



Published in final edited form as:

Am J Phys Med Rehabil. 2012 February ; 91(2): 114–121. doi:10.1097/PHM.0b013e318238a074.

The Development and Preliminary Validation of the Pediatric Survey of Pain Attitudes

Joyce M. Engel, PhD, OT¹, Mark P. Jensen, PhD², Marcia A. Ciol, PhD^{2,3}, and G. Michelle Bolen, OTR/L⁴

¹Department of Occupational Science and Technology, University of Wisconsin-Milwaukee, Milwaukee, WI

²Department of Physical Medicine and Rehabilitation, University of Washington, Seattle, WA

³Department of Physical Medicine and Rehabilitation, University of Washington, Seattle, WA

⁴Department of Physical Medicine and Rehabilitation, Division of Occupational Therapy, University of Washington, Seattle, WA

Abstract

Objective—Biopsychosocial models of pain hypothesize patient attitudes and beliefs about pain play a key role in adjustment to chronic pain. The purpose of this study was to facilitate research testing the utility of biopsychosocial models in youths with physical disabilities by developing and testing the validity of a measure of pain-related beliefs that could be used with younger patients.

Design—One hundred and four youths with physical disabilities were administered, via interview, a measure of pain-related beliefs developed for youths with chronic pain – the Pediatric Survey of Pain Attitudes (Peds-SOPA) – and a modified Brief Pain Inventory Pain Interference scale (BPI).

Results—Item analyses yielded a 29-item pain belief attribution that assessed seven belief domains. The internal consistency (Cronbach's alpha) of the subscales varied from good to excellent (.67 – .92). Pearson correlations between Peds-SOPA and the modified BPI showed moderate associations between pain beliefs and pain interference for the Medical Cure ($r = .29$), Emotion ($r = .27$), and Disability ($r = .36$) scales.

Conclusions—The findings indicate the Peds-SOPA scales are reliable, and a subset of the scales is associated with an important pain-related domain (pain interference), providing preliminary support for the validity of the Peds-SOPA scales.

Keywords

Chronic Pain; Youth; Disability; Beliefs

Correspondence: Joyce M. Engel, PhD, OT, FAOTA, Department of Occupational Science and Technology, University of Wisconsin-Milwaukee, P.O. Box 413, Milwaukee, WI 53201-0413, USA.

Disclosures:

Financial disclosure statements have been obtained, and no conflicts of interest have been reported by the authors or by any individuals in control of the content of this article.

Conservative estimates indicate that 15% to 25% of youths experience chronic pain.^{1, 2} Chronic pain can contribute to physical decline as well as emotional and social difficulties in children.³ Unrelieved pain may also exacerbate injury or illness, prevent wound healing, lead to infection, prolong hospitalization, and ultimately even contribute to mortality.⁴ Moreover, childhood pain predicts of later pain responses and chronic pain in general.^{5,6}

Biopsychosocial models of chronic pain are now well accepted and deemed useful for understanding chronic pain in adults.^{7, 8, 9} These models acknowledge that pain usually has an underlying biological basis, but also notes that psychosocial factors (e.g., attitudes, cognitions, coping responses) and the social environment can impact the experience of pain and its effects on physical and psychological functioning.⁹

The application of biopsychosocial models for the study of chronic pain in youths is only just now emerging.^{10,11,12} In order to test the utility of such models in youths with pain, valid and reliable measures of key biopsychosocial variables, such as pain-related beliefs and coping, are needed.¹³ The Survey of Pain Attitudes (SOPA) is a well-researched instrument that assesses seven pain-related beliefs about pain in adults. Research in adults has shown that the SOPA subscales predict improvements in functioning from pre- to post-multidisciplinary pain treatment^{14, 15} as well as the maintenance of functioning following treatment¹⁶, as would be predicted based on a biopsychosocial perspective. There has not yet, however, been an instrument developed to assess pain-related beliefs in youths with chronic pain.

