207-221.
- White, A. and Coakley, J. (1986). Making decisions: The response of young people in the Medway Towns to the "Ever Thought of Sport" campaign. London, Sports Council.
- Whitehead, J. (1991). Preliminary validation of the Physical Self-Perception Profile questionnaire for seventh and eighth grade students. Paper presented at the Annual Meeting for the North American Society for the Psychology of Sports and Physical Activity, Assilomar, CA.
- Whitehead, JR. (1995). A study of children's physical self-perceptions using an adapted physical self-perception profile questionnaire. Pediatric exercise Science, 7: 132-151.
- Whitehead, J. and Corbin, C.B. (1988). Physical competence/Adequacy subdomains and their relationship to global physical self-worth and global general self-worth. Paper presented at the Annual Conference for the Association for the Advance-ment of Applied Sport Psychology, Nashua, NH