

Measuring functional pain related disability in the community: further inquiries into the Functional Disability Inventory

Ester Solé, PhD^{1,2,3}, Santiago Galán, MSc^{1,2,3}, Rocío de la Vega, PhD^{1,5}, Elena Castarlenas, PhD^{1,2,3}, Elisabet Sánchez-Rodríguez, PhD^{1,2,3}, Mark P. Jensen, PhD⁵, Jordi Miró, PhD^{1,2,3,4}

¹ Unit for the Study and Treatment of Pain – ALGOS, Universitat Rovira i Virgili, Catalonia, Spain

² Research Center for Behavior Assessment (CRAMC), Department of Psychology, Universitat Rovira i Virgili, Catalonia, Spain

³ Institut d'Investigació Sanitària Pere Virgili; Universitat Rovira i Virgili, Catalonia, Spain

⁴ Chair in Pediatric Pain URV – Fundació Grünenthal

⁵ Department of Rehabilitation Medicine, University of Washington, Seattle, WA, USA

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BACKGROUND AND AIM

The most used well-established measure to assess disability in children with chronic pain is the Functional Disability Inventory (FDI).

The **purpose** of this study was to evaluate the psychometric properties of the FDI in a nonclinical sample of children and adolescents. We expected to confirm the 2-factor structure of the FDI found in studies with clinical samples and sought to evaluate the internal consistency and validity of its data in a population which has not yet been studied.

METHODS

Procedure

561 schoolchildren (aged 8-18 years) participated in this study. Participants completed the assessment form during 45 minutes of school time following the instructions provided by research staff. A group of 107 participants also completed measures of quality of life.

Measures

Demographics	Age, sex, school grade
Pain Information:	
Highest intensity of the most frequent pain	Numeric Rating Scale (NRS-11)
location of their most frequent pain problem	CARRA Pain Chart
Disability	Functional Disability Inventory (FDI)
Anxiety sensitivity	Childhood Anxiety Sensitivity Index (CASI)
Pain coping strategies:	
• Internalizing behaviors	Pain Coping Questionnaire (PCQ)
• Seeking social support	
• Positive self-statements	
Quality of life	Pediatric Quality of Life Inventory (PedsQL)

Email: ester.sole@urv.cat

RESULTS

Table 1. Sample characteristics

Sex (N, %)		
Girls/Young women	315	56
Age (Mean, SD)	14.15	2.09
Pain problems in the previous 3 months (N, %)	473	84
Chronic pain ^a (N, %)	167	30
Maximum intensity of the most frequent pain ^b (Mean, SD)	7.8	1.81

^aInformation missing in 6 cases.
^bInformation missing in 8 cases of those with pain problems in the previous 3 months.

Table 2. Descriptive information of items in the Functional Disability Inventory and factor loadings resulting from CFA.

Items	Factor loadings		Mean	SD	Skewness	Kurtosis
	Physical Activities	Daily Activities				
1. Walking to the bathroom	0.52		0.19	0.61	3.92	16.42
2. Walking up stairs	0.67		0.58	0.89	1.75	2.83
3. Doing something with a friend	0.76		0.69	1.05	1.57	1.77
4. Doing chores at home	0.66		0.78	1.13	1.37	0.95
5. Eating regular meals		0.57	0.73	1.16	1.47	0.98
6. Being up all day without a nap or a rest		0.52	0.87	1.23	1.27	0.41
7. Riding the school bus or travelling in the car		0.66	0.5	1.07	2.18	3.59
8. Being at school all day		0.70	1	1.27	1.14	0.17
9. Doing the activities in gym class (or playing sports)	0.69		1.04	1.28	1.05	-0.07
10. Reading or doing homework		0.67	0.81	1.14	1.38	0.96
11. Watching TV		0.52	0.34	0.82	2.83	8
12. Walking the length of a football field	0.68		0.62	1.05	1.73	2.12
13. Running the length of a football field	0.67		1.23	1.38	0.78	-0.74
14. Going shopping	0.71		0.65	1.12	1.87	3.23
15. Getting to sleep at night and staying asleep		0.40	0.78	1.16	1.43	0.97
Total Scale	---	---	10.81	10.44	1.24	1.19

SD= Standard deviation; CFA= Confirmatory Factor Analysis

Reliability

Total Functional Disability Scale, Cronbach's $\alpha = 0.89$

Physical Activities scale, Cronbach's $\alpha = 0.87$ and Daily Activities scale, Cronbach's $\alpha = 0.77$.

The mean and standard deviations for the Physical Activities and the Daily Activities scales were 5.78 (SD=6.26) and 5.03 (SD=5.15), respectively.

Table 3. Criterion, convergent and discriminant validity

Criterion validity (correlations between scores on the FDI and criterion variables)	FDI total score	Physical Activities	Daily Activities
Anxiety sensitivity (N=497) ^a	0.24*	0.21*	0.23*
Internalizing behaviors (N=527)	0.33*	0.28*	0.32*
Convergent validity			
Quality of life (N=107) ^b	-0.57*	-0.52*	-0.5*
Discriminant validity			
Positive self-statements (N=515)	-0.00	0.02	-0.03
Seeking social support (N=525)	0.00	0.01	-0.01

*p>.001

^a Information missing in 64 cases, but 57 of them did not respond to the CASI, because it was included later in the assessment form.

^b Information missing in 454 cases, but 452 of them did not respond to the PedsQL, because it was included later in the assessment form.

CONCLUSIONS

- The FDI provided reliable and valid scores as a measure of disability in a community sample of children and adolescents.
- As hypothesized, the CFA confirmed the two factor structure (Physical Activities and Daily Activities) suggested by previous studies [1,2].

REFERENCES

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