TRANSLATION AND CROSS-CULTURAL ADAPTATION OF SELF-EFFICACY FOR HOME EXERCISE PROGRAM SCALE IN GUJARATI LANGUAGE FOR MUSCULOSKELETAL CONDITIONS

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ABSTRACT

Background: The objective of this study is to develop and find validity and reliability of cross-cultural adaptation of "Self-Efficacy for Home Exercise Program Scale" in Gujarati language in patients with musculoskeletal conditions. So, that it is feasible and easy to understand for local population of Gujarat.

Method: The adaptation involved four steps – forward translation, backward translation, creation of provisional Gujarati version and reliability and validity testing. For validity testing expert panel containing 5 members were selected and their reviews in form of 5-point Likert scale was noted (5-strongly agree, 4- agree, 3- neither agree nor disagree,2- disagree, 1- strongly disagree). Content validity was found for each question based on the reviews of expert panel. For reliability performance of scale was evaluated with 30 patients and repeated to assess test-retest reliability.

Result: Out of 12 questions one question went under wording adjustments by the suggestion made by expert panel. The content validity index (CVI) was calculated including I-CVI for each question which ranged from 0.48 to 0.92. S-CVI was found to be 0.8. Reliability was found by test retest score in which Interclass Correlation Coefficient for single measures was 0.971 with 95% of confidence interval (0.941-0.986). Cronbach's alpha was 0.985 for Gujarati adaptation of SEHEPS scale.

Conclusion: Self-Efficacy for Home Exercise Program Scale is cross culturally adapted in Gujarati language and its validity and reliability was found acceptable for use. So, it can be used to measure self-efficacy in Gujarati understanding population.

Keywords: Cross cultural adaptation, SEHEPS, Gujarati language, self-efficacy, home exercise program

INTRODUCTION

Exercise is a planned and structured repetitive bodily movement which improve or maintain physical fitness [1]. It is seen that exercise can increase energy consumption, muscle strength, improves cardiovascular factors, increases bone density and regulate psychological processes [1]. Two types of exercise programs clinic-based exercise protocol and home -based exercise program can be administered to the patients with musculoskeletal conditions and both clinic-based protocol and home-based exercise program are seen to improve pain, function and quality of life in individuals with persistent musculoskeletal conditions [1]. Home exercise programs (HEPS) are a form of rehabilitation program which contribute to treat patient's symptoms and it is necessary for recovery [2]. Home-based exercise and clinic-based exercise intervention reduces pain, joint stiffness and increases muscle strength, balance and mobility and quality of life [2]. Home based exercise program is cheaper, easy to administrate, safe and suitable to practice at home which can further help in

reducing the burden on medical equipment's and time [2]. It was found that home-based exercise programs provide similar benefits compared to clinic-based exercise program [3].

Exercise adherence is commitment towards one's exercise program. Treatment adherence has been defined as one's behavior towards his/her treatment for the recommended duration and it has been explored in similar health behaviors, such as medication adherence [4]. Exercise is used for the treatment of various musculoskeletal conditions, however, non-adherence towards exercise can affect the benefits of exercise [5]. Exercise adherence for home exercise is still low compared to clinic-based protocol. Many factors are responsible for high exercise adherence one of which is self-efficacy. Self-efficacy refers to the belief's individuals hold about their capability of successfully performing particular tasks [6]. According to a study by Picha et al. patients with low self-efficacy may present with a lack of confidence, shy away from activities they see as threats, lessen efforts towards a task if difficulties arise, dwell on shortcomings and failures, or lack commitment to goals or personal desires [7]. By contrast, those with high self-efficacy will portray confidence, set personal goals and continually work to achieve them and quickly recover if presented with a setback or failed attempt at a given task[7].Those with higher levels of self-efficacy in performing exercise have been found to be 50% more likely to engage in exercise prescription[6] . This makes it necessary to assess the self-efficacy which can be measured by various scales like- pain self-efficacy questionnaire (PSEQ), self-efficacy for exercise scale (SEE), self-efficacy for home exercise programs scale (SEHEPS), etc. [7]. A study by Olson et al. self-efficacy at baseline was found to be associated with change over time in pain and physical activity at follow-up after the intervention period [8]. Positive effect of high self-efficacy shows that it is important to strengthen patient's self-efficacy [8].

The Self-Efficacy for Home Exercise Programs Scale (SEHEPS) was developed by Picha et al. to assess the self-efficacy of individuals with musculoskeletal diseases related to home exercise programs. Picha et al. reported that SEHEPS has good psychometric properties, with both high internal consistency and test-retest reliability [6]. The scale is intended to be used to measure self-efficacy which may work as guide for clinicians to evaluate and predict the reasons for decreased exercise adherence in their patients when prescribing home exercise program [6].

SIGNIFICANCE
To the best of our knowledge, the SEHEPS has yet to be translated into other languages and there are no other questionnaires or scales in the Gujarati language which investigate the self-efficacy of home exercise programs.

OBJECTIVES
The objective of this study was to develop a Gujarati version of SEHEPS (SEHEPS-G) for patients with musculoskeletal diseases and to evaluate the scale's validity, reliability and psychometric characteristics.

