Validity and reliability of the Survey of Pain Attitudes (SOPA-28 items) in the Portuguese Language

ORIGINAL ARTICLE

VALIDADE E CONFIABILIDADE DO INVENTÁRIO DE ATITUDES FRENTE À DOR CRÔNICA (IAD-28 ITENS) EM LINGUA PORTUGUESA

VALIDEZ Y CONFIABILIDAD DEL INVENTARIO DE ACTITUDES HACIA EL DOLOR CRÓNICO (IAD-28 ÍTEMS) EN LENGUA PORTUGUESA

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ABSTRACT

This is the re-assessment of reliability and validity of Survey of Pain Attitudes-brief (SOPA-brief) version, with 183 chronic non-cancer pain patients. The SOPA-brief assesses the chronic pain beliefs related to emotion, control, solicitude, medical cure, harm, disability and medication. The analysis showed seven domains and 28 items. There were differences in the allocation of two items and after analyses they were excluded. Four domains had good Cronbach's alpha values (between 0.74 and 0.85) and three had moderate (between 0.58 and 0.65). The SOPA-brief version in Portuguese language is superior to its first version.

KEY WORDS

Pain.
Attitude.
Cognition.
Reproducibility of results.
Validation studies.

RESUMO

Trata-se da reavaliação da confiabilidade e validade do Inventário de Atitudes frente à Dor Crônica-versão breve, (IAD-breve) com 183 pacientes com dor crônica não oncológica. O IAD-breve 28 itens avalia as crenças sobre dor crônica relacionadas ao controle, emoção, solicitude, cura médica, dano físico, incapacidade e medicação. A análise mostrou sete domínios e 28 itens. Houve diferenças na alocação de dois itens e, após análises, optou-se por retirá-los. Quatro domínios apresentaram valores de alfa de Cronbach considerados bons (entre 0,74 e 0,85) e em três, foram moderados (entre 0,58 e 0,65). O IAD-breve 28 itens em língua portuguesa é superior à primeira versão.

DESCRITORES

Dor.
Atitude.
Cognição.
Reprodutibilidade dos testes.
Estudos de validação.

RESUMEN

Este estudio trata la reevaluación de la confiabilidad y validez del Inventario de Actitudes frente al Dolor Crónico-versión breve, (IAD-breve) con 183 pacientes con dolor crónico no oncológico. El IAD-breve 28 ítems evalúa las creencias en el dolor crónico relacionadas al control, emoción, solicitud, cura médica, daño físico, incapacidad y medicación. El análisis resultó en siete dominios y 28 ítems. Hubo diferencias en la ubicación de dos ítems y, después de análisis, se decidió removerlos. Cuatro dominios presentaron valores de alfa de Cronbach considerados buenos (entre 0,74 y 0,85) y en tres, moderados (entre 0,58 y 0,65). El IAD-breve 28 ítems en lengua portuguesa es superior a la primera versión.

DESCRIPTORES

Dolor.
Actitud.
Cognición.
Reproducibilidad de resultados.
Estúdios de validación.

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INTRODUCTION

Beliefs have the ability to influence pain, since they stem from the integration of the person's sensorial peripheral stimulus (injured tissue), emotions (anxiety, depression, fear), and cognitive (such as beliefs, expectations, assignment of meanings to events) function . Beliefs, attitudes, values and behaviors are culturally acquired.

Beliefs are pre-established ideas about ourselves, about others, and about our surrounding situations and the environment. They are culturally shared conceptions that are considered as absolute truths, exactly the way things appear to be[1,2-4]. Beliefs regarding pain and the control over it (or perceived lack of control) should not be seen as peripheral to the experience of chronic pain. Whether true or false, functional or dysfunctional, beliefs can become the internal reality that controls the patient's thoughts and behavior. Dysfunctional beliefs are those in what patients twist reality, often negatively, interfering in their ability to reach goals. Some studies show that beliefs are able to interfere in the experience of pain (intensity, discomfort), in the physical functionality (degree of impairment, level of physical activity), and also in the psychic (depression, thought profile) and social (return to work, leisure) functionalities[5-7]. Dysfunctional beliefs are capable of intensifying the experience of pain and altering the patient's adherence to the treatment of chronic pain[5-6]. The acknowledgement of the suffering patient's beliefs regarding the chronic pain allows for a plan of action aimed at changing those conceptions, if necessary, and improving therapeutic results.