The purpose of this study was to develop a valid and reliable measure of pain attitudes in youths with chronic pain that may be used to help determine if pain beliefs are as important to adjustment to pain in youths as they are in adults. We hypothesized that a measure could be developed whose subscales were internally consistent. Also, because the measure was based on items selected from a commonly used measure of pain beliefs in adults¹⁴, and based in large part on the findings from research in adults^{17, 18}, we predicted that the Control, Disability, and Harm scales of the new measure would be moderately and significantly associated with pain interference (with the Control scale showing negative associations and the Disability and Harm scales showing positive associations), while the other beliefs would show weak and non-significant associations with pain interference.

MATERIALS AND METHODS

The data used in the current study come from a larger, ongoing study of the nature and scope of pain in youths with physical disabilities.^{19, 20, 21} The current analyses focus on a subset of data obtained for this study during interviewer-administered youth interviews and from parent/guardian-completed questionnaires. This data subset includes youth-reported pain intensity, pain interference, and pain attitudes in addition to parent/guardian-reported demographic information.

Participants

Participants were a convenience sample of 104 youths with physical disabilities and chronic pain, from the Seattle metropolitan area, and their parent/guardians. Inclusion criteria were:

(1) primary diagnosis of cerebral palsy (CP), neuromuscular disease (NMD), spina bifida (SB), limb deficiency (LD), or spinal cord injury (SCI); (2) chronological age between 8 and 20 years; (3) capacity for expressive communication, with or without the use of augmentative communication devices; (4) no more than mild cognitive impairment, as determined by a brief telephone screening with the parent/guardian and a passing score on a modified version of the Mini-Mental Status Examination²², administered either in person or over the telephone; and (5) use of English as the primary language. The MMSE has been validated for use via telephone with adults²³, has been modified for use in a pediatric outpatient setting, and has been used successfully with children as young as 4 years.²⁴ The present study used a version of the MMSE modified to include eight youth-appropriate items, with a total possible score of 25 points if administered in-person, or 22 points if administered over the telephone (due to the omission of certain items requiring in-person interaction). In order to preserve the approximate percentage of the cutoff score of 24/30 recommended by Folstein et al.²² for the adult version of the MMSE, minimum passing scores of 17/25 (in-person) or 15/22 (over the telephone) were established as cutoff scores in the present study. See Table 1 for additional demographic information.

Measures

Youths and parents/guardians both completed questionnaires. Youth questionnaires were interviewer-administered and included measures that assessed pain intensity, pain attitudes, and pain interference. Demographic information was obtained through parent/guardian paper-and-pencil questionnaires.

Demographic Data—Personal characteristics included the youth’s disability diagnosis, age, sex, and ethnicity.

Pain Intensity—Youth participants reported their average pain intensity for the past week using an 11-point numeric rating scale² ranging from 0 (*no pain*) to 10 (*pain as bad as could be*). The NRS has been determined to be appropriate for use with children as young as 5 years.²

Pain Interference—A modified version of the Brief Pain Inventory (BPI) was chosen to measure pain interference with functional performance and participation because of its ease in comprehension, administration, and established excellent psychometric properties. The BPI asks respondents to rate the interference of pain on specific daily activities or categories of activities and functioning on 0–10 NRSSs, where 0 represents “does not interfere” and 10 represents “interferes completely.” For the current study, five of the original 7-item BPI items (assessing pain interference with general activity, mood, relations with other people, sleep, and enjoyment of life) were unchanged. In order to enhance the appropriateness of the BPI for pediatric participants with disabilities, however, two of the BPI items were modified slightly. Since a large number of youths with CP are non-ambulatory, interference with mobility (“ability to get around”) replaced the original question of interference with “ability to walk.” In addition, “normal work” was altered to “school or play” to make it more appropriate for younger individuals. Finally, in order to increase the content validity of the BPI, the investigators added items for interference with self-care, recreational activities, and

social activities. The modified BPI evidenced excellent internal consistency (Cronbach's alpha = .90) in the sample, as well as validity through its strong and significant association with pain intensity ($r = 0.64, p < .01$).

