Portuguese translation, cross-cultural adaptation and reliability of the questionnaire «Start Back Screening Tool» (SBST)

Raimundo A[1,5], Parraca JA[1,5], Batalha N[1,5], Tomas-Carus P[1,5], Branco JC[2], Hill J[3], Gusi N[4]

ACTA REUMATOL PORT. 2017;42:38-46

ABSTRACT

Objective: To translate and perform the cross-cultural adaptation of the StarT Back Screening Tool (SBST) questionnaire to assessment and screening low back pain for Portuguese application, and test its reliability.

Method: To establish conceptual equivalence in item, semantic and operational concern, there were performed two translations into Portuguese in an independently way. A combined version was obtained by consensus among the authors of the translations in order to be achieved a noticeable version in semantic terms and easy to understand. The synthesis version was administered to 40 subjects distributed by gender, young and older adults, with and without low back pain. Through cognitive interviews with the subjects of the sample, clarity, the acceptability, as well as the familiarization of the Portuguese version was evaluated, promoting the changes necessary for a better understanding. The final Portuguese version of the questionnaire was then back-translated into the original language. To evaluate the SBST-Portugal psychometric properties, 31 subjects with low back pain performed two interviews.

Results: Participants interviewees reported that in general the items were clear and comprehensible achieving face validity. The reliability of the SBST-Portugal showed a Kappa value of 0,74 (95%IC 0.53-0.95), and the internal consistency (Cronbach's alpha) was 0,93 for the total score and 0,93 for the psychosocial subscale.

Conclusion: The Portuguese version of SBST questionnaire proved to be equivalent to the original English version and reliable for the Portuguese population with low back pain. Being an instrument of easy access and application it could be use in primary care.

Keywords: Questionnaire; Low back pain; Quality of life.

1. Departamento de Desporto e Saúde, Escola de Ciências e Tecnologia, Universidade de Évora
2. CEDOC, Faculdade de Ciências Médicas e Serviço de Reumatologia, CHLO, Universidade Nova de Lisboa; EPE-Hospital Egas Moniz, Universidade Nova de Lisboa
3. Arthritis Research UK Primary Care Centre, Keele University
4. Faculdad de Ciencias del Deporte, Universidad da Extremadura
5. Research Centre in Sports Sciences, Health Sciences and Human Development, CIDESD, GERON Research Community, Portugal

INTRODUCTION

The low back pain (LBP) is a common clinical problem with a great socioeconomic importance[1]. Chronic low back pain, considered as a complex disease, becomes sometimes a real challenge to treat and is associated with several adverse consequences including physical disability[2]. It is estimated that about 80% of the population suffers at some moment in life, pain in the lower back[3], being more common in women and people between 40 and 80 years old. About 11.9% of patients report that the pain limited their ability to work on more than one day, and 23.2% more than a month[4]. According to the results of EpiReumaPt / ReumaCensus, the largest epidemiological study of rheumatic diseases held in Portugal, LBP is the most common rheumatic disease for both sexes, with a prevalence of 26.4%, being more frequent in females (29.6% versus 22.8%)[5]. This disease increases with age, verifying their higher prevalence among 46-55 years[5].

Low back pain has contributed to the increase in health expenditures, deprived of any improvement in health status of the patients[6]. The indirect costs of chronic back pain and joints estimated for Portugal are around €738.85 million: €280.95 million due to absenteeism and €458.90 million to the reduction of the employment caused by the early retirements and other forms of absence in the labour market[7].

The consequences of chronic pain affect the quality of life of those patients, becoming important that health professionals could be provided with tools that help identifying those patients with LBP, who require an early and more focussed secondary prevention[8]. For early detection of those patients, it is urgent to identify prognostic factors[9]. It is also important to stratify the risk in order to classify the patients in terms of priority in achieving primary health care[9]. In this regard, recently it has been created the questionnaire Start Back Screening Tool (SBST)[10], a simple, concise, self administrable, valid and reliable questionnaire for screening the LBP[8,10-14]. Knowing that psychosocial factors such as catastrophizing, pain kinesiophobia, and depressive symptoms[15], can affect the prognosis of low back pain[16], the application of this questionnaire will classify patients with low back pain, in low, medium and high risk[9] which can help to take a right decision for the treatment[14]. The SBST is available in several languages, however, it is not yet for the Portuguese of Portugal, despite being available in Portuguese of Brazil[14]. Because there are differences between these two languages in semantic, idiomatic and conceptual terms, this study aims to achieve the translation and cultural adaptation of SBST to the Portuguese of Portugal, and analyse the psychometric properties through test-retest reliability, internal consistency and the face validity, allowing to obtain a reliable and valid version for application to the Portuguese population.

