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## Adolescents' Self-concept Short Scale: A version of PHCSCS

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### Abstract

**Problem Statement:** The adolescents' self-concept has remained as a powerful issue in educational context. The lack of assessment instruments, especially in shorted version and with studied psychometric characteristics, has constituted a problem. **Purpose of Study:** This study presents the construction of "Adolescents' Self-concept Short Scale" (ASCSS), using the Portuguese adaptation (Veiga & Domingues, 2012) of the Piers-Harris Children's Self-Concept Scale (Piers & Hertzberg, 2002). **Research Methods:** The study involved 440 adolescent students. The dichotomous responses (yes/no) of the original 60 items PHCSCS version has been changed to 1-6 responses (completely disagree - completely agree). The psychometric qualities, internal consistency and the external validity were analyzed. Factorial analyses carried out highlighted six factors — behaviour, anxiety, intellectual status, popularity, physical appearance, and happiness —, each having 5 items. The analysis allowed to find a short scale with 30 items that, exceeding the percentage of variance explained in total versions, has best levels of reliability. In the study of external validity, the results in the "Adolescents' Self-concept Short Scale" appeared significantly related to the academic achievement. **Findings:** The results allowed to find that this short scale presents psychometric qualities and can be used in research and psychoeducational practice, to assess the multidimensional adolescents' self-concept. **Conclusions:** The future use of the "Adolescents' Self-concept Short Scale" is considered and proposed. This scale may be a useful opportunity for psychologists, teachers and other education professionals. **Recommendations:** to deepen the study of multidimensionality of adolescents' self-concept and extend the external validity can constitute important fields of research.

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**Keywords:** Adolescents' Self-concept, scale of assessment, validation.

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## 1. Introduction

The research of recent decades has highlighted the importance of self-concept in psychology, whose relevance has been determined by the relationship that this multidimensional construct (Shavelson, Hubner & Stanton, 1976) establishes with several variables, both internal and contextual (Craven & Marsh, 2008; Marsh, 2000; Marsh, 2006; Marsh & Craven, 2006; Veiga, 2012), to the extent that it furthers the understanding of how the person perceives oneself. It also serves to explain and predict the social and environmental appropriateness of the people's behaviour (Veiga, 2012; Veiga & Domingues, 2012).

### *1.1. Relevance of the Piers-Harris Children's Self-Concept Scale (PHCSCS) in the evaluation of the self-concept*

The PHCSCS scale, since its first version (Piers & Harris, 1964; Piers, 1984), going through the second (Piers & Herzberg, 2002) to the present day one, has been used in many different studies and has been referred to, in many others, especially in the educational psychology and clinical psychology, and it can be said that the history of the self-concept study would be very incomplete without its reference. Holmbeck et al (2007) considered the PHCSCS-2 (Piers & Herzberg, 2002) a central reference in the evaluation of psychosocial adjustment and psychopathology in the context of the paediatric psychology. The PHCSCS-2 (Piers & Herzberg, 2002) has been widely used in the search for expansion of its psychometric properties (reliability and validity). Internationally the PHCSCS-2 scale has been used in several investigations, involving specific aspects of the self-concept (Oriel, George & Blatt, 2008) and in subjects with special educational needs (Remine, Care & Grbic, 2009). The scale was also validated for specific populations, in addition to the North American and European ones (Flahive, Li & Chuang, 2011), who concluded suitability and good psychometric properties of the Chinese version for adolescent students.

The PHCSCS-2 was fairly used in Portugal (Veiga, 2012) and was applied in the context of educational psychology (Bilimoria, 2010; Manata, 2011), clinical psychology (Rodrigues, 2011; Clemente, 2008) and in the evaluation of intervention programs (Gomes, 2011; Bilimoria, 2010), including subjects from specific populations - adolescents in residential care in the study by Nunes (2010), students with special educational needs (Ribeiro, 2010) and students with learning disabilities (Clement, 2008). In the several studies analysed, it was intended to relate the self-concept with other school and extracurricular variables (Nunes, 2010), such as: the perception of the psychosociological environment of the classroom, school disruption and academic success (Veiga, 2012); the disruptive behaviors (Clemente, 2008; Clement & Santos, 2010); the sociability (Ribeiro, 2010); the motivation and study methods (Bilimoria, 2010); the attitudes towards reading (Manata, 2011); the construction of citizenship projects (Gomes, 2011); eating behaviour and obesity (Roberts, 2011).

However, the type of dichotomous scale responses has been seen as limiting the scale psychometric qualities. These could be expanded in a broader form of responses. Thus, it was decided to make a change in the PHCSCS-2 scale, used in a previous study (Veiga & Domingues, 2012), in order to promote the discriminative capacity of the items and thus enable a better assessment of the relationship between the self-concept and other variables. Thereby, it was decided to expand the range of responses to 1-6, considering that the most discriminative capacity of the items would allow not only a better capacity to study the self-concept relations with other variables, as well as a greater variability in the assessment of the overall self-concept. It was decided to go for the use of each item in only one dimension of the scale, considering the factorial saturation and apparent validity and content of the item. A short version of the scale, with reliability and validity, would be the goal to achieve.