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Attitudes are affective, relatively stable dispositions that imply the tendency to positively or negatively respond to objectives and objects (symbol, phrase, person, institution, idea, belief, ideal,), and can be learned. These actions involve orientation and intensity towards the objective-object. Orientation means the approach to or the rejection of something, to view it favorably or unfavorably, to agree or disagree. Intensity is the force with which the object is approved or disapproved. One can approve or disapprove something at different intensities, or even show a lack of attitude towards the same object. These are dispositions organized towards action, and reflected in the behavior of individuals and groups[2-3,9-11].

In regards to chronic pain, the concerns of acknowledging and measuring the attitudes of sick people began in 1985[12-17], and among the existing inventories, the Survey of Pain Attitudes (SOPA) is deemed to be one of the finest[17].

A previous study tested the psychometric properties of the translated SOPA-Brief version (28 items) - into the Portuguese language in 69 patients suffering from chronic pain[8]. Unfortunately , from the 69 people that comprised the study, 24 had oncologic-based chronic pain, which created a conceptual limitation, since there are clear distinctions between the characteristics of oncologic and non-oncologic chronic pain. For that reason, and due to the small size of the sample, it was deemed necessary to reassess the instrument's reliability and validity, enhancing the sample and including only patients with non-oncologic chronic pain, which formed the basis for this study.

SOPA-brief: domains and items

The SOPA-brief contains 30 items that correspond to seven domains of beliefs and attitudes towards pain: medical healing, pain control, attention, impairment, medication, emotion, and physical damage[8]. The instrument was validated in the Portuguese language and was named "Atitudes frente à Dor Versão Breve (IAD-Breve)[8] .Following its validation, the instrument was applied in a series of national studies.

The SOPA-brief is self-applicable. The assessed person indicates agreement or disagreement with each of four assertions in a 5-score Likert-style scale. Response scores correspond to 0 = totally false; 1 = false; 2 = neither true nor false; 3 = sometimes true; and 4 = always true. The score of each scale or domain is calculated by the sum of the response scores in each item, divided by the number of response items. The average final score in each scale can range from 0 to 4. There are reversed items that must present reversed scores prior to the addition calculation (4, 5, 11, 23, 24, 26, 27, 28, and 29). The score reversion is performed by a 4-fold subtraction of the score chosen by the patient. The scores in the seven domains or scales are not added to reach a total score. There are neither cut points nor right or wrong answers, but there are guidelines for more desirable answers, as they are considered as hypothetically more adaptive by the inventory's author.

The definition, the corresponding questions, and the desirable score for each SOPA-brief domain are presented in Table 1.

Table 1 - Brazilian version (30 items) of the Survey of Pain Attitudes (SOPA-brief): deffinition of the domains, items, desirable score, variation, inverted items and score calculation - São Paulo - 2008

Domain	Definition To what extent the patients believes that...	Items	Desirable score variation	Score calculation domain
Solicitude	Other people, especially family members, should show more solicitude when they feel pain.	3, 7, 9, 14,18	0 0-20	$\frac{3+7+9+14+18}{5}$
Emotion	Their emotions affect the pain they feel.	6, 10,15,25	4 0 - 16	$\frac{6+10+15+25}{4}$
Medical cure	Medicine can cure their pain.	4, 8, 21, 24, 29	0 0-20	$\frac{4+8+21+24+29}{5}$
Control	They can control their pain.	1, 12, 17, 20, 22	4 0-20	$\frac{1+12+17+20+22}{5}$
Physical harm	Pain means you are *hurting* yourself so you shoul avoid exercising.	11, 16, 19, 27, 28	0 0-20	$\frac{11+16+19+27+28}{5}$
Disability	They are disabled due to pain.	23, 26, 30	0 0-12	$\frac{23+26+30}{3}$
Medication	Medications are the best treatment for chronic pain.	2, 5, 13	0 0-12	$\frac{2+5+13}{3}$
Inverted items	4, 8, 11, 23, 24, 26, 27, 28 e 29	Score reversion is done by subtracting the score chosen by the patients from 4		