METHODS

THE SBST QUESTIONNAIRE

The SBST is a validated questionnaire containing 9 items. The first 4 items are related to the perceived pain, dysfunction, and comorbidity such as neck or shoulder pain. A psychosocial subscale results from summing the last five items related to states of fear, anxiety, catastrophizing, depression and discomfort[8,10-14]. The answers to the items present a dichotomise format (Disagree = 0; agree = 1), except the item related to the discomfort that uses a Likert scale of five options (being the first three options scored with zero and the last two with one point).

According to the answers, patients are classified as low risk when the score is less than or equal to three. If the value exceeded three at the total score, we analyse the score in the psychosocial subscale. Verifying this scale, a value equal to or below to three points, the patient is classified as medium risk and, if higher than three, is considered as high-risk patient (Annex I).

TRANSLATION AND CULTURAL ADAPTATION

The applied methodology is similar to other studies for the translation and cultural adaptation[12,17], including forward and reverse translation as well as the use of cognitive interviews[18,19]. This study was approved by the Ethics Committee for Research in Areas of Human Health and Welfare in the University of Évora, and informed written consent was provided by all participants.

STAGE 1 - ENGLISH TRANSLATION INTO PORTUGUESE OF PORTUGAL

In the beginning, two sworn and independent Portuguese translators (T1 and T2), from different professional fields (one from health and another from the sports science), bilingual at the original language of the instrument (English), performed the translation of the original version of SBST10, to Portuguese of Portugal. There were thereby obtained two versions of the questionnaire, T1 and T2. Both translators with the local project manager, discussed both translations and agreed with the conciliatory version (version 1), whose aim was to find a version of the translation that would be equivalent in terms of concepts and semantics to the original on items, instructions and response options.

STAGE 2 - USE OF COGNITIVE INTERVIEWS TO TEST THE QUESTIONNAIRE IN PATIENTS

The translated questionnaire was administered in adults to determine whether the translation (items, instructions and response options) was easy to understand, allowing to assess the instrument clarity. This understanding has been tested by the application of cognitive interviews[18,19], in which was requested a feedback from the patient about the possible errors or misunderstandings that any of the points could present, as well as suggestions for improving the questionnaire. Cognitive interviews were conducted face to face with 40 adults, of which 20 had a final diagnosis of LBP independent onset of illness and were recruited by convenience in the Family Health Unit «Quinta da Prata» – Borba. The other 20 were classified as healthy individuals (without symptoms pain in the lower back or other conditions that could interfere with the description of the absence of pain in the lower back) and were recruited at the University of Évora. Interviews were applied by the same Portuguese

native always in a similar way, and data were compiled and stratified according sex, age (30-60 and 61-80 years) and disease (healthy or LBP) (Table I).

The interviews were based on four points:

1. Understanding the instructions and response options.
2. Evaluation of ease of understanding of each of the questionnaire items, made in a dichotomous way: 1 – clear and understandable; 2 – difficulty understanding.
3. Evaluation of understanding each of the items using a numerical scale from 0 to 10 (0 very easy to understand up to 10 very difficult to understand
4. Analysis of individual interpretations of the interviewees to the various items, with appropriate suggestions for improvement, by requesting the interviewees that expressed by their own words the meaning of each item, and rewrite each item in order to check their understanding.

Whenever were identified minor problems in understanding the items, there were proposed modifications according to the suggestions of the respondents. If the value found was higher than 20% of misunderstanding when was analysed in a dichotomous form[14,20], and / or above 3 on a scale of 1-10, the items would be re-evaluated. At the end of this process, version 2 was obtained.

STAGE 3 – TRANSLATION OF THE PORTUGUESE FROM PORTUGAL INTO ENGLISH

With the help of a professional English translator, fluent in Portuguese of Portugal, version 2 of SBST was translated into English. This translator never had access to the original version of SBST or held knowledge in health. This last document was reviewed by a committee of experts, made up of translators, local manager, the professional who applied the questionnaires, the original author and two doctors, in order to detect any inconsistencies or misunderstanding from the questionnaire translation process, as well as for the approval of the author the respective use.

