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Original Article

Translation and cultural adaptation of the Hip Outcome Score to the Portuguese language☆,☆☆

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ABSTRACT

Objective: to translate the Hip Outcome Score clinical evaluation questionnaire into Portuguese and culturally adapt it for Brazil.
Methods: the Hip Outcome Score questionnaire was translated into Portuguese following the methodology consisting of the steps of translation, back-translation, pretesting and final translation.
Results: the pretesting was applied to 30 patients with hip pain without arthrosis. In the domain relating to activities of daily living, there were no difficulties in comprehending the translated questionnaire. In presenting the final translation of the questionnaire, all the questions were understood by more than 85% of the individuals.
Conclusion: the Hip Outcome Score questionnaire was translated and adapted to the Portuguese language and can be used in clinical evaluation on the hip. Additional studies are underway with the objective of evaluating the reproducibility and validity of the Brazilian translation.

Tradução e adaptação cultural do Hip Outcome Score para a língua portuguesa

Palavras-chave:
Quadril
Tradução
Questionários
Avaliação de resultados

RESUMO

Objetivo: traduzir para o português e adaptar culturalmente para o Brasil o questionário de avaliação clínica Hip Outcome Score (HOS).
Métodos: o questionário HOS foi traduzido para o português com metodologia constituída pelas etapas de tradução, retrotradução, pré-teste e tradução final.

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Resultados: o pré-teste foi aplicado a 30 pacientes com dor no quadril sem artrose. No domínio relacionado a atividades de vida diária, não houve dificuldades de compreensão do questionário traduzido. Na apresentação da tradução final do questionário, todas as questões foram compreendidas por mais de 85% dos pacientes.
Conclusão: o questionário HOP foi traduzido e adaptado culturalmente para a língua portuguesa e pode ser usado na avaliação clínica do quadril. Estudos adicionais estão em andamento com o objetivo de avaliar a reprodutibilidade e validade da tradução brasileira.

Introduction

Quality-of-life evaluations are increasingly used within the field of healthcare, especially since it was proven that quality-of-life measurement properties are valid and reproducible parameters.[1,2] Measurements of quality of life and state of health have been emphasized by the orthopedic community.[3–5] Measurement of the impact of diseases on quality of life has become increasingly important for providing

Table 1 – Pretest applied to 30 patients.

Questions on activities of daily living	No difficulty at all	Slight difficulty	Moderate difficulty	Extreme difficulty	Unable to do	Not applicable	Not answered	Total
Standing for 15 min	10	11	6	2	1	0	0	30
Getting into and out of a car	4	12	7	7	0	0	0	30
Putting on socks and shoes	9	9	6	6	0	0	0	30
Going up steep slopes	6	12	3	8	0	1	0	30
Going down steep slopes	9	9	11	1	0	0	0	30
Going up a flight of stairs	9	10	1	10	0	0	0	30
Going down a flight of stairs	12	8	9	1	0	0	0	30
Stepping onto and off curbs	17	3	8	0	0	2	0	30
"Exaggerated" squatting	0	7	11	9	3	0	0	30
Getting into and out of a bath tub	11	5	1	4	0	9	0	30
Sitting for 15 min	18	6	3	2	0	1	0	30
Starting to walk	16	7	5	2	0	0	0	30
Walking for approximately 10 min	18	6	4	2	0	0	0	30
Walking for 15 min or more	6	14	7	3	0	0	0	30
Twisting/turning of the affected leg	1	9	12	8	0	0	0	30
Turning over in bed	6	10	11	3	0	0	0	30
Light to moderate work (standing and walking)	14	9	6	1	0	0	0	30
Heavy work (pushing/pulling, climbing, carrying)	3	3	15	5	1	3	0	30
Recreational activities	6	6	12	4	0	2	0	30
	175	156	138	78	5	18	0	570
	30.7%	27.4%	24.2%	13.7%	0.9%	3.2%	0.0%	100.0%
Questions on sports	No difficulty at all	Slight difficulty	Moderate difficulty	Extreme difficulty	Unable to do	Not applicable	Not answered	Total
Running 1.5 km	2	7	8	3	9	1	0	30
Jumping	2	12	5	6	3	2	0	30
Swinging objects, like a golf club	7	6	6	6	0	5	0	30
Landing on the ground after a jump	3	9	4	3	5	6	0	30
Starting and stopping rapidly	6	11	5	3	4	1	0	30
Abrupt change of direction/lateral movement	0	12	9	8	0	1	0	30
Low-impact activities such as walking rapidly	8	8	9	3	2	0	0	30
Capacity to do activities with your normal technique	8	12	3	2	4	1	0	30
Capacity to participate in a desired sport for as long as you would like	0	6	8	8	6	2	0	30
	36	83	57	42	33	19	0	270
	13.3%	30.7%	21.1%	15.6%	12.2%	7.0%	0.0%	100.0%