METHOD

The sample was one of convenience, composed of 183 patients suffering from non-oncologic chronic pain. Patients responded to the 30-item SOPA-brief and demographic (gender, age, marital status, education level) and pain (time and intensity of pain) characteristics were listed. Patients were recruited from the Worker Healthcare Reference Center of the University of Sao Paulo, from the Rheumatology Service of the Clinics Hospital of the Medical School of the University of Sao Paulo, and from the Pain Clinic , Clinics Hospital of the Medical School of the University of Sao Paulo, following the authorization of the Ethics Committee on Research from each the involved institutions.

From the total sample of patients, 88.5% were men, averaging 41.7 years of age (± 12.6), with a median of 40 years and ranging from 20 and 79 years. Of the assessed people, 53% were married or had a stable partner , and 30.1% were single or without any stable partner . The average education level was 8.3 years (± 3.9) and the median reached 8 years, ranging from 0 to 18 years.

Of the 183 included patients, 60.1% displayed pain due to RSI and 18% presented fibromyalgia. Miofascial (9.3%) and neuropathic (10.4%) pain occurred at a lower frequency, and 2.2% of the patients chronic pain as a result of other causes. Patients reported an average length of time experiencing pain of 49.5 (± 65.1) months, with a median of 36 months. The intensity of the pain was characterized as light (1 to 3), as occurred in 3.4% of the cases; moderate (4 to 7), occurring in 21.2% of the sample; and intense (8 to 10), occurring in 75.4% of the cases. The average intensity of the most severe pain was 8.4 months (± 1.9), with a median of 9.

In order to assess the composition of the domains, the Principal Components Factorial Analysis with Varimax rotation was applied. The internal consistency of the scales was assessed by means of the Cronbach's alpha coefficient. This coefficient varies from 0 to 1; the higher the value, the better the reliability. The analysis considered the correlation of each item with the scale, as well as the change in the Cronbach's alpha coefficient for the event of exclusion of the item. Next, another analysis verified whether or not the domains and items were kept the same in relation to the initial validation in the Portuguese language[8].

RESULTS AND DISCUSSION

The 30-item SOPA-brief in the Portuguese language is presented in Table 2.