PSYCHOMETRIC PROPERTIES

FACE VALIDITY

The face validity is usually assessed by the target population or experts about the content and structure of the questionnaire[21]. 40 subjects including 20 patients with LBP and 20 healthy were asked whether the items in the questionnaire were associated in a significant way with the symptoms of LBP or if something has been left out. The final version SBST-Portugal after this first application was discussed by the Committee of Experts and applied once again to a sample of 40 patients with LBP.

TEST-RETEST RELIABILITY

To analyse the test-retest reliability and internal consistency of SBST-Portugal questionnaire, were recruited by convenience 40 subjects referred by doctors as suffering from low back pain, during consultations in the Family Health Unit «Quinta da Prata» – Borba (Table II). Two interviews were performed to each participant, with an interval from four to seven days, depending on availability. The second interview was only performed in subjects who reported that there was no change in back pain during the period of time who mediated the two interviews (the doctor asked: Did you feel any change in your pain since the last visit?). Patients who reported changes in low back pain or who missed the second interview were excluded.

STATISTICAL ANALYSIS

Simple Kappa coefficient together with the confidence interval (CI) of 95% was used to evaluate item-by-item agreement on items 1-8, while the Kappa with quadratic weights was used to item 9 and to the discrimination for classification in Low / medium / High risk. The reliability values were classified according to Landis

TABLE I. NUMBER OF MEN AND WOMEN STRATIFIED INTO YOUNG ADULTS AND OLDER ADULTS WITH LBP AND HEALTHY, SUBMITTED IN TO COGNITIVE INTERVIEWS

	Young Adults 43.9 ± 12.7 years (mean ± SD)		Older Adults 69.1 ± 6.3 years (mean ± SD)		Total 56.5 ± 17.4 years (mean ± SD)	
	Healthy	LBP	Healthy	LBP	Healthy	LBP
Women	5	5	5	5	10	10
Men	5	5	5	5	10	10

TABLE II. DEMOGRAPHIC VARIABLES OF THE SUBJECTS INVOLVED IN THE STUDY OF TEST-RETEST RELIABILITY AND INTERNAL CONSISTENCY (N=31)

Demographic variables	Test-retest reliability and internal consistency sample (N=31)
Age (years), mean (SD)	64.71 (10,28)
Gender, n (%)	
Male	12 (38.7%)
Female	19 (61.3)
Diagnostic	
Lumbar pain with more than 1 year, n (%)	31 (100%)
Low back pain absence, n (%)	0 (0%)
Education level, n (%)	
Fundamental level	14 (45.2%)
High school	10 (32.3%)
Higher education	7 (22.6%)
SBST – Portugal, mean (SD)	5.51 (2.06)
Low risk, n (%)	4 (12.9%)
Medium risk, n (%)	14 (45.2%)
High risk, n (%)	13 (41.9%)

and Koch[22] in poor (<0), slight (0.01 to 0.2), fair (0.21 to 0.4), moderate (0.41 to 0.6), substantial (0.61 to 0.8) and almost perfect (0.81 to 1).

Data of internal consistency for the total and psychosocial subscale score were assessed by Cronbach s Alpha, with acceptable values between 0.7 and 0.9523.

RESULTS

TRANSLATION AND CULTURAL ADAPTATION

STAGE 1 - ENGLISH TRANSLATION INTO PORTUGUESE OF PORTUGAL

In version 1 of the questionnaire, were amended by consensus a few words, concepts and terms used:

– In the phrase presenting the questionnaire, we changed the word «*Pense*», by «*Recorde*» since the interviewees need to remember the state of their pain until two weeks prior to the time of interview.
– In the first item was used the term «*alastrou-se*» in place of «*irradiou-se*», in the fourth item has been changed the expression «*por causa da*» to «*devido à*», and the sixth item, we used the expression «*preocupado*» instead of «*pensamentos inquietantes*», since they are more frequently used and correct expressions for Portuguese language in Portugal.
– In the item eight, we replaced the word «*gosto*» by «*aprecio*» because the first expression is seen as being more objective, and the word «*habitualmente*» by «*costumava*» since it allows the interviewed to better relate the present with their past experiences.