information about patients' evolution and making decisions about the treatment that is most indicated.

The Medical Outcomes Study Short Form questionnaire (SF-36) is a generic quality-of-life measurement that was validated for Brazil by Ciconelli et al.[6] It is often used as a reference point for other tests. However, despite being an excellent quality-of-life questionnaire, it is less specific for conditions resulting from diseases of the hip.[5,7]

The clinical assessment methods most frequently used for degenerative hip diseases that have been translated into the Portuguese language are the Western Ontario and McMasters Universities Osteoarthritis Index (WOMAC),[8] the Lequesne algofunctional index[9] and the Harris Hip Score.[10] These are aimed at patients with moderate to severe osteoarthrosis who present major physical capacity limitations. When used in young and active populations, they often present a so-called ceiling effect, i.e. a large proportion of the individuals evaluated reach the maximum score, which is erroneously interpreted as a satisfactory result.[11]

Hip pain in young and physically active individuals has received special attention since the importance of labral lesions as one of the factors involved in the origin of degenerative hip joint disease was recognized.[12,13] In 2005, Martin described the Hip Outcome Score (HOS),[14] a hip assessment questionnaire that was created with the aim of analyzing the results from therapeutic interventions in individuals with acetabular labral tears and high functional demands.[15] This questionnaire is considered to be valid for measuring function among individuals undergoing hip arthroscopy who present acetabular labral tears.[16,17]

With few exceptions, these questionnaires were developed in English-speaking countries, which makes it more

Table 2 – Hip Outcome Score (HOS) questionnaire in English.

Hip Outcome Score (HOS)						
Activity of Daily Living Scale						
Please answer every question with one response that most closely describes to your condition within the past week.						
If the activity in question is limited by something other than your hip mark not applicable (N/A).						
	No difficulty at all	Slight difficulty	Moderate difficulty	Extreme difficulty	Unable to do	N/A
Standing for 15 minutes	☐	☐	☐	☐	☐	☐
Getting into and out of an average car	☐	☐	☐	☐	☐	☐
Putting on socks and shoes	☐	☐	☐	☐	☐	☐
Walking up steep hills	☐	☐	☐	☐	☐	☐
Walking down steep hills	☐	☐	☐	☐	☐	☐
Going up 1 flight of stairs	☐	☐	☐	☐	☐	☐
Going down 1 flight of stairs	☐	☐	☐	☐	☐	☐
Stepping up and down curbs	☐	☐	☐	☐	☐	☐
Deep squatting	☐	☐	☐	☐	☐	☐
Getting into and out of a bath tub	☐	☐	☐	☐	☐	☐
Sitting for 15 minutes	☐	☐	☐	☐	☐	☐
Walking initially	☐	☐	☐	☐	☐	☐
Walking approximately 10 minutes	☐	☐	☐	☐	☐	☐
Walking 15 minutes or greater	☐	☐	☐	☐	☐	☐
Because of your hip how much difficulty do you have with:						
	No difficulty at all	Slight difficulty	Moderate difficulty	Extreme difficulty	Unable to do	N/A
Twisting/pivoting on involved leg	☐	☐	☐	☐	☐	☐
Rolling over in bed	☐	☐	☐	☐	☐	☐

Table 2 (*Continued*)