Pain Attitudes—The Survey of Pain Attitudes (SOPA) is one of the most commonly used measures of beliefs in studies of adults with chronic pain. It contains 57 items that assess 7 pain-related beliefs: control (the extent to which patients believe they can control their pain), medical cure (the extent to which patients believe in a medical cure for their pain problem), solicitude (the extent to which patients believe that others should be solicitous in response to their experience of pain), medication (the extent to which patients believe that medications are an appropriate treatment for chronic pain), emotion (the extent to which patients believe that their emotions impact their pain), harm (the extent to which patients believe that pain means they are damaging themselves and that they should avoid that activity), and disability (one is unable to function because of pain).²⁵ The SOPA has demonstrated good test-retest stability, internal consistency, and criterion validity.^{26, 27, 28}

Youth participants reported on their pain attitudes using items modified from the original Survey of Pain Attitudes (SOPA). A pool of 37 items that assess common attitudes about pain was generated from the SOPA with input from the parents of youths with physical disabilities, an occupational therapist who is expert in assessing and treating youths with physical disabilities and chronic illnesses (JME), and a psychologist expert in the field of pain attitude assessment (MPJ). The investigators sought to write items that: (1) reflected the original items of the SOPA as much as possible; (2) could be administered in-person or by telephone interview; (3) were developmentally appropriate in cognition and language for youths aged 8 to 20 years; (4) were free of gender and socioeconomic bias; and (5) were appropriate for youths residing in a variety of settings (e.g., one-family home, group home). The reading level for all items was maintained at the second grade, and a three-point Likert scale describing degree of agreement with statement was used for scoring. The scale ranged from 0 (*I do not agree.*) to 2 (*I agree with this.*). Following item analyses (see below), the number of items was reduced to 29 (see Table 2 for items eliminated from the SOPA. See Table 3 for the final set of items included in the pediatric version of the SOPA; the Peds-SOPA). See Table 4 for scoring directions.

Methods

Participants were recruited using multiple recruitment strategies, including mailings from clinics at the local regional children's hospital, public postings, word of mouth, and a local summer camp for youths with muscular dystrophy. The Institutional Review Board at Children's Hospital and Regional Medical Center in Seattle, WA approved the study. All participants gave written informed assent/consent. Youth participants completed one-time interviewer-administered questionnaires in the participant's home, at the University of Washington Medical Center, at a local camp, or over the telephone. Parents/guardians completed questionnaires during the youth interview or by mail. Whenever possible, youths were interviewed in private settings to minimize potential response interference and to ensure privacy.

Data Analysis

Pearson correlation coefficients were first computed between each item and its parent scale (minus that item), as well as between each item and all of the other subscales, to ensure that the item was at least moderately associated with the parent scale ($r = .30$ or greater), and that it was more strongly associated with the parent scale (minus that item) than it was with other Peds-SOPA subscales^{29, 30}. Items that did not meet these criteria were removed from the pool of items, and internal consistency coefficients were then computed for each scale (made up of the items that survived the item analyses). Pearson correlations between the Peds-SOPA subscales and measures of average pain intensity (NRS) and pain interference (BPI) were calculated to determine the associations between coping responses and patient functioning (Table 5).

RESULTS

Item Analyses

Five of the original pool of 37 items did not meet the criteria of a correlation coefficient of at least .30 with the parent scale (average of items within that scale minus the item being examined). An additional three items showed stronger associations with other subscales than with the parent scale. These eight items were therefore eliminated from the pool, leaving a final set of 29 items in the Peds-SOPA (see Table 2). The Harm scale was renamed as the Exercise scale in the Peds-SOPA, because only the exercise-related items from the original scale were retained in the new scale.

Internal Consistency

The internal consistency coefficients (Cronbach's alpha) for the subscales varied from good to excellent (.67 – .92), in the following order of increasing internal consistency: Disability (.67), Exercise (.71), Pain Control (.72), Solicitude (.79), Medical Cure (.80), Emotion (.83), and Medication (.92).

Convergent and Divergent Validities

Three of the associations between the Peds-SOPA scales and the BPI were statistically significant. However, only one of these (Disability, $r = .36$) was hypothesized a priori. The two other significant relationships hypothesized based on the findings from adult samples (a significant negative association between the Pain Control scale and pain interference, and a significant positive association between the Harm scale, renamed as the Exercise scale, and pain interference) did not emerge in this sample. However, the Peds-SOPA Medical Cure ($r = .29$) and Emotion ($r = .27$) scales both evidenced moderate and significant positive associations with pain interference in our sample of youths with disabilities.