STAGE 2 – USE OF COGNITIVE INTERVIEWS TO TEST THE QUESTIONNAIRE IN PATIENTS

The dichotomous assessment made by interviewees to version 1, were not identified any problems of understanding by the respondents, since all they classified the questionnaire as being clear and without presenting difficulties in understanding the SBST instructions and response options. Relating to the items, there were no understanding problems, with the exception of item 5 where 17.5% of the 40 interviewees reported some difficulty. However, it was still considered acceptable by presenting a value higher than 80% respecting the understanding of the interviewees[14,20]. More sensitive was the evaluation of the questionnaire using a scale from 0 to 10. On this, there was a greater difficulty in understanding the items 2, 5 and 6 (Figure 1). Indeed, on the second item older interviewees, had doubts in response because some of them had pain symptoms only in one of the locations (neck or shoulder), and so they questioned whether they had to answer yes or no. In question 5 interviewees repeatedly had doubts about

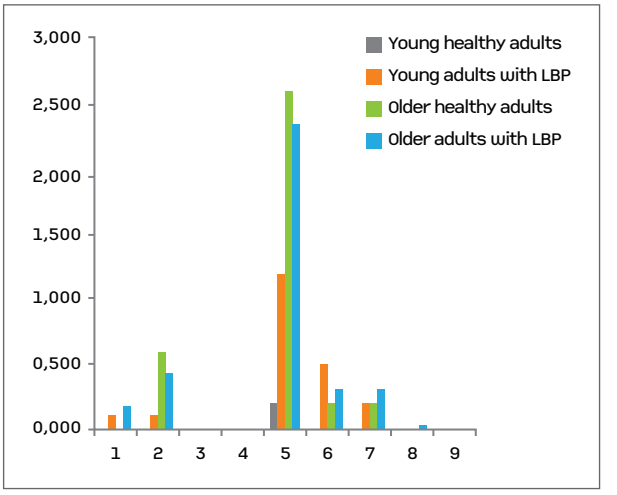


FIGURE 1. Mean difficulty presented in each of the 9 items, depending on the age and condition of the subject. The scale ranged from 0 to 10 (0 - very easy to understand, 10 - very hard to understand)

the expression «*condição*». They remarked that for better understanding, it should be expressed the limitation of the issue, back pain. In question 6, the subjects reported the concerns in general, not finding a cause effect related to back pain. It was in a general way mentioned, that this relationship should be explicit on the issue in order to clarify the respondent. For this reason these items were slightly changed: in item 2, the word «*ou*» was changed to «*e/ou*» turning that phrase clearer i.e., «*Em algum momento nas últimas duas semanas, eu tive dor no ombro e/ou no pescoço* «; in item 5, the phrase was changed from «*Para uma pessoa com uma condição como a minha, não é muito seguro ser fisicamente ativa*» to a more direct expression «*Não é muito seguro ser fisicamente ativo(a) com a minha dor nas costas*»; on the sixth item an expression has been added to the phrase «*Por diversas vezes, tenho-me sentido preocupado(a)* « to «*Por diversas vezes, tenho-me sentido preocupado(a) com a minha dor nas costas*». Based on the amendments proposed at this stage, it was obtained version 2 of the questionnaire.

STAGE 3 – TRANSLATION OF PORTUGUESE FROM PORTUGAL INTO ENGLISH

Version 2, after the translation into English, was sent to the authors of SBST questionnaire. They, after comparison with the original version and in line with the elements of the committee of experts, decided to change the first question in order to clarify the direction of pain irradiation, from «*...alastrou-se pela(s) minha(s) perna(s)*» to «*...alastrou-se para baixo para a(s) minha(s) perna(s)*». On the sixth item, it was decided to enhance the level of concern with pain, having been added in the phrase the expression «*muito*», in such away that the final item became «*Por diversas vezes, tenho-me sentido muito preocupado(a) com a minha dor nas costas*». The last change made was in the eighth item. The expression «*aprecio*» was replaced by «*gosto*», expression nearest the original word «*enjoy*». These changes resulted in the final product (version 3) of this SBST questionnaire translation to Portuguese of Portugal, which is found in Annex I.

PSYCHOMETRIC PROPERTIES

FACE VALIDITY

There was no ambiguity in the reported statement of understanding, response options or items of adapted cultural version of this process. The final version of SBST--Portugal proved to be well accepted by patients with LBP.

