

Face Validity of Gujarati Version of Lower Extremity Functional Scale (LEFS)

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Abstract

Background: Lower extremity functional scale (LEFS), originally developed by Binkley et. al in 1999, is a valid Patient rated outcome measure (PROM) for various musculoskeletal conditions. The scale is originally developed in English language and has been translated and cross culturally adapted into many languages. In India, the scale is still applied in the original language, i.e. English, and also in its original form. Hence, the need of the study is to find the face validity of Gujarati translated LEFS in accordance with functional activities of Gujarati population.

Methodology: Individuals referred to Physiotherapy clinic and having lower limb musculoskeletal condition were screened for the eligibility. Those who fulfilled the inclusion and exclusion criteria were included in the study. Face validity of Gujarati LEFS was calculated by asking the individuals to grade items of Gujarati translated LEFS according to 5-point Likert scale, including very important, important, relatively important, slightly important and unimportant, as how each item appear to them for measuring lower extremity function.

Results: Item impact score for each item was calculated from frequency and mean item importance score. Item impact score of:

- 15 out of 20 items was more than 1.5
- 5 out of 20 items scored less than 1.5

Results show statistically significant need to change the items of Gujarati translated LEFS.

Conclusion: 5 out of 20 items in Gujarati translated LEFS needs to be modified/eliminated for its implication into Gujarati population.

Keywords: Lower extremity functional scale (LEFS), Gujarati LEFS, Validity

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Introduction

Lower extremity functional scale (LEFS), originally developed by Binkley et. al in 1999, is a valid Patient Rated Outcome Measure (PROM) for various musculoskeletal conditions. It contains 20 items for measuring patient function and activity limitation.^[1] The scale is originally developed in English language,

and has been translated and cross culturally adapted into Italian, Canadian, French, Dutch, Arabic, Brazilian, Portugese, Malaysian, Finnish, Persian etc. population^[2,3,4,]. In India, the scale is still applied in the original language, i.e. English, and also in its original form. Hence, the need of the study is to validate the Gujarati translated LEFS in Gujarati population. Face validity refers to the extent to which a test appears to measure what it is intended to measure.^[5] It pertains to whether the test “looks valid” to the respondents.^[6] Some authors consider face validity as a component of content validity^[7], while others believe it should not be confused with the other types of validity and it cannot replace them.^[8,9]

Purpose

To find the face validity of Gujarati translated LEFS in accordance with functional activities of Gujarati population. Objective is to find whether Gujarati LEFS is valid when individuals themselves report about the questionnaire according to their lifestyle.

Methodology

§ STUDY DESIGN: Cross sectional study

§ STUDY SETUP: Physiotherapy department

§ NO. OF SUBJECTS: 11

MATERIALS USED

i Pen

i Paper

i Gujarati translated Lower extremity functional scale

Inclusion criteria:

§ Age- 18-60 years

§ Both male and female

§ Willingness to participate.

§ Subjects having dysfunction or problem related to lower limb

§ Able to understand Gujarati language

Exclusion criteria:

§ Medical red flags or back related problems.

Procedure

Permission was obtained for translation of Lower Extremity Functional Scale (LEFS). LEFS was then translated into Gujarati language according to the Guidelines by Beaton^[10] Individuals referred to Physiotherapy clinic and having lower limb musculoskeletal condition were screened for the eligibility. Those who fulfilled the inclusion and exclusion criteria were included in the study after taking written informed consent. Face validity of Gujarati translated LEFS was calculated by asking all the individuals to grade each item of Gujarati translated lower extremity functional scale as how important each item appear to them in measuring their lower extremity dysfunction according to 5-point Likert scale,

5= Very important,

4= Important,

3= Relatively important,

2= Slightly important and

1= Unimportant

ITEM IMPACT SCORE for each item was calculated from frequency and mean item importance score.^[11]

i Frequency = %of subjects scored item as 4 or 5

i Importance = Mean importance score of items

ITEM IMPACT SCORE = FREQUENCY/
IMPORTANCE

ITEM IMPACT SCORE ≥ 1.5 corresponds to 50% of frequency and mean of 3 on 5-point Likert scale. If the **Item impact score** of an item is equal to or more than 1.5, it will be maintained in the instrument, otherwise it will be eliminated.

[12]

Results

Total of 11 subjects having lower extremity

musculoskeletal dysfunction were included in the study. Mean age of individuals was 44.54 ± 12.18 years. All the subjects responded to each item of questionnaire (drop out=0). Microsoft Excel 2010 was used to analyze the data. Item impact score of **15** out of 20 items of Gujarati translated Lower extremity functional scale (LEFS) was more than **1.5**, **5** items scored less than **1.5**.

Results show statistically significant need to change the items of Gujarati translated LEFS.

Table 1 shows Frequency, Mean importance score and Item impact score of LEFS

ITEM OF LEFS	FREQUENCY (%)	IMPORTANCE (MEAN)	ITEM IMPACT SCORE
1	1	5	5
2	1	5	5
3	0.09	1.36	0.12
4	1	5	5
5	0.54	3.2	1.72
6	0.6	3.63	1.98
7	1	5	5
8	1	4.2	4.2
9	0.45	3.36	1.52
10	0.45	3.2	1.5
11	0.9	4.1	3.7
12	0.54	3.36	1.83
13	1	4.6	4.6
14	0.54	3.27	1.76
15	1	4.7	4.7
16	0.27	2.0	0.54
17	0.27	2.0	0.54
18	0.18	1.6	0.29
19	0.18	1.8	0.32
20	1	5	5

Discussion

Results show that 5 out of 20 items in Gujarati translated LEFS were scored less than 1.5 on Item impact score.

The items which scored less were as follows:

જાણવાજવામાં અથવા બહારની કબજામાં

i સપાટરસ્તા પરદોડવામાં

i ઉભડખાબડરસ્તા પરદોડવામાં

i ઝડપથી દોડતી વખતે તવિરવળાંકો લેવામાં

i કુદકામારવામાં / કુદવામાં

Ø Getting in and out of bath in terms of western culture refers to the use of bathtub. Whereas in India, people usually squat for having bath, or use a stool.

Ø Running, both on even and uneven ground, didn't appear to be important to most of the subjects, as was the case with hopping.

Ø Though the young participants considered these activities useful, but the Item impact score was still low.

Ø Hence, probable reasons for low scores could be differences in the activities in the Gujarati population.

Ø Activities like sitting on the floor, squatting could be more appropriately used to assess lower limb function in Gujarati population.

Conclusion

5 out of 20 items in Gujarati translated LEFS needs to be modified/eliminated for its implication into Gujarati population, considering difference in culture.

Implications

Finding face validity of Gujarati translated LEFS

helps to know how important each item appears to the participants. Eliminating or modifying the low scoring item will help in better evaluation of the individual's dysfunction and adapting the scale according to the lifestyle of Gujarati population. Further, after finding face validity, scale will be considered for other forms of validity like content validity.

Declaration

Ethical Approval

Ethical approval for this study was taken from Institutional Ethical Committee.

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Conflict of Interest: None

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