Light to moderate work (standing, walking)	□	□	□	□	□	□
Heavy work (push/pulling, climbing, carrying)	□	□	□	□	□	□
Recreational activities	□	□	□	□	□	□
How would you rate your current level of function during your usual activities of daily living from 0 to 100 with 100 being						
your level of function prior to yo ur hip problem and 0 being the inab ility to perform any of your usual daily activities?						
□□□.0%						
Hip Outcome Score (HOS)						
Sports Scale						
Because of your hip how much difficulty do you have with:						
	No difficulty at all	Slight difficulty	Moderate difficulty	Extreme difficulty	Unable to do	N/A
Running one mile	□	□	□	□	□	□
Jumping	□	□	□	□	□	□
Swinging objects like a golf club	□	□	□	□	□	□
Landing	□	□	□	□	□	□
Starting and stopping quickly	□	□	□	□	□	□
Cutting/lateral movements	□	□	□	□	□	□
Low impact activities like fast walking	□	□	□	□	□	□
Ability to perform activity with your normal technique	□	□	□	□	□	□
Ability to participate in your desired sport as long as you would like	□	□	□	□	□	□
How would you rate your current level of function during your sports related activities from 0 to 100 with 100 being your						
level of function prior to your hip problem and 0 being the inability to perform any of your usual daily activities?						
□□□.0 %						
How would you rate your current level of function?						
□ Nor mal						
□ Nearly normal						
□ Abnormal						
□ Severely abnormal						

difficult to use them in countries where the language is not English. Moreover, between countries that speak the same language, their individual and culturally distinct characteristics give rise to the need for assessment instruments to undergo adaptations to make them appropriate for the cultural context of the target population.[18] The present study had the aim of translating and culturally adapting the HOS quality-of-life questionnaire to the Portuguese language of Brazil.

Methods

This study was approved by the Research Ethics Committee of the Pedro Ernesto University Hospital of the State University

of Rio de Janeiro (Universidade do Estado do Rio de Janeiro), under the number CEP/HUPE: 2674. All the patients were given information about the objectives of the study before they signed the free and informed consent statement.

HOS is a questionnaire relating to hip pain that can be self-administered. It contains 28 items divided into two subscales: activities of daily living (ADL) and sports activities.

The method used for translating and culturally adapting the HOS to the Portuguese language used the criteria described by Guillemin et al.[18] and revised by Beaton et al.[19] These consist of a set of standardized instructions for cultural adaptation of quality-of-life instruments, including four stages: initial translation, back-translation, consensus translation and pretesting.

The instrument in English was translated into the Portuguese language by two independent translators who were orthopedists with experience in hip surgery who were familiar with the original language and aware of the aims of the study. After evaluation of the two translations (T1 and T2) and comparison with the original instrument, these were combined into a single document called the initial translation (IT).

In the next stage, the back-translation was done by two independent translators who were unaware of the objective of the study. Thus, two back-translations into English (BT1 and BT2) were produced from the IT. A committee formed by a multidisciplinary team then met to analyze the divergences between the original instrument and the translations and, from this process, to produce the consensus translation (CT).

During the review process on the translations, the semantic, idiomatic, experience/cultural and conceptual equivalences were examined. The semantic equivalence was based on evaluation of the grammatical and vocabulary equivalence, i.e., between words. Many words in one language may not have adequate translations into other languages, or verb tenses may be used in some languages and not in others, such as words like *dancing* or *eating* translated into languages that do not use the present participle or gerund form.[2,20] Idiomatic equivalence, i.e., the translation of certain idiomatic expressions, is very difficult. Certain expressions in English lose their meaning completely when translated into Portuguese, or they may be understood with a meaning other than that of the mother language.[2,20] For a good translation, equivalence of experience or culture is important, so that the terms used are coherent with the experience of life of the population for which the questionnaire is destined, within its cultural context. If a term or situation is found to be outside of the context or experience of the population, it should be changed.[2,20] Some items used in evaluating quality of life may present semantic equivalence but not have conceptual equivalence. For example, in the social context of many cultures in developing countries, the terms "brother" or "aunt" might mean more than just a degree of kinship. In such cases, the terms presenting divergence of conceptual equivalence should be replaced by more appropriate terms that exist in the language into which the questionnaire is being translated.[2,20]

For the pretesting stage, 30 consecutive patients with complaints of hip pain but without coxarthrosis were selected from the hip outpatient clinic of the Orthopedic Institute of Tijuca. Patients were excluded if they presented with the following: (i) visual or cognitive disorders that impeded reading

Table 3 – Hip Outcome Score (HOS) questionnaire translated into the Portuguese language (HOS-Brazil).