TEST-RETEST RELIABILITY

The final sample composed in the statistical treatment included 31 subjects (12 men and 19 women) aged 64.7 ± 10.3 years (mean ± SD).

The results of the analysis of test-retest reliability, considering beyond the Kappa value, as well as the confidence interval, has shown that 4 items took a substantial to almost perfect agreement (1,2,4,7), other 4

TABLE III. RATING CONCORDANCE (%), TEST-RETEST RELIABILITY AND INTERNAL CONSISTENCY OF THE SBST-PORTUGAL QUESTIONNAIRE

Item	% of Concordance	Kappa	95% CI	P
1	100	1	(1-1)	0,00
2	100	1	(1-1)	0,00
3	90	0,80	(0,59-1)	0,00
4	94	0,86	(0,67-1)	0,00
5	90	0,78	(0,54-1)	0,00
6	90	0,71	(0,40-1)	0,00
7	94	0,86	(0,67-1)	0,00
8	87	0,74	(0,50-0,98)	0,00
9	90	0,80	(0,62-0,98)	0,00
Rating Low/Medium/High Risk	84	0,74	(0,53-0,95)	0,00

	Total score	Psychosocial subscale
Internal consistency	0,93	0,91

95% CI - 95% Confidence Interval; P - Cohen's Kappa test

items revealed a moderate to almost perfect agreement (3,5,8,9) while the item 6 showed a fair to almost perfect agreement (Table III)[22]. The classification of patients in Low / Medium / High Risk revealed a moderate to almost perfect agreement. All Kappa values were above 0.70, value that is suggested by other authors as the minimum necessary[14]. Importantly the high percentage of agreement on all items of the questionnaire.

Regarding to internal consistency values, they are considered acceptable for the total score and psychosocial subscales[23] (Table III).

DISCUSSION

The first aim of this study was to obtain the translation and cultural adaptation of the original version of SBST questionnaire into Portuguese of Portugal. With the aim to achieve equivalence between the original and the adaptation in terms of questionnaire content, the process of cross-cultural adaptation of SBST was complicated, because there are clear differences in the languages (English and Portuguese of Portugal), but also significant social and cultural differences, which were necessarily implicit in this whole process. Throughout the cross-cultural adaptation process, besides the concern to translate the various items correctly, there was still to adapt culturally this translation, to allow that the instruments content validity in conceptual terms between different cultures was obtained[21].

In terms of understanding the items, in cross-cultural adaptation of SBST-Brazil[14], the only question that presents doubts, was item 6, resulting its reformulation. In this study, the fifth item was the one that suffered most reformulation although it presented more than 80% of understanding. For better understanding the questionnaire, small recurring changes of the observations produced by interviewees were included. In fact, this method was also used by other authors[8,9,11,13,24]. Following this change and its approbation by the committee of experts, it was correctly understood by the subjects of the new sample.

SBST, was already translated into about 20 languages[9], existing a translation in Portuguese of Brazil[14], but there is no adaptation to Portuguese of Portugal. Besides the original version, several have already been measured in terms of validity and reliability[8,9,10,11,13,14,24]. In this sense, the test-retest reliability of SBST-Portugal presented a substantial Kappa value of 0.74 (95% CI .53-.95), similar to those found by Pilz *et al.*[14] (0,79; 95%IC 0.63-0.95), and from the original questionnaire[10] for the total score (0.73; 95% IC 0.57-0.84), and psychosocial subscale (0.76; 95% IC 0.52-0.89). Compared with other studies it appears that they were better than those found by Piironen *et al.*[24] for the total score (0.58; 95%IC 0.35–0.82), and psychosocial subscale (0.68; 95%IC 0.40–0.96), although all of they were considered acceptable. The Kappa value for the various items, ranged between the substantial and almost perfect ie, from 0.71 (95%IC 0.40-1.00) at the sixth item and 1 (95%IC 1.00-1.00) for the first two items. Piironen et al.24 found a variation between the substantial (0.77; 95%IC 0.52–1.00) at the first item and fair in the eighth item (0.25; 95%IC 0.00–0.59), having Luan *et al.*[15] found similar results of the present study, with variations between 0.72 (95% IC 0.56–0.88) at the first item and 0.96 (95% IC 0.89–1) at the last.