Table 2 - Survey of Pain Attitudes with 30 items (SOPA-brief) - São Paulo - 2008

	Totalmente falso	Quase falso	Nem Verdadeiro Nem falso	Quase verdadeiro	Totalmente verdadeiro
1. Muitas vezes eu consigo influenciar a intensidade da dor que sinto.	0	1	2	3	4
2. Provavelmente eu sempre terei que tomar medicamentos para dor.	0	1	2	3	4
3. Sempre que eu sinto dor eu quero que a minha família me trate melhor.	0	1	2	3	4
4. Eu não espero cura médica para a minha dor.	0	1	2	3	4
5. O maior alívio da dor que eu tive foi com o uso de medicamentos.	0	1	2	3	4
6. A ansiedade aumenta a minha dor.	0	1	2	3	4
7. Sempre que eu sinto dor as pessoas devem me tratar com cuidado e preocupação.	0	1	2	3	4
8. Eu desisti de buscar a completa eliminação da minha dor através do trabalho da medicina.	0	1	2	3	4
9. É responsabilidade daqueles que me amam ajudarem-me quando eu sentir dor.	0	1	2	3	4
10. O estresse na minha vida aumenta a minha dor.	0	1	2	3	4
11. Exercício e movimento são bons para o meu problema de dor.	0	1	2	3	4
12. Concentrando-me ou relaxando-me consigo diminuir a minha dor.	0	1	2	3	4
13. Remédio é um dos melhores tratamentos para dor crônica.	0	1	2	3	4
14. A minha família precisa aprender a cuidar melhor de mim quando eu estiver com dor.	0	1	2	3	4
15. A depressão aumenta a dor que sinto.	0	1	2	3	4
16. Se eu me exercitasse poderia piorar ainda mais o meu problema de dor.	0	1	2	3	4
17. Eu acredito poder controlar a dor que sinto mudando meus pensamentos.	0	1	2	3	4
18. Muitas vezes quando eu estou com dor eu preciso de mais carinho do que estou recebendo agora.	0	1	2	3	4
19. Alguma coisa está errada com meu corpo que impede muito movimento ou exercício.	0	1	2	3	4
20. Eu aprendi a controlar a minha dor.	0	1	2	3	4
21. Eu confio que a medicina pode curar a minha dor.	0	1	2	3	4
22. Eu sei com certeza que posso aprender a lidar com a minha dor.	0	1	2	3	4
23. A minha dor não me impede de levar uma vida fisicamente ativa.	0	1	2	3	4
24. A minha dor física não será curada.	0	1	2	3	4
25. Há uma forte ligação entre as minhas emoções e a intensidade da minha dor.	0	1	2	3	4
26. Eu posso fazer quase tudo tão bem quanto eu podia antes de ter o problema da dor.	0	1	2	3	4
27. Se eu não fizer exercícios regularmente o problema da minha dor continuará a piorar.	0	1	2	3	4
28. O exercício pode diminuir a intensidade da dor que eu sinto.	0	1	2	3	4
29. Estou convencido de que não há procedimento médico que ajude a minha dor.	0	1	2	3	4
30. A dor que sinto impediria qualquer pessoa de levar uma vida ativa.	0	1	2	3	4

Factorial Analysis of the 30-item Brief SPA carried out with 183 patients suffering from chronic pain

Table 3 presents the results of the factorial analysis performed with the 30 items of the first validation study for the Brief SPA in the Portuguese language[8]. The analyses indicated that some items should be excluded. The removal of items changed the numeric sequence. Aiming at avoiding misunderstandings when comparing the 30-item scale and the *new* scale, we decided to add the letter *i* (standing for Inglês) following each item of the 30-item Brief SPA.

Table 3 - Correlations between items and factors of the SOPA-brief with 30 items in 183 patients - São Paulo - 2008

Item	FACTORS 1 Emotion	2 Solicitude	3 Harm	4 Medical cure	5 Control	6 Disability	7 Medication
6i	**0.804**	0.142	-0.065	-0.013	0.018	0.055	0.121
15i	**0.787**	0.275	-0.135	-0.052	0.046	0.133	-0.035
10i	**0.786**	0.144	-0.053	-0.151	-0.001	0.160	0.033
25i	**0.720**	0.099	-0.123	-0.078	0.148	0.036	-0.057
12i	**0.447**	0.193	-0.170	-0.026	0.299	-0.142	-0.104
7i	0.142	**0.779**	-0.069	0.007	-0.206	0.057	0.094
3i	0.313	**0.731**	-0.034	-0.132	-0.129	-0.043	0.093
14i	0.189	**0.692**	-0.051	-0.114	0.139	0.246	0.083
18i	0.234	**0.679**	0.050	0.058	0.206	0.143	-0.016
9i	0.036	**0.593**	-0.026	-0.049	0.176	0.104	0.359
27i	-0.127	-0.005	**0.818**	0.100	-0.107	0.041	-0.060
28i	-0.210	0.007	**0.817**	0.063	-0.175	0.012	-0.021
11i	-0.149	-0.008	**0.808**	-0.152	-0.045	0.112	0.029
16i	0.082	-0.097	**0.653**	-0.195	0.184	0.285	0.227
24i	-0.079	0.036	-0.119	**0.670**	0.080	-0.156	-0.104
29i	0.002	-0.248	-0.146	**0.624**	0.006	0.204	0.107
4i	-0.171	-0.003	0.000	**0.593**	-0.078	-0.097	-0.028
21i	0.091	-0.032	-0.041	**0.539**	0.059	-0.107	0.396
8i	-0.005	-0.005	0.115	**0.531**	0.011	0.091	-0.125
2i	0.077	0.239	-0.040	**-0.304**	0.082	0.273	0.303
20i	0.111	-0.069	0.018	0.000	**0.800**	-0.083	-0.058
22i	0.019	0.072	-0.158	-0.049	**0.769**	0.011	0.008
17i	0.399	0.125	-0.069	0.198	**0.438**	-0.308	-0.104
1i	0.245	0.213	0.002	0.134	**0.402**	-0.242	0.275
23i	0.071	0.096	0.089	-0.017	-0.174	**0.709**	-0.105
26i	-0.064	0.258	0.106	0.009	-0.268	**0.605**	-0.158
19i	0.248	0.028	0.076	0.039	0.038	**0.574**	0.229
30i	0.021	0.413	0.223	-0.144	0.162	**0.525**	0.040
13i	-0.127	0.175	0.049	0.024	-0.068	-0.050	**0.802**
5i	0.041	0.112	0.044	-0.115	-0.031	0.039	**0.796**

