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ORIGINAL RESEARCH

Cross-cultural adaptation and measurement properties of the Brazilian version of the Exercise Preference Questionnaire_(stroke)

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KEYWORDS

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13 Exercise;
14 Validity;
15 Reliability;
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Abstract

Background: The Exercise Preference Questionnaire (EPQ_(stroke)) captures exercise preferences and measures personal factors, that influence motivation and adherence to exercise in stroke subjects.

Objectives: To perform the cross-cultural adaptation of the EPQ_(stroke) into the Brazilian-Portuguese language and to evaluate its measurement properties.

Methods: The EPQ_(stroke) was cross-culturally adapted and primarily tested in 30 chronic stroke subjects. After the final version of the EPQ_(stroke)-Brazil was created, its test-retest reliability was verified, using Kappa indices and intra-class correlation coefficients (ICCs) ($n=50$), and internal consistency was verified using Cronbach's alpha coefficients ($n=101$). Construct validity was assessed using exploratory factor analysis ($n=101$), content validity using the content validity index (CVI) ($n=8$), and face validity using the rate of agreement regarding the clarity, wording, ability to answer the questions, and lay-out and style of the questionnaire with two groups, including individuals with stroke ($n=81$) and multidisciplinary health professionals ($n=32$).

Results: The pre-final version required revisions (items 9, 29, and 30) and, after another pre-test, it was shown to be appropriate. The Kappa indices ranged from 0.58 to 0.95; the ICCs from 0.35 to 0.93, and the Cronbach's alpha coefficient was 0.82 (0.768–0.869 CI), showing adequate internal consistency. The exploratory factor analysis and CVI confirmed the validity of the EPQ_(stroke)-Brazil. The rate of agreement was greater than 80% for both groups.

Conclusion: The EPQ_(stroke)-Brazil was found to be a valid and reliable measure for verifying exercise preferences of Brazilian individuals with stroke.

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Introduction

Stroke is an important condition for public health systems worldwide.¹ According to Billinger et al.,² physical inactivity is considered one of the main causes of stroke. Mortality after stroke has been decreasing,³ due to interventions such as control of cardiovascular risks and smoking and programs for hypertension support and prevention.³ In addition, it has been reported that the prevalence of stroke in individuals aged between 20 and 59 years, who practice adequate levels of physical activity, is low. Nevertheless, physical activity tends to decrease with increasing age,³ and previous findings revealed that 77% of individuals with stroke are sedentary or have low levels of physical activity.⁴

Recent studies^{5,6} suggested that regular physical activity promotes motor recovery, improves cardiorespiratory capacity, increases walking speed and balance, and prevents recurrent stroke. However, many individuals with stroke remain physically inactive. The lack of adherence to physical activity programs is a common problem for many populations, and individuals usually drop out before, achieving any benefits.^{5,7,8} Therefore, the identification of strategies to increase participation and adherence to physical activity programs after stroke becomes essential for the maintenance and improvement of physical function and quality of life of these individuals.

Various exercise preferences have been reported with different health conditions, such as breast cancer^{9,10} and elderly.¹¹ According to Banks et al.,¹¹ individuals with stroke prefer exercising in structured groups at the gym and community centers. Thus, exercise preferences appear to be related to factors, such as health conditions, life situations, and cultural and social differences.^{10,11}

In Brazil, exercise preferences in stroke survivors have not been described. Thus, given the absence of an instrument developed and/or adapted to the Brazilian-Portuguese language for the assessment of exercise preferences of stroke individuals, it is necessary to conduct the cross-cultural adaptation of the Exercise Preference Questionnaire – EPQ_(stroke). This process has some advantages, because it can produce a measure that can be applicable to different cultural contexts and used in international/multicentric studies. In addition, the financial costs and time consumption are lower, when compared to the development of new measures.^{12,13} Therefore, the aim of this study was to adapt the EPQ_(stroke) questionnaire to the Brazilian-Portuguese language and examine its measurement properties.

Methods

Exercise Preference Questionnaire – EPQ_(stroke)

The EPQ_(stroke) is a specific questionnaire designed to identify exercise preferences of stroke individuals, with the aim of planning the most appropriate exercise programs for these individuals.¹¹ It consists of 33 items, divided into three sections. The first contains three items that identify the frequency and type of current physical activity. The second consists of 22 items that assess the agreement of the individual regarding the following factors: (1) exercise with others;

(2) degree of structure of the exercise program; (3) independence; (4) location; and (5) exertion. Three items related to “like exercising,” “ability to participate in exercise programs”, and “preference for a particular period of the day for physical activity”, are added to this section. Finally, the third section contains five questions (four open) regarding exercise preferences. The questionnaire can be administered through interviews. It does not present a final score, since its goal is to examine the contextual factors related to physical activity.¹¹ Well-trained examiners administered the questionnaire.

Participants

The recruitment of the participants took place from January to October 2015. Community-dwelling individuals with stroke were recruited for both phases of the study (Phase I – cross-cultural adaptation and Phase II – analysis of the measurement properties). The participants’ contact details were obtained from the following sources: a list of subjects from previous research projects; referral from health professionals, friends, or relatives; rehabilitation records and fitness center units of the Unified Public Health System (SUS) of Belo Horizonte, MG, Brazil; out-patient physical therapy clinic of a local private university; and two local private physical therapy clinics.

The inclusion criteria consisted of: (1) clinical diagnosis of stroke for at least six months; (2) age ≥ 20 years; (3) ability to walk independently with or without assistive devices; and (4) absence of cognitive impairments, which were identified by the Mini-Mental State Examination scores^{14,15}; or (5) other neurological and musculoskeletal conditions not related to stroke. Individuals were excluded if they had communication difficulties that could prevent them from following instructions and answering the questionnaire.

Cross-cultural adaptation

The cross-cultural adaptation of the EPQ_(stroke) was authorized by the authors of the original instrument.¹² The process followed recommended guidelines^{13,16} and was carried-out in five stages. First, the EPQ_(stroke) was translated from English to the Brazilian-Portuguese language, independently, by two bilingual translators, whose native language was Portuguese. One of the translators was aware of the objective of the study and was an expert in the area of rehabilitation. Secondly, a synthesis of the translation was produced, followed by back translation, which was carried-out by two other bilingual translators, whose native language was English. None of the translators had access to the original version or information about the concepts of the questionnaire. Next, an expert committee, composed of one clinical physical therapist, two researchers in stroke rehabilitation, and one native English-speaking translator consolidated all versions and developed the pre-final version of the questionnaire. The purpose of this committee was to evaluate the clarity, relevance, and adequacy of the items, by verifying the conceptual, semantic (vocabulary and grammar), and cultural equivalences between the original and the pre-final version of the EPQ_(stroke).¹²

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