The results of the internal consistency of the final SBST-Portugal showed to be above 0.70 (0.93 to the overall score and 0.91 for the score of psychosocial subscale). These values are higher than other studies, such as the original study[10] (0,79 to the overall score and 0.74 for the psychosocial subscale), to the Iranian version[8] (0.82 to the overall score and 0.79 for the psychosocial subscale), to the SBST-Brazil[14] (0.74 to the overall score and 0.72 for the psychosocial subscale), French version[9] (0.74 for the psychosocial subscale), and Finnish version[24] (0.52 for the psychosocial subscale). Eventually differences in the number of subjects in each study (31 in this present study compared to the others which used a number greater than 100 except for the study of Piironen *et al.*[24], with 35 subjects evaluated), can have allowed less variability between the test and retest. Although the average age of the participants in this study was clearly higher (mean age 65 years, while in others studies was situated near 46 years) may have originated these results, since the pain associated with LBP tends to worsen with age[8]. It was found in the present study a higher percentage of subjects with medium and high risk than in other studies[14]. On the other hand, despite the education level of the subjects is not homogeneous (45.2% fundamental, 32.3% high school and 22.5% complete higher education), it does not seem to have affected the outcome of the internal consistency.

As limitations of the study, we point out firstly that it was not tested the questionnaire in patients receiving the drug effect for low back pain which could influence the perception of pain and the response of the sub-

ject. Secondly, although some authors have used a similar sample number[24], the fact that the test-retest reliability and internal consistency have been performed with a smaller sample than the recommended by COSMIN[25], may have influenced our results.

In future studies, we suggest to analyse the validity of the translated version of SBST-Portugal in populations with different types of diseases, associated with back pain in particular, to patients with idiopathic LBP. This SBST-Portugal version equivalent to the original English version can be used in various interventions in risk stratification, or where you want to check the effect of a therapy, since it will allow to characterize the status of patients related to back pain, improving primary and secondary prevention by targeting prognostic indicators for persistent disabling symptoms[26]. It will also allow the prognosis of low back pain patients, requiring a specific and complex treatment, which is largely one of the causes for consultations at the primary care level[12].

CONCLUSION

The process of translation, cultural adaptation and reliability of SBST questionnaire into Portuguese of Portugal was carried out and SBST-Portugal version was obtained equivalent and reliably. As a tool for easy access and application, it can now be used in the context of Portuguese primary health care.

ACKNOWLEDGEMENTS

This project had the collaboration of Drª Vanda Lapão Silva and Drª Iolanda Marques, from Unidade de Saúde Familiar «Quinta da Prata» – Borba.

CORRESPONDENCE TO

Armando Manuel de Mendonça Raimundo
Pavilhão Gimnodesportivo da Universidade de Évora
Rua de Reguengos de Monsaraz, nº 44
7005-399 Évora - Portugal
E-mail: ammr@uevora.pt