As shown in Table 3, the analysis presented seven subscales (domains), similar to the previous study, which was performed with 69 patients[8],and to the original Tait and Chibnall's study[18] .However, some items were allocated to distinct domains of the Tait and Chibnall study (items 2i and 12i) and were different from the first Portuguese language study (2i, 12i, and 19i). Item 2i was absent in the *medication* domain and was instead included in the *medical healing* domain; item 12i was absent in the *control* domain and was included in the *emotion* domain; item 19i was allocated to the *impairment* domain, in accordance with the original English version, thus opposing its allocation in the *physical damage* domain, as was observed in the first Portuguese language validation process (Tables 1 and 3).

In analyzing item 2i, *I will probably always have to take medicine for pain*, it can be observed that the item refers to the obligation to take medicine (the original idea), but it also points to the issue of chronicity, or the non-cure of the disease (I have to always take medicine), thus explaining its incorrect allocation to the *medical healing* item. Item 12i, *When I focus or relax I am able to decrease my pain* was also analyzed, and although it seems quite clear that it refers to the issue of control (I focus and relax and thus I interfere in the pain process), patients probably associated the acts of focusing and relaxing, which are mental attitudes, with emotions, connecting relaxation with the state of being calm, and linking the state of focusing with being tense or distressed. Item 19i, *Something is wrong with my body, and it reduces much movement and exercise*, points to the idea of impairment (Tait and Chibnall's original domain confirmed in the present study), but also refers to the idea of physical damage (this item was included in this domain in the first Brazilian study)[8] These three

items indicate ambiguity and future studies might be able to confirm which meaning is more appropriate for Brazilian patients.

Besides analyzing meanings towards the decision regarding the adequate position of the item in the domain, the following criterion was adopted: a minimum factorial load of 0.4 in the domain, so that its presence could improve, or at least does not critically worsen, the internal consistency assessed by the Cronbach's alpha. Hence, the internal consistency analysis (Table 4), together with the factorial loads achieved , allowed for the decision that the best solution is to exclude two items (2i and 12i) in the Brazilian version of the SOPA-brief, as well as to accept the allocation of item 19i to the *impairment* domain.

SOPA-brief Consistency Analysis (n=183)

The set of data in Table 4 shows that four out of the seven domains presented good alpha values (between 0.74 and 0.85), and moderate values in three (between 0.58 and 0.65).

Table 4 - Comparison between the internal consistency rates of the English language version of the SOPA-brief with 30 items - São Paulo - 2008

	Tait and Chibnall (1977)		Estudo com 69 doentes		Estudo com 183 doentes	
Domains	**α**	**Number of items**	**α**	**Number of items**	**α**	**Number of items**
Solicitude	0.83	5	0.83	5	0.81	5
Emotion	0.80	4	0.89	4	0.85	4
Medical cure	0.72	5	0.55	5	0.58	5
Control	0.70	5	0.77	5	0.65	4*
Pysical harm	0.71	4	0.76	4	0.81	4
Disability	0.70	4	0.60	3	0.63	4
Medication	0.56	3	0.57	3	0.74	2**

* Excluded item 12i ** Excluded item 2i

Note: SPA-brief 30 items in the Portuguese language with 69 patients and SPA-brief 30 items in the Portuguese language with 183 patients.