METHODS
Self-Efficacy for Home Exercise Programs Scale (SEHEPS) [6]
SEHEPS was developed by Picha et al. (2019) the scale includes 12 questions to evaluate self-efficacy for home exercise programs in patients with musculoskeletal diseases. A six-point, Likert-type scoring (ranging from 0 = not confident to 6 = very confident) was used for each question in the scale. Higher scores indicate a greater level of confidence. The original study was applied to the group of participants who had various musculoskeletal disorders.

Participants and methods:
The permission was taken from the developers of Self-Efficacy for Home Exercise Programs Scale (SEHEPS) questionnaire to translate SEHEPS scale which is in English language originally into Gujarati language. Ethics approval was taken. The cross-cultural adaptation process of the SEHEPS was performed by using the guidelines given by World Health Organization(WHO)[9].Translation process involved five steps:1) Initial translation, (2) Synthesis of the translation, (3) Back translation, (4) Expert committee, and (5) Test of the pre - final version[9]. Translation included initial translation (T1 and T2) where two bilingual translators whose first language was Gujarati were selected for producing the translation of SEHEPS scale from English to

Gujarati language. The first professional translator had a background of physiotherapy and the second professional translator had a background in Gujarati literature and education. In the second synthesis phase Gujarati translated version by both the translators (T1 and T2) were compared and combined to form a single translated version of scale in Gujarati language(T12).After the completion of forward translation by two independent translators and synthesis of the translation, the third stage of back translation was done of Gujarati version of SEHEPS scale into English language by the translator making sure that the meaning of the translated version remained similar to the original scale.

The backward translation of first copy of translation (T-12) was produced by two bilingual translators whose first language was English. After the backward translation the copy was sent to an Expert committee (The expert committee comprised of five physiotherapists who reviewed the pre-final scale and minor changes were made as suggested by the expert committee. Then this pre- final version was tested on a group of 30 Gujarati speaking patients with musculoskeletal conditions to assess the comprehensibility and reliability of the Gujarati version of the scale. Participants were given the information about the study.

30 participants with musculoskeletal conditions were recruited from the OPD. After screening for inclusion criteria and exclusion criteria. Participants aged 45-60 years, both genders, with musculoskeletal condition and willing to participate were included in the study. While participants who were unable to read Gujarati, language were excluded from the study. Informed consent was taken from the participants.

STATISTICAL ANALYSIS
Psychometric properties of the translated scale were evaluated using IBM version 20. The psychometric property like Content validity was evaluated for each question in the scale in the form of item - level content validity index (I-CVI) and scale level content validity index (S-CVI) for overall scale. While the reliability of the translated scale was found by test retest method in which patients were asked to fill the scale twice in the interval of 24-48 hours and internal consistency was measured.

RESULT
The content validity index (CVI) was calculated including I-CVI for each question which ranged from 0.48 to 0.92. S-CVI was found to be 0.8. Reliability was found by test retest score in which Interclass Correlation Coefficient for single measures was 0.971 with 95% of confidence interval (0.941-0.986). Cronbach's alpha was 0.985 for Gujarati adaptation of SEHEPS scale.

DISCUSSION
The original study applied in group of participants who had musculoskeletal disorders and the SEHEPS was reported as having good test- retest reliability (ICC = 0.971) and high internal consistency (α=0.985) [6]. Kelsey et al. who formulated the original scale compared the scale with other self-efficacy scales like - self-efficacy for exercise scale (SEE), pain self-efficacy questionnaire (PSEQ), the global rating of change indicating strong convergent validity [6].

In this study we translated and assessed the psychometric properties of Gujarati translated scale (SEHEPS-G) in participants with musculoskeletal conditions and found that translated Gujarati version of SEHEPS scale is a valid and reliable tool to measure self-efficacy of patient undergoing home exercise program. Self-efficacy is an important factor for patients given home based program as adherence is affected by the self-efficacy of patient. High self-efficacy increases the adherence and which further helps the patient to gain complete benefit out of exercise [7].

In our scale certain changes were made based on the suggestion of expert panel like-word sequence was changes from "વિડીયોથી કસરત" to "કસરતની વીડિઓ" and word "નિરીક્ષણ" was changed to "માર્ગદર્શન"

and doctor word was changed to clinician. The original scale is translated in various other languages like- Turkish, Brazilian, Chinese, etc. and all found satisfactory psychometric properties and no changes were done [10].

There are some limitations in our study like not comparing the translated scale with other scales and finding its convergent validity. Another limitation is the assessment of reliability with other conditions other than musculoskeletal conditions patients. This scale being the first scale on self-efficacy for home exercise program

scale in Gujarati language has found satisfactory psychometric properties which indicates that SEHEPS-G scale can be used to assess the self-efficacy of musculoskeletal condition patients who have been given home exercise programme.it will help the physiotherapists to assess various factors which can affect the confidence of patient to perform exercise regularly.

CONCLUSION

Self-Efficacy for Home Exercise Program Scale is cross culturally adapted in Gujarati language and its validity and reliability was found acceptable for use. So, it can be used to measure self-efficacy in Gujarati understanding population.

Conflict of interest statement – Author declares that there is no conflict of interest.
Ethics approval no. - PTC/IEC-16/2024-25

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