Escore de resultados do quadril						
Escala de atividades da vida diária						
Por favor, responda todas as questões com uma resposta que melhor descreve suas condições na última semana.						
Se a atividade em questão é limitada por algo diferente do que o seu quadril , marque não se aplica (N/A) .						
	Sem dificuldade	Pequena dificuldade	Modera da dificuldade	Extrema dificuldade	Não consegue fazer	N/A
Ficar de pé por 15 minutos	□	□	□	□	□	□
Entrar e sair do carro	□	□	□	□	□	□
Calçar meias e sapatos	□	□	□	□	□	□
Subir ladeira inclinada	□	□	□	□	□	□
Descer ladeira inclinada	□	□	□	□	□	□
Subir um lance de escada	□	□	□	□	□	□
Descer um lance de escada	□	□	□	□	□	□
Subir e descer do meio-fio	□	□	□	□	□	□
Agachamento exagerado	□	□	□	□	□	□
Entrar e sair da banheira	□	□	□	□	□	□

Table 3 (*Continued*)

Sentar por 15 minutos	□	□	□	□	□	□
Início da caminhada	□	□	□	□	□	□
Andar por aproximadam ente 10 minutos	□	□	□	□	□	□
Andar por 15 minutos ou mais	□	□	□	□	□	□
Por causa do seu quadril, quanta dificuldade você tem para:						
	Sem dificuldade	Pequena dificuldade	Moderada dificuldade	Extrema dificuldade	Não consegue fazer	N/A
Girar/virar sobre a perna acometida	□	□	□	□	□	□
Virar -se na cama	□	□	□	□	□	□
Trabalho leve a moderado (ficar de pé e andar)	□	□	□	□	□	□
Trabalho pesado (empurrar/puxar/escalar/carregar)	□	□	□	□	□	□
Atividades recreativas	□	□	□	□	□	□
Como você quantificaria seu nível funcional durante as atividades usuais da vida diária de 0 a 100, com 100 sendo seu nível de função antes do seu problema de quadril e 0 sendo a impossibilidade de fazer quaisquer atividades usuais da vida diár ia?						
□□□.0 %						
Escore de resultados do quadril						
Escala de esportes						
Por causa do seu quadril, quanta dificuldade você tem para:						
	Sem dificuldade	Pequena dificuldade	Moderada dificuldade	Extrema dificuldade	Não consegue fazer	N/A
Correr 1,5 km	□	□	□	□	□	□
Pular	□	□	□	□	□	□
Balançar objetos, como numa tacada de golfe	□	□	□	□	□	□
Aterrisar no solo após salto	□	□	□	□	□	□

Iniciar e parar rapidamente	□	□	□	□	□	□
Mudança brusca de direção/movimentos laterais	□	□	□	□	□	□
Atividades de baixo impacto, como andar rapidamente	□	□	□	□	□	□
Capacidade de fazer atividades com sua técnica normal	□	□	□	□	□	□
Capacidade de participar do seu esporte desejado durante o tempo que você gostaria	□	□	□	□	□	□
Como você quantificaria seu nível funcional durante as atividades esportivas, variando de 0 a 100, sendo 100 o nível de função nessas atividades antes do problema de quadril e 0 a impossibilidade de fazer quaisquer atividades usuais da vida diária?						
□□□□.0 %						
Como você quantifica seu nível funcional atual?						
□ Normal						
□ Quase normal						
□ Anormal						
□ Muito normal						

and interpretation of the questionnaire; (ii) coxarthrosis, characterized by a minimum joint space of less than 1.5 mm[21] and by severe limitation of hip range of motion.[14] The CT was applied to these 30 patients. The questions that were not understood by at least 85% of the patients were modified to the extent that was necessary and were then presented again to all the patients, until good understanding was achieved. After elimination of all situations that did not form part of the patients' day-to-day lives, and questions or terms that were not well understood, the CT was considered to be the final translation of the questionnaire (FT).