## 2. Methodology

The study is presented below, starting with sample subjects, followed procedures and presentation of the instrument applied to assess self-concept.

### *2.1. Sample*

The study included a total of 440 students, from 10<sup>th</sup> (45.5%), 11<sup>th</sup> (27%) to 12<sup>th</sup> grade (27.5%), attending schools in

the North of Portugal, and included both female (50%) and male subjects (50%).

2.2. *Instrument*

The PHCSCS V1-6 is a new version of the PHCSCS-2 scale of Piers & Herzberg (2005), adapted to Portugal by Veiga (2006), which keeps unchanged the wording of the 60 items and the factor structure, this one composed by the six factors already known, i.e. anxiety (an), physical appearance (pa) behavior (be), popularity (po), happiness (ha), intellectual status (is) The version used can be found in a previous study (Veiga & Roberts, 2012). The score of each subject is calculated based on the assignment of the number of points, from one to six, corresponding to the perception selected by the subject, from totally disagree (level 1) to totally agree (level 6 ). In the case of inverse items it was carried out, first, the reversal of the numerical value of the items.

2.3. *Procedure*

Once requested the school permission, the questionnaires were applied, with anonymous answers and with the supervision of a teacher, to the classes involved in the study. This task occurred during the regular class hours, having collaborated voluntary students with the necessary time to answer the questionnaires provided. It was withdrawn from the sample the subjects who showed skewed response or lack of involvement by contradiction.

3. **Results**

3.1. *Construct Validity*

The study used the factor analysis of the principal components with *varimax* rotation which showed 6 specific factors with distribution of items as shown in Table 1. The percentage of explained variance, in the entire factors, was 54.40%.

Just like in the Portuguese version of the PHCSCS-2 (Veiga, 2006), we opted for the placement of each item in only one factor, considering the saturation (predefined as greater than 0.40), the semantic content and the apparent validity of that item, as well as the proximity to the PHCSCS-2 (Table 1), seeking a reduced version.

Table 1. Results of the factor analysis in the rotated matrix - Factors and their respective items

Items	Dimensions					
	An	Pa	Be	Po	Ha	Is
PH56. I am often afraid.	,727					
PH59. I cry easily.	,698					
PH23. I am nervous.	,678					
PH07. I get nervous when the teacher calls me.	,615					
PH06. I am shy.	,554					
PH44. I am good-looking.		,811				
PH49. I have a pleasant face.		,795				
PH33. I have nice hair.		,780				
PH08. My looks bother me.		,472				
PH15. I am strong.		,450				
PH27. I often get into trouble.			,760			
PH45. I get into a lot of fights.			,691			
PH25. In school I am a dreamer.			,645			
PH19. I do a lot of bad things.			,638			
PH20. I behave badly at home.			,631			
PH32. I feel left out of thinks.				,708		

PH37. I am among the last to be chosen for games.	,663
PH01. My classmates make fun of me.	,634
PH03. It is hard for me to make friends.	,602
PH51. In games and sports, I watch instead of playing.	,491
PH02. I am a happy person.	,776
PH40. I am unhappy.	,640
PH42. I am cheerful.	,638
PH28. I am lucky.	,550
PH04. I am often sad.	,536
PH18. I am good in my schoolwork.	,685
PH39. My classmates in school think I have good ideas.	,672
PH24. I can give a good report in front of the class.	,640
PH22. I am an important member of my class.	,611
PH52. I forget what I learn.	,435

Items dimensions: An (Anxiety); Pa (Physical appearance); Be (Behavior); Po (Popularity); Ha (Happiness); Is (Intellectual status).

### 3.2. Fidelity of the results

Below are the results regarding the internal consistency of the Adolescents' Self-concept Short Scale (ASCSS). In Table 2 it can be found the internal consistency values of the scale, achieved in the total sample and by gender.

Table 2 – Adolescents' Self-concept Sort Scale (ASCSS)

Group	AC	AN	IS	PO	FA	SA	PTOT
Total sample	.73	.73	.70	.74	.79	.73	.87
Male	.72	.72	.70	.74	.78	.69	.86
Female	.75	.63	.69	.73	.80	.77	.88

As it turns out, the coefficients tend to be higher, in the full scale. As for the total sample, the coefficients (Cronbach's alpha) tend to be higher, especially in the physical appearance factor.

Attached, there is the version of the scale proposed for use in future studies, indicating inverse items and with the items placed interchangeably, in order to reduce even more the tendency to the stereotyped response. The items of each of the factors or dimensions, are also indicated there.

The study of external validity of the ASCSS involved the determination of the correlations of the scores on the factors and the academic performance of the students, as well as their behavioral adaptation (Leite, forthcoming), having been found significant amounts and in the expected sense, increasing the external validity of the scale in study.