REFERENCES

1. Savigny P, Kuntze S, Watson P, et al. Low Back Pain: early management of persistent non-specific low back pain. London: National Collaborating Centre for Primary Care and Royal College of General Practitioners; 2009.
2. Weiner DK, Sakamoto S, Perera S, Breuer P. Chronic low back pain in older adults: prevalence, reliability and validity of physical examination findings. J Am Geriatr Soc. 2006; 54: 11–20.
3. Walker BF. The prevalence of low back pain: a systematic review of the literature from 1966 to 1998. J Spinal Disord. 2000; 13: 205–217.
4. Hoy D, Bain C, Williams G, et al. A systematic review of the global prevalence of low back pain. Arthritis Rheum. 2006; 64: 2028–2037.
5. Branco JC, Rodrigues AM, Gouveia N, et al. Prevalence of rheumatic and musculoskeletal diseases and their impact on health- related quality of life, physical function and mental health in Portugal: results from EpiReumaPt– a national health survey. RMD Open 2016; 2: e000166. doi:10.1136/rmdopen-2015- 000166
6. Martin BI, Deyo RA, Mirza SK, et al. Expenditures and Health Status Among Adults With Back and Neck Problems. JAMA. 2008; 299: 656-664.
7. Gouveia M, Augusto M. Custos indirectos da dor crónica em Portugal. Rev Port Saúde Pública. 2011; 29: 100-107.
8. Azimi P, Shahzadi S, Azhari S, Montazeri A. A validation study of the Iranian version of STarT Back Screening Tool (SBST) in lumbar central canal stenosis patients. J Orthop Sci. 2014; 19: 213-217.
9. Bruyère O, Demoulin M, Beaudart C, et al. Validity and reliability of the French Version of the STarT back screening tool for patients with low back pain. Spine (Phila Pa 1976). 2014; 39: E123- 8. doi: 10.1097/BRS.0000000000000062
10. Hill JC, Dunn KM, Lewis M, et al. A primary care back pain screening tool: identifying patient subgroups for initial treatment. Arthritis Rheum. 2008; 59: 632–641.
11. Bruyère O, Demoulin M, Brereton C, et al. Translation validation of a new back pain screening questionnaire (the STarT Back Screening Tool) in French. Arch Public Health. 2012; 70: 12. doi: 10.1186/0778-7367-70-12
12. Gusi N, del Pozo-Cruz B, Olivares PR, Hernández-Mocholi M, Hill JC. The Spanish version of the «STarT Back Screening Tool» (SBST) in different subgroups. Aten Primaria. 2011; 43: 356--361.
13. Morsø L, Albert H, Kent P, Manniche C, Hill J. Translation and discriminative validation of the STarT Back Screening Tool into Danish. Eur Spine J. 2011; 20: 2166-2173.
14. Pilz B, Vasconcelos RA, Marcondes FB, Lodovichi SS, Mello W, Grossi DB. The Brazilian version of STarT Back Screening Tool – translation, cross-cutlural adaptation and reliability. Braz. J. Phys. Ther. 2014; 18: 453-461.
15. Luan S, Min Y, Li G, et al. Cross- cultural adaptation, reliability, and validity of the Chinese version of the STarT Back Screening Tool in patients with low back pain. Spine (Phila Pa 1976) 2014; 39: E974–E979 doi: 10.1097/BRS.0000000000000413
16. Main CJ, Sowden G, Hill JC, Watson PJ, Hay EM. Integrating physical and psychological approaches to treatment in low back pain: the development and content of the STarT Back trial's 'high-risk' intervention (StarT Back; ISRCTN 37113406). Physiotherapy. 2012; 98: 110-116.
17. Gusi N, Badía X, Herdman M, Olivares PR, Translation and Cultural Adaptation of the Spanish Version of EQ-5D-Y Questionnaire for Children and Adolescents. Aten Primaria. 2009;41:19-23.
18. Forsyth BH, Lessler JT. Cognitive laboratory methods: a taxonomy. In: Biemer PP, Groves RM, Lyberg LE, Mathiowet NA, Sudman S, editors. Measurement errors in surveys. New Yersey: Wiley; 2004. p.390—418.
19. Conrad F, Blair J, Tracy E. Verbal reports are data! A theorical approach to cognitive interviews. FCSM Research Conference; 1999.
20. Nusbaum L, Natour J, Ferraz MB, Goldenberg J. Translation, adaptation and validation of the Roland- Morris questionnaire—Brazil Roland-Morris. Braz J Med Biol Res. 2001; 34: 203-210.
21. Burns KE, Duffett M, Kho ME, et al. A guide for the design and

conduct of self-administered surveys of clinicians. CMAJ 2008; 179: 245–252.
22. Landis JR, Koch GG. The measurement of observer agreement for categorical data. Biometrics. 1977; 33: 159-174.
23. Nunnally JC, Bernstien IH. Psychometric theory. 3rd ed. New York: McGraw-Hill; 1994.
24. Piironen S, Paananen M, Haapea M, et al. Transcultural adaption and psychometric properties of the STarT Back Screening Tool among Finnish low back pain patients. Eur Spine J, 2015; 25: 287-295.
25. Mokkink LB, Terwee CB, Patrick DL, et al. The COSMIN study reached international consensus on taxonomy, terminology, and definitions of measurement properties for health-related patient-reported outcomes. J Clin Epidemiol. 2010; 63: 737-45.
26. Hay EM, Dunn KM, Hill JC, et al. A randomised clinical trial of subgrouping and targeted treatment for low back pain compared with best current care. The STarT Back Trial Study Protocol. BMC Musculoskelet Disord, 2008; 9: 58. doi: 10.1186/ /1471-2474-9-58.