Results

In the pretesting, the CT was applied to 30 individuals in order to assess comprehension and semantic, idiomatic, cultural and conceptual equivalences.

With regard to semantic equivalence, verbs used in the present continuous tense in the HOS questionnaire were translated into Portuguese in the infinitive. The only word in the original questionnaire that did not have an exact translation into the Portuguese language was one in the title of the questionnaire. Thus, within the context, the word "outcome" was translated as "resultado" (result).

Regarding idiomatic equivalence, the HOS questionnaire did not present any idiomatic expressions that necessitated adaptations to Portuguese.

Regarding cultural equivalence, only one item, on the ADL scale, was slightly modified for greater coherence with the cultural context of the Brazilian population. Item 2 of the original questionnaire speaks of "getting into and out of an average car", and this was translated as "entrar e sair do carro" (getting into and out of a car), which is sufficient to transmit the idea of a small to medium-sized car, which accounts for the absolute majority of cars in Brazil.

Regarding conceptual equivalence, when the activities of the original questionnaire were translated into Portuguese, they did not present any need for conceptual adaptations.

All the individuals answered all of the questions in the pretest and all of the questions were understood by more than 85% of the interviewees (Table 1). Thus, the CT did not need to be modified and it became the FT (HOS-Brazil).

Table 2 presents the original HOS questionnaire and Table 3 presents HOS-Brazil, after translation and cultural adaptation.

Discussion

In evaluating the semantic equivalence, the original HOS questionnaire was seen to use the present continuous verb tense, which in the Portuguese language may lead to "gerundismo", i.e., improper use of the gerund. Thus, words like standing, walking, sitting and running were translated as the infinitives of these verbs (stand, walk, sit and run), which in Portuguese are used to indicate the action without situating it in time. Also in relation to semantic equivalence, in translating the term "deep squatting" in item 9 of the activities of daily living, it was decided to translate the adjective as "exagerado" (exaggerated or overdone), which is used in Portuguese to denote a connotation of greater intensity and would be more easily understood by the interviewees, such that the term was translated in the HOS-Brazil as "agachamento exagerado". Recent published articles on translations of questionnaires used in orthopedics have followed the same strategy.[10,22]

Among the limitations of this study, we did not evaluate the schooling levels of the individuals who answered the questionnaire. This factor could have led to difficulty in understanding the questions, given that the patients were at a public healthcare service in a developing country (social). Likewise, the level of physical activity could have interfered with the understanding of sports movements ("landing on the ground after a jump" or "swinging objects, like a golf club"). All the questionnaires were applied at a single center that perhaps did not completely correspond to the realities of the Brazilian population.

Despite the growing interest in clinical studies on non-degenerative diseases of the hip, many obstacles have been encountered within the Brazilian setting with regard to making assessments of greater precision on the results from such studies. This particularly so in relation to observational studies on new therapeutic interventions such as arthroscopy, and this has resulted in stimulating translations and cultural adaptations of specific evaluation instruments.[8,10] The absence of a specific instrument destined for evaluating individuals with non-degenerative hip diseases who practice sports that is validated in Portuguese makes it difficult to understand the various factors that make up the problem.[2,10]

The HOS was created with the objective of evaluating the results from therapeutic interventions among individuals with high functional demands who present acetabular labral tears.[16,17] Since the HOS is a specific questionnaire for hip conditions in active individuals that has already been validated and tested in populations that use the English language, our hypothesis is that its translation and validation for the Portuguese language of Brazil will be viable and acceptable for the realities of this country. Because of the growing numbers of hip arthroscopy procedures performed in Brazil, it is necessary to use an instrument that has been translated and culturally adapted for Brazilian Portuguese and which evaluates the quality of life in this specific group of patients, so as to have better knowledge of the state of the disease and better assessment of the results from interventions that are implemented.

Conclusion

The Hip Outcome Score questionnaire was translated and culturally adapted to the Portuguese language of Brazil and can be used for clinical evaluations on the hip. Additional studies are underway with the aim of evaluating the reproducibility and validity of the Brazilian translation.

Conflicts of interest

The authors declare no conflicts of interest.

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