DISCUSSION

The findings indicate that in our sample of youths with physical disabilities studied, the Peds-SOPA scales are all reliable, as evidenced by their adequate to excellent internal consistency coefficients. These coefficients are very similar to those found for the original

SOPA scales in adult samples¹⁷, and suggest that the items on each of the Peds-SOPA scales all tap into a similar underlying construct.

The original SOPA scales vary in their ability to predict other pain-related variables. The Pain Control, Disability, and Harm scales are the scales most often associated directly with physical functioning and interference of pain with function in univariate analyses and multivariate analyses in adult samples.^{14,17,18} They are also the scales that tend to be most closely linked to physical functioning in process analysis studies examining the association between changes in beliefs and changes in functioning.^{14,15} On the basis of these findings in adults, we predicted that the Peds-SOPA Pain Control, Disability, and Exercise (renamed from Harm given the items left in this scale following item analyses) scales would show the strongest associations with pain interference in the youths with chronic pain in this study. Of these hypothesized relationships, however, only one (Disability) was supported. Neither the Peds-SOPA Pain Control scale nor Exercise scale showed a significant association with pain interference in our sample.

The negative findings concerning the Pain Control and Exercise scale could be related to the removal of some of the items in these scales in the development of the Peds-SOPA. This may be particularly true for the Exercise scale, if it were the case that the items that assess beliefs about pain signaling harm that were removed were a key component of the significant associations found in the adult studies. It could also be the case that beliefs about control over pain and the importance of exercise might simply be less important in youths with pain associated with physical disabilities, compared to adults with chronic pain. More research with the Peds-SOPA is needed to determine if the findings from this study generalize to other samples of youths with pain.

Interestingly, two significant associations between the Peds-SOPA scales and pain interference emerged that were not predicted, one involving the Emotions scale and the other involving the Medical Cure scale. Again, it is not possible to know the reasons for the positive findings concerning these scales in the current study, and the lack of positive findings concerning these scales in adults. Perhaps these beliefs play a larger role in adjustment to chronic pain in youths than they do in adults. If these findings are replicated in other samples of youths with chronic pain, especially if changes in these beliefs are associated positive outcomes for youths, then they suggest the possibility that clinicians should target these beliefs when working with youths with chronic pain.

Several limitations should be considered when interpreting these study findings. First, although the sample size was adequately large ($N = 104$) for detecting significant associations between the study variables, the sample was quite heterogeneous. For example, 33% of the sample was youths with CP while 10% were youths with spinal cord injury. It is possible that important differences exist in the associations between pain beliefs and important outcome measures across samples, and these differences might have been obscured by including all of the participants in the same sample. Additional research is needed, with larger samples of youths from different disability groups, to determine which findings generalize across groups, and which are unique to individual disability groups. Second, the sample was a convenience sample and not a randomly selected sample of youths

with the different disabilities. Therefore, they do not necessarily represent the populations of youths with disabilities. Again, more research is needed to determine the overall generalizability of the findings.

Another limitation is that this paper only described the initial development of the Peds-SOPA. The study did not have an adequate number of subjects to allow us to perform a factor analysis to confirm the factor structure of the items.³¹ Additional work is therefore needed to determine if the Peds-SOPA items distinctly assess seven pain-related belief scales in additional samples of children with chronic pain. Finally, all the data for this study were obtained via self-report, which can increase associations between measures due to shared method variance. Functioning could have been assessed through means other than self-report such as direct observations or parent/guardian report. It would be useful to examine the association between pain beliefs, as measured by the Peds-SOPA, and objective measures of youth functioning.

Despite the limitations of the current study, one strength of the Peds-SOPA is its brevity (only 29 items), making it a measure that could be easily administered and scored in clinical settings. Moreover, it is the only measure developed, to our knowledge that assesses pain-related beliefs in youths. It should therefore be helpful in determining the utility of biopsychosocial models of chronic pain in research among youths with chronic pain.

Acknowledgments

The authors gratefully acknowledge the assistance of Joye McName, MOT, and Joni Pitts, MOT, for their contributions in data management and analyses.

Supported by grant PO1 ND/NS 33988, "Management of Chronic Pain in Rehabilitation," from the National Institute of Child Health and Human Development and the National Institute of Neurological Disorders and Stroke, National Institutes of Health and grant 5U01AR052171-02, "NIH Roadmap for Medical Research," from the National Institutes of Health to the University of Washington.