When the results of our study with 183 patients are compared with Tait and Chibnall's, we noticed that there was a decrease in the Cronbach's alpha coefficient in the *medical healing* domain (from 0.72 to 0.58), as well as an improvement in the *physical damage* (from 0.71 to 0.81) and in the *medication* (from 0.56 to 0.74) domains. Another observation is the decrease in the *control* (from 0.70 to 0.65) and *impairment* (from 0.70 to 0.63) domains.

Comparing the results of two other Brazilian studies (including, respectively, 69 and 183 patients), it is observed that the alpha values show quite relevant differences in three domains. The *control* domain indicated a decrease from 0.77 to 0.65; the *medication* domain showed an increase from 0.57 to 0.74; and the *physical damage* domain increased from 0.76 to 0.81.

In this present study (n=183), all seven domains of the SOPA-brief were ratified; five (attention, emotion, medical healing, physical damage, and impairment) confirmed the same number of items as the Tait and Chibnall inventory; in two domains (control and medication), an item was removed . Including the above-mentioned explanations, this exclusion was also justified by the following reasons:

Item 2i (*I will probably always have to take medicine for pain*) should be inserted into the *Medication* domain, but it was excluded because it did not meet the criterion of a minimum factorial load of 0.4 in any domain; its removal improved the internal consistency of the *Medication* domain. The *Medication* domain in item 2i presented an Alpha of 0.60, and its removal increased the alpha to 0.74. In addition , the correlation of item 2i with other items in the *Medication* domain was low (0.22). For these reasons , item 2i was excluded from the Brazilian Version of the SOPA-brief.

Item 12i should be inserted into the *Control* domain (*By focusing or relaxing I can decrease my pain*), but its factorial load in this domain only reached 0.29, well below the limit set by the criterion (0.4). Item 12i presented its best factorial load in the *Emotion* domain (0.44). However, its removal increases this domain's alpha from 0.82 to 0.85. Thus, it was decided that this item would be excluded from the Brazilian version.

The allowance for item 19i to be inserted into the *Impairment* domain increased this domain's alpha from 0.60 (previous Brazilian study, with 69 patients) to 0.63 (current study with 183 patients).

This article reveals that the re-test of the SOPA-brief psychometric properties, after the enhancement and homogenization of the sample, warranted the removal of two items, a decision that improved some alpha values, especially in the *Medication* and *Physical damage* domains, but also in the *Medical healing* and *Impairment* domains. The reduction of the scale was desirable, since it became more operational for daily clinical practices.

The Brazilian version of the SOPA-brief composed of 28 items and seven domains can be observed in Table 5, and the key for scoring can be found in Table 6.

Table 5 - Survey of Pain Attitudes with 30 items (SOPA-brief: 28 items) - São Paulo - 2008