ANEXO I

Versão Portuguesa de Portugal do STarT Back Screening Tool

Nome do Paciente: _____ Data: _____

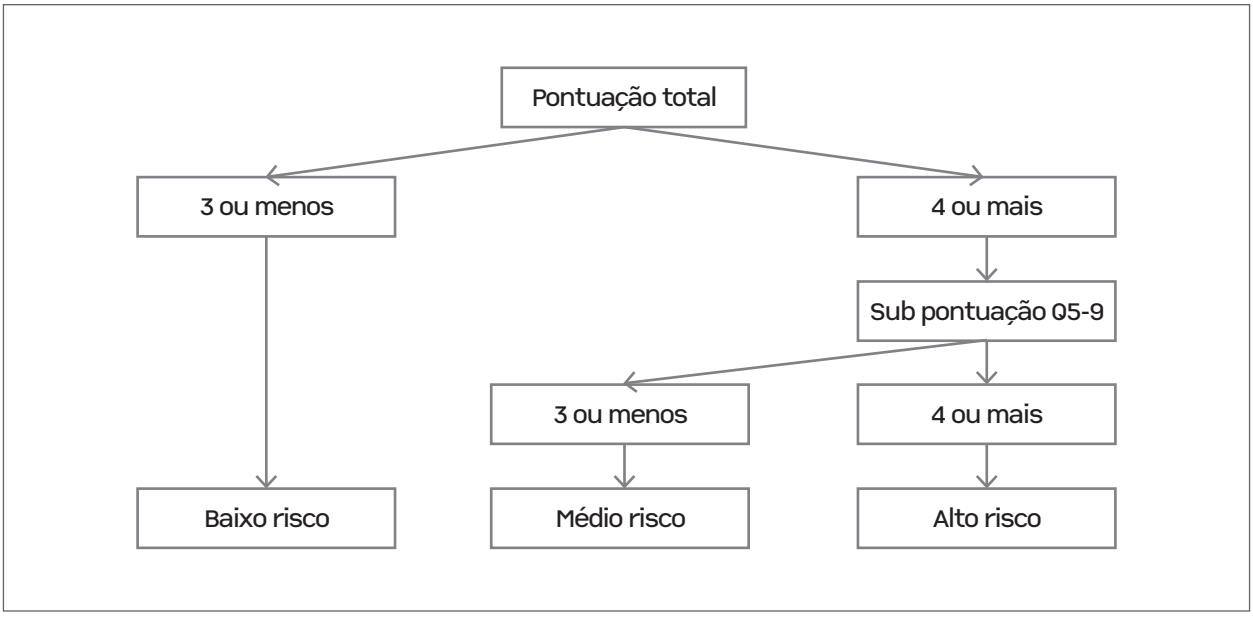
Recorde as **últimas duas semanas** e assinale a sua resposta nas seguintes questões:

	Discordo 0	**Concordo** 1
1. Em algum momento nas ultimas duas semanas, a minha dor nas costas **alastrou-se para baixo para a(s) minha(s) perna(s)**	☐	☐
2. Em algum momento nas últimas duas semanas, eu tive dor no **ombro** e/ou **no pescoço**	☐	☐
3. Devido à minha dor nas costas, eu só **caminhei distâncias curtas**	☐	☐
4. Nas últimas duas semanas, eu **vesti-me mais lentamente** do que o habitual devido à dor nas costas	☐	☐
5. Não é muito seguro ser fisicamente ativo(a) com a minha dor nas costas	☐	☐
6. Por diversas vezes, tenho-me sentido muito preocupado(a) com a minha dor nas costas	☐	☐
7. Eu sinto que **a minha dor nas costas é terrível e que nunca irá melhorar**	☐	☐
8. Em geral já **não gosto de** todas as coisas que costumava gostar	☐	☐

9. No geral, qual o **incómodo** provocado pela sua dor nas costas nas últimas duas semanas?

Nenhum	Pouco	Moderado	Muito	Extremo
☐	☐	☐	☐	☐
0	0	0	1	1

Pontuação total (total 9): _____ Sub Pontuação (Q5-9):_____


Pontuação total
3 ou menos
4 ou mais
Sub pontuação 05-9
3 ou menos
4 ou mais
Baixo risco
Médio risco
Alto risco