

Psychometric properties of the European Portuguese version of the Child Self-efficacy Scale in adolescents with chronic musculoskeletal pain



Rosa Andias^{1,2}, Anabela G. Silva^{1,3}
¹School of Health Sciences, University of Aveiro, Campus Universitário de Santiago, 3810-193 Aveiro, Portugal ²Center for Health Technology and Services Research (CINTESIS), Piso 2, edifício nascente, Rua Dr. Plácido da Costa, s/n, 4200-450 Porto, Portugal ³Center for Health Technology and Services Research (CINTESIS.UA), University of Aveiro, Campus Universitário de Santiago, 3800-193 Aveiro, Portugal

1. Introduction

The prevalence of **chronic musculoskeletal pain** in adolescents is high, being associated with functional limitations and maladaptive psychosocial aspects [1,2]. **Pain self-efficacy** is an important individual resilience mechanism, activated in response to pain, which may positively influence pain management capacity [3,4]. The use of Child Self-Efficacy Scale (CSES) is recommended in pediatric guidelines [4]. The aims of this study were to translate the Child Self-Efficacy Scale (CSES) to European Portuguese language and assess its validity and reliability in adolescents with chronic musculoskeletal pain.

2. Methods

The original version of the CSES was translated and pilot tested in line with international guideless. Adolescents from 4 high schools, aged between 13 and 18 years, were asked to complete an online questionnaire with the following instruments: the final version CSES, the Nordic Musculoskeletal Questionnaire, the Numeric Pain Rating Scale (NPRS), the Depression, Anxiety and Stress Scale for Children (DASS-C), the Pain Catastrophizing Scale (PCS), the Tampa Scale of Kinesiophobia (TSK) and the Basic Scale on Insomnia Complaints and Quality of Sleep (BaSIQS). The same questionnaire was applied 4-weeks later to a subsample of adolescents (n=63), to assess test-retest reliability and measurement error. Internal consistency was obtained, and hypothesis testing, and factor analysis were used to assess validity.

Table 1. Sample characteristics.

		Without Pain	With Pain ^a	With NP ^b	With LBP ^d
N		295 (17.1)	1435 (82.9)	123 (8.6)	230 (16.0)
Gender	Girls - n (%)	103 (34.9)	919 (64.0)	90 (73.2)	164 (71.3)
	Boys - n (%)	192 (65.1)	516 (36.0)	33 (26.8)	66 (28.7)
Age (years)	mean±sd	16.47±1.19	16.30±1.17	16.25±1.08	16.42±1.21
Pain intensity (0-10)	mean±sd	--	--	4.20±2.27	4.99±2.36
Number of pain sites	mean±sd	--	3.03±1.67	3.63±1.53	3.59±1.44
FDI (0-60)	Total score	1.27±2.94	5.36±6.16	5.75±5.85	7.47±7.35
DASS-C (0-63)	Total score	3.84±5.92	10.96±11.40	14.02±13.23	14.99±13.21
BaSIQS (0-28)	Total score	6.49±3.74	8.83±4.70	8.87±5.27	9.72±4.51
PCS (0-52)	Total score	5.85±7.96	10.98±10.62	10.33±9.67	13.70±11.90
TSK (13-52)	Total score	20.53±7.59	23.69±7.14	22.94±7.07	24.41±6.90
CSES (7-35)	Total score	14.20±6.47	16.28±6.04	16.70±6.39	17.50±6.40

^aAdolescents with at least 1 painful body site; ^bAdolescents with Neck Pain; ^cAdolescents with Low Back Pain

3. Results

1730 adolescents participated in this study (Table 1). The final version of CSES in European Portuguese showed **good internal consistency** ($\alpha=0.89$ to 0.92) and **test-retest reliability** ($ICC=0.83$; $95\%CI=0.71;0.89$); the **standard error of measurement** was **2.49**; the **minimal detectable difference** was **6.9**. Fair and moderate to good correlations were obtained between CSES and catastrophizing (r_s from 0.45 to 0.48), depression, anxiety and stress (r_s from 0.35 to 0.38), fear of movement (r_s from 0.38 to 0.49) and sleep (r_s from 0.20 to 0.29).

CSES was able to distinguish between adolescents with and without chronic pain and **factor analysis suggested a one-factor solution** (Table 2).

Table 2. Factor loadings based on principal components factor analysis for groups with at least 1 painful body site, neck and low back pain.

	At least 1 painful body site (n=1435)	NP (n=123)	LBP (n=230)
CSES item (response option: likert scale 1 to 5)	Factor 1 E=4.73	Factor 1 E=4.67	Factor 1 E=4.73
1. How sure are you that you can make it through a day of school when you have pain?	0.83	0.75	0.83
2. How sure are you that you can be with your friends when you have pain?	0.85	0.86	0.87
3. How sure are you that you can do well in school when you have pain?	0.83	0.79	0.84
4. How sure are you that you can do house chores when you have pain?	0.80	0.81	0.78
5. How sure are you that you can take care of yourself when you have pain?	0.78	0.83	0.75
6. How sure are you that you can do your homework when you have pain?	0.81	0.84	0.82
7. How sure are you that you can do things with your family when you have pain?	0.85	0.84	0.86

4. Conclusion

The European Portuguese version of the CSES seems to have internal consistency and to be reliable and valid when used in adolescents with chronic musculoskeletal pain.