	Totalmente falso	Quase falso	Nem Verdadeiro Nem falso	Quase verdadeiro	Totalmente verdadeiro
1. Muitas vezes eu consigo influenciar a intensidade da dor que sinto.	0	1	2	3	4
3. Sempre que eu sinto dor eu quero que a minha família me trate melhor.	0	1	2	3	4
4. Eu não espero cura médica para a minha dor.	0	1	2	3	4
5. O maior alívio da dor que eu tive foi com o uso de medicamentos.	0	1	2	3	4
6. A ansiedade aumenta a minha dor.	0	1	2	3	4
7. Sempre que eu sinto dor as pessoas devem me tratar com cuidado e preocupação.	0	1	2	3	4
8. Eu desisti de buscar a completa eliminação da minha dor através do trabalho da medicina.	0	1	2	3	4
9. É responsabilidade daqueles que me amam ajudarem-me quando eu sentir dor.	0	1	2	3	4
10. O estresse na minha vida aumenta a minha dor.	0	1	2	3	4
11. Exercício e movimento são bons para o meu problema de dor.	0	1	2	3	4
13. Remédio é um dos melhores tratamentos para dor crônica.	0	1	2	3	4
14. A minha família precisa aprender a cuidar melhor de mim quando eu estiver com dor.	0	1	2	3	4
15. A depressão aumenta a dor que sinto.	0	1	2	3	4
16. Se eu me exercitasse poderia piorar ainda mais o meu problema de dor.	0	1	2	3	4
17. Eu acredito poder controlar a dor que sinto mudando meus pensamentos.	0	1	2	3	4
18. Muitas vezes quando eu estou com dor eu preciso de mais carinho do que estou recebendo agora.	0	1	2	3	4
19. Alguma coisa está errada com meu corpo que impede muito movimento ou exercício.	0	1	2	3	4
20. Eu aprendi a controlar a minha dor.	0	1	2	3	4
21. Eu confio que a medicina pode curar a minha dor.	0	1	2	3	4
22. Eu sei com certeza que posso aprender a lidar com a minha dor.	0	1	2	3	4
23. A minha dor não me impede de levar uma vida fisicamente ativa.	0	1	2	3	4
24. A minha dor física não será curada.	0	1	2	3	4
25. Há uma forte ligação entre as minhas emoções e a intensidade da minha dor.	0	1	2	3	4
26. Eu posso fazer quase tudo tão bem quanto eu podia antes de ter o problema da dor.	0	1	2	3	4
27. Se eu não fizer exercícios regularmente o problema da minha dor continuará a piorar.	0	1	2	3	4
28. O exercício pode diminuir a intensidade da dor que eu sinto.	0	1	2	3	4
29. Estou convencido de que não há procedimento médico que ajude a minha dor.	0	1	2	3	4
30. A dor que sinto impediria qualquer pessoa de levar uma vida ativa.	0	1	2	3	4

Note: Items 2 and 12 are not included

Table 6 - Brazilian version (28 items) of the Survey of Pain Attitudes (SOPA-brief 28 items): items according to domain, desirable score, possible variation, inverted items and score calculation - São Paulo - 2008

Domain	Items	Desirable score variation	Score calculation/domain
Solicitude 5 items	3, 7, 9, 14,18	0 0-20	$\frac{3+7+9+14+18}{5}$
Emotion 4 items	6, 10,15,25	4 0 - 16	$\frac{6+10+15+25}{4}$
Medical cure 5 items	4, 8, 21, 24, 29	0 0-20	$\frac{4+8+21+24+29}{5}$
Control 4 items	1, 17, 20, 22	4 0-16	$\frac{1+17+20+22}{4}$
Physical harm 4 items	11, 16, 27, 28	0 0-16	$\frac{11+16+19+27+28}{4}$
Disability 4 items	19, 23, 26, 30	0 0-16	$\frac{23+26+30}{4}$
Medication 2 items	5, 13	0 0-8	$\frac{5+13}{2}$
Excluded items	2 and 12 - These items are not included in the SPA-brief 28 items		
Inverted items	4, 8, 11, 23, 24, 26, 27, 28 and 29 Score reversion is done by subtracting the score chosen by the patients from 4		

CONCLUSION

The 28-item SOPA-brief in the Portuguese language received the affirmation of seven domains and 28 items. When the first version (30 items)[8] is compared with the second (28 items), the second version shows a clear improvement in the reliability of the *Medication*, *Physical damage*, *Impairment*, and *Medical healing* domains. On the other hand, the Alpha values decreased in the *Control*, *Attention* and *Emotion* domains, but in these last two domains, reliability was kept at an acceptable level. The second version of the SOPA-brief (28 items) is superior to the first. However, the English and Portuguese versions of the SOPA-brief present, in some domains, median reliability values, suggesting the need to improve the instrument.

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