References

1. Goodman JE, McGrath PJ. The epidemiology of pain in children and adolescents: A review. *Pain*. 1991; 46(3):247–264. [PubMed: 1758709]
2. McGrath, P.; Gillespie, J. Pain assessment in children and adolescents. In: Turk, D.; Melzack, R., editors. *Handbook of pain assessment*. New York, NY: Guilford Press; 2001. p. 91-118.
3. Engel JM, Kartin D. Pain in youth: A primer for current practice. *Crit Rev Phys & Rehabil Medicine*. 2004; 16(1):53–76.
4. Schechter, NL.; Berde, CB.; Yaster, M. Pain in infants, children, and adolescents: An overview. In: Schechter, NL.; Berde, CB.; Yaster, M., editors. *Pain in infants, children, and adolescents*. 2nd. Philadelphia, PA: Lippincott Williams & Wilkins; 2003. p. 3-18.
5. Anand, KJS. Long-term effects of pain in neonates and infants. In: Jensen, TS.; Turner, JA.; Wiesenfeld-Hallen, Z., editors. *Progress in pain, research, and management*. Seattle, WA: IASP Press; 1997. p. 881-892.
6. American Pain Society. Pediatric chronic pain. 2010. <http://www.ampainsoc.org/advocacy/pediatric.htm> Accessed December 29, 2010
7. Andrasik F, Flor H, Turk DC. An expanded view of psychological aspects in head pain: The biopsychosocial model. *Neurol Science*. 2005; 26:s87–s91.
8. Gatchel RJ. Comorbidity of chronic pain and mental health disorders: The biopsychosocial perspective. *Am Psychol*. 2004; 59(8):795–805. [PubMed: 15554853]

9. Novy DM, Nelson CV, Francis DJ, Turk DC. Perspectives of chronic pain: An evaluative comparison of restrictive and comprehensive models. *Psychol Bull.* 1995; 118(2):238–247. [PubMed: 7568572]
10. Walco G, Dampier CD. Chronic pain in adolescent patients. *J Pediatr Psychol.* 1987; 12(2):215–225. [PubMed: 3612425]
11. Varni JW, Rapoff MA, Waldron SA, Gragg RA, Bernstein BH, Lindsley CB. Effects of perceived stress on pediatric chronic pain. *J Behav Med.* 1996; 19(6):515–528. [PubMed: 8970912]
12. Eccleston C, Jordan AL, Crombez G. The impact of chronic pain on adolescents: A review of previously used measures. *J Pediatr Psychol.* 2006; 31(7):684–697.
13. Engel JM, Petrino TJ, Dudgeon BJ, McKearnan KA. Cerebral palsy and chronic pain: A descriptive study. *Phys and Occup Ther Pediatr.* 2005; 25(4):73–84. [PubMed: 16418117]
14. Jensen MP, Turner JA, Romano JM. Correlates of improvement in multidisciplinary treatment of chronic pain. *J Consult and Clin Psychol.* 1994; 62(1):172–179. [PubMed: 8034820]
15. Jensen MP, Turner JA, Romano JM. Changes in beliefs, catastrophizing and coping are associated with improvement in multidisciplinary pain treatment. *J of Consult and Clin Psychol.* 2001; 69(4): 655–662. [PubMed: 11550731]
16. Jensen MP, Turner JA, Romano JM. Changes after multidisciplinary pain treatment in patient pain beliefs and coping are associated with concurrent changes in patient functioning. *Pain.* 2007; 131:38–47. [PubMed: 17250963]
17. Jensen MP, Turner JA, Romano JM. Pain belief assessment: A comparison of the short and long versions of the Survey of Pain Attitudes. *J Pain.* 2000; 1(2):138–150.
18. Turner JA, Jensen MP, Romano JM. Do beliefs, coping, and catastrophizing independently predict functioning in patients with chronic pain? *Pain.* 2000; 85:115–125. [PubMed: 10692610]
19. Engel JM, Kartin D, Jaffe KM. Exploring chronic pain in youths with Duchenne muscular dystrophy: A model for pediatric neuromuscular disease. *Phys Med Rehabil Clin N Am.* 2005; 16(4):1113–1124. [PubMed: 16214064]
20. Wilson S, Washington LA, Engel JM, Jensen MP. Perceived social support, psychological adjustment, and functional ability in youths with physical disabilities. *Rehabil Psychol.* 2006; 51(4):322–330.
21. Washington LA, Wilson S, Engel JM, Jensen MP. Development and preliminary validation of a pediatric measure of community integration: The Pediatric Community Participation Questionnaire (PCPQ). *Rehabil Psychol.* 2007; 52(2):241–245.
22. Folstein MF, Folstein SE, McHugh PR. Mini-Mental State. A practical method for grading the cognitive state of patients for the clinician. *J Psychiat Research.* 1975; 12(3):189–198. [PubMed: 1202204]
23. Roccaforte WH, Burke WJ, Bayer BL, Wengel SP. Validation of a telephone version of the Mini-Mental State Examination. *J Am Geriatrics Soc.* 1992; 40(7):697–702.
24. Ouvrier RA, Goldsmith RF, Ouvrier S, Williams IC. The value of the Mini-Mental Status Examination in childhood: A preliminary study. *J of Child Neurol.* 1993; 8(2):145–148. [PubMed: 8505476]
25. Jensen MP, Turner JA, Romano JM, Lawler BK. Relationship of pain-specific beliefs to chronic pain adjustment. *Pain.* 1994; 57(3):301–309. [PubMed: 7936708]
26. Jensen MP, Karoly P, Huger R. The development and preliminary validation of an instrument to assess patients' attitudes toward pain. *J Psychosomatic Res.* 1987; 31(3):393–400.
27. Jensen MP, Karoly P. Control beliefs, coping efforts, and adjustment to chronic pain. *J Consult Clin Psych.* 1991; 59(3):431–438.
28. Strong J, Ashton R, Chant D. The measurement of attitudes towards and beliefs about pain. *Pain.* 1992; 48(2):227–236. [PubMed: 1534165]
29. Jackson, DN. A sequential system for personality scale development. In: Spielberg, CD., editor. *Current topics in clinical and community psychology (Vol. 2).* New York: Academic Press; 1970. p. 61-96.
30. Jackson, DN. Scale development. In: Kazdin, AE., editor. *Encyclopedia of psychology.* New York: Oxford University Press; 2000. p. 148-151.