## 4. Conclusions

As noted in the literature review, the Piers-Harris Children's Self-Concept Scale questionnaire has been recommended and used in the self-concept assessment in several areas of psychology (educational, clinical, social) and for different purposes (diagnosis, evaluation of intervention programs) at national and international levels.

This study aimed to continue the suggestion made in previous investigations (Veiga, 2006; Veiga & Domingues, 2012), improving the psychometric qualities of the PHSCS and, consequently, the possibilities of gathering information that is more consistent with the theoretical foundation.

The version developed in this study holds only 30 items of the PCHSCS, changing the type of response from dichotomous (yes or no) to response 1 (completely disagree) to 6 (completely agree). The existence of a similar number of items for factors (5 in each factor) promotes the clarity of the evaluation and reduces the response time.

The scale now proposed (see appendix) reduces the number of items, but retains the number of dimensions. We must underline the external validity of the scale (Leite, forthcoming). In subsequent studies, with the analysis of the results determined by specific variables, whether personal, scholar or familiar, we expect to amplify the external validity of the scale, as well as to amplify the knowledge about the distribution of the students through adolescents'

self-concept. The differences between the students of several cycles of basic teaching and high school can also be explored.

Future researches can keep on exploring the self-concept according to the contexts. In summary, the scale now developed may be used in future familiar studies. The study shows that the scale has good psychometric qualities, concerning internal consistency and external validity, which makes it useful to the investigation and psycho-educational practice, to evaluate the adolescents' self-concept, their differentiation and development.

## Appendix

### Adolescents' Self-concept Short Scale (ASCSS) - A short version of PHCSCS

This questionnaire seeks to know the perceptions that you have about others and that you have about yourself in relationship with others. Please answer the questions according to your experience, thoughts and feelings. There are no right or wrong answers. Your answers are going to be used only for investigation purpose and your personal information is going to be kept confidential. Please fill in the circle of the number that best represents your opinion, according to the following criteria: (1) total disagreement, (2) disagreement, (3) more disagreement than agreement, (4) more agreement than disagreement, (5) agreement, (6) total agreement.

- ①②③④⑤⑥ 01. PH56. I am often afraid. (-)  
 ①②③④⑤⑥ 02. PH44. I am good-looking.  
 ①②③④⑤⑥ 03. PH27. I often get into trouble. (-)  
 ①②③④⑤⑥ 04. PH32. I feel left out of things. (-)  
 ①②③④⑤⑥ 05. PH02. I am a happy person.  
 ①②③④⑤⑥ 06. PH18. I am good in my schoolwork.  
 ①②③④⑤⑥ 07. PH59. I cry easily. (-)  
 ①②③④⑤⑥ 08. PH49. I have a pleasant face.  
 ①②③④⑤⑥ 09. PH45. I get into a lot of fights. (-)  
 ①②③④⑤⑥ 10. PH37. I am among the last to be chosen for games. (-)  
 ①②③④⑤⑥ 11. PH40. I am unhappy. (-)  
 ①②③④⑤⑥ 12. PH39. My classmates in school think I have good ideas.  
 ①②③④⑤⑥ 13. PH23. I am nervous. (-)  
 ①②③④⑤⑥ 14. PH33. I have nice hair.  
 ①②③④⑤⑥ 15. PH25. In school I am a dreamer (-)  
 ①②③④⑤⑥ 16. PH01. My classmates make fun of me. (-)  
 ①②③④⑤⑥ 17. PH42. I am cheerful.  
 ①②③④⑤⑥ 18. PH24. I can give a good report in front of the class.  
 ①②③④⑤⑥ 19. PH07. I get nervous when the teacher calls on me. (-)  
 ①②③④⑤⑥ 20. PH08. My looks bother me. (-)  
 ①②③④⑤⑥ 21. PH19. I do many bad things. (-)  
 ①②③④⑤⑥ 22. PH03. It is hard for me to make friends. (-)  
 ①②③④⑤⑥ 23. PH28. I am lucky.  
 ①②③④⑤⑥ 24. PH22. I am an important member of my class.  
 ①②③④⑤⑥ 25. PH06. I am shy. (-)  
 ①②③④⑤⑥ 26. PH15. I am strong.  
 ①②③④⑤⑥ 27. PH20. I behave badly at home. (-)  
 ①②③④⑤⑥ 28. PH51. In games and sports, I watch instead of playing. (-)  
 ①②③④⑤⑥ 29. PH04. I am often sad. (-)  
 ①②③④⑤⑥ 30. PH52. I forget what I learn. (-)

Legend: *Items* 1-30, order within the short version found. *Items* PH, order the original version PHCSCS of 60 items. (-) Inverse items.

*Items* dimensions: *Anxiety* - 01, 07, 13, 19, 25; *Physical appearance* - 02, 08, 14, 20, 26; *Behavior* - 03, 09, 15, 21, 27; *Popularity* - 04, 10, 16, 22, 28; *Happiness* - 05, 11, 17, 23, 29; *Intellectual status* - 06, 12, 18, 24, 30.

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