31. Comrey, AL.; Lee, HB. A first course in factor analysis. 2nd. Hillsdale, NJ: Erelbaum; 1992.

Author Manuscript

Author Manuscript

Author Manuscript

Author Manuscript

Table 1

Demographic characteristics

	%	n	M	SD	Range
Age		102	14.19	2.90	8-20
Sex					
Male	56.7	59			
Female	43.3	45			
Ethnicity					
Caucasian	74.5	76			
Asian	11.8	12			
Native American	2.9	3			
African American	1.9	2			
Hispanic	1.9	2			
Combination	2.9	3			
Other	3.9	4			
Disability Type					
Cerebral Palsy	32.7	34			
Limb Deficiency	24.0	25			
Spina Bifida	20.2	21			
Neuromuscular Disease	13.5	14			
Spinal Cord Injury	9.6	10			

Two subjects did not provide demographic information.

Percentages 100 due to rounding.

Table 2

Items Removed from Survey of Pain Attitudes (Jensen, Turner, Romano, and Lawler, 1994)

- Pain means something is being hurt in my body
- My family understands how much I hurt
- I can't control my pain
- My pain will never go away
- When I relax my pain gets better
- Exercise makes my pain worse
- If I change how I feel, I can hurt less
- My pain would stop anyone from doing things

Author Manuscript

Author Manuscript

Author Manuscript

Author Manuscript

Table 3**Survey of Pain Attitudes (Pediatric Version; Peds-SOPA)**

Please tell me how much you agree with each thing that I tell you. A “0” means you do not agree with what I say, a “1” means that you are not sure, and a “2” means that you agree with what I say.

0 = I do not agree with this.

1 = I am not sure.

2 = I agree with this.

1.	I can do things to make me hurt less ^c	0	1	2
2.	Pain means I need to exercise more ^{ex*}	0	1	2
3.	I think doctors should get rid of my pain ^{mc}	0	1	2
4.	When I hurt, I want my family to treat me better ^s	0	1	2
5.	Medicine makes my pain hurt less ^m	0	1	2
6.	Being scared makes me hurt more ^e	0	1	2
7.	I can't do anything to make my pain hurt less ^{c*}	0	1	2
8.	When I hurt, I want my family to be nicer to me ^s	0	1	2
9.	It's a doctor's job to get rid of pain ^{mc}	0	1	2
10.	My family should help me when I hurt ^s	0	1	2
11.	Being upset makes my pain worse ^e	0	1	2
12.	Exercise should make my pain hurt less ^{ex*}	0	1	2
13.	Medicine helps my pain ^m	0	1	2
14.	A doctor's job is to get rid of my pain ^{mc}	0	1	2
15.	My family needs to help me more when I hurt ^s	0	1	2
16.	Feeling sad makes me hurt more ^e	0	1	2
17.	I can control my pain by changing what I think ^c ...	0	1	2
18.	My pain stops me from moving or exercising much ^d	0	1	2
19.	I can control my pain ^c	0	1	2
20.	I know my doctors can get rid of my pain ^{mc}	0	1	2
21.	I know I can learn to control my pain ^c	0	1	2
22.	My pain does not stop me from doing stuff ^{d*}	0	1	2
23.	My pain will never go away ^{mc*}	0	1	2
24.	Bad feelings can make my pain worse ^e	0	1	2
25.	If I do not exercise, my pain gets worse ^{ex*}	0	1	2
26.	I can't control my pain ^{c*}	0	1	2
27.	Pain won't stop me from doing what I really want to do ^{d*} ...	0	1	2
28.	The right doctor will know how to make me hurt less ^{mc} ...	0	1	2
29.	Exercise can decrease the amount of pain I feel ^{ex*}	0	1	2

Note: c = Control items, d = Disability items, ex = Exercise items, e = Emotion items, m = Medication items, s = Solicitude items, mc = Medical cure items. Scale score = average of items in the scale, with * items reverse scored (2 minus rating given) prior to averaging.

Table 4

Survey of Pain Attitudes—Pediatric Version (Pediatric SOPA; Jensen, Turner, Romano, & Lawler, 1994)

-
- 37-item scale
 - 0 = *I do not agree with this*
 - 1 = *I am not sure*
 - 2 = *I agree with this*
 - Items 1, 7*, 11*, 17, 23, 25, 27, 32*, 35 are averaged for a control subscore
 - Items 2, 3*, 16*, 22, 31*, 36* are averaged for a harm subscore
 - Items 4*, 6, 12, 14, 20 are averaged for a solicitude subscore
 - Items 5, 8*, 13, 19, 26, 29*, 34 are averaged for a medical cure subscore
 - Items 9, 18 are averaged for a medication subscore
 - Items 10, 15, 21, 30 are averaged for an emotion subscore
 - Items 24, 28*, 33*, 37 are averaged for a disability subscore
 - Items marked * are reverse scored prior to averaging
 - Possible control subscores range from 0 to 2
 - Possible harm subscores range from 0 to 2
 - Possible solicitude subscores range from 0 to 2
 - Possible medical cure subscores range from 0 to 2
 - Possible medication subscores ranges from 0 to 2
 - Possible emotion subscores range from 0 to 2
 - Possible disability subscores range from 0 to 2
 - Subscores with missing items are averaged using the number of items with responses
 - See syntax files to reverse score items and to compute the subscores (for complete responses)
-

Author Manuscript

Author Manuscript

Author Manuscript

Author Manuscript

Table 5

Pearson Correlations between the Peds-SOPA Subscales and the Average Pain in the Last Week (NRS) and Brief Pain Inventory (BPI)

Peds-SOPA Subscales	<i>Average Pain in the Last Week (NRS)</i>	<i>Brief Pain Inventory (BPI)</i>
Control	-.011	-.126
Exercise	.002	.139
Solicitude	.045	.176
Medical Cure	.119	.287
Medication	.030	.070
Emotion	.195	.274
Disability	.081	.363

Note: boldfaced correlations are statistically significant at 0.05 level

Author Manuscript

Author Manuscript

Author Manuscript

Author Manuscript