

Urdu Translation and Cross-Cultural Validation of Short Fall Efficacy Scale International

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ABSTRACT

Background: In 2008 a tool named Short Fall efficacy international (Short FES-I) was developed by kampen et al to assess fear of fall in older adult's Short fall efficacy scale was consisted on seven items. It is four points Likert scale. The total score is 28 which shows the high concern of fall and 7 score shows the minimum concern of fall.

Objective: The Aim of the study was to translate and validate short fall efficacy scale international in Urdu language.

Methods: it was a descriptive cross-sectional study. The study was completed in 2 phases in first phase forward and backward translation process was performed according to proFaNE guidelines. Secondly, the psychometric properties of Urdu version short FES-I were statistically analyzed using a sample of 110 community dwelling older adults at 2 Private hospitals of Shahdara Lahore. Participants completed the Urdu versions of Short FES-I and ABC scale. They also performed TUG. Reliability and validity of short FES-I Urdu version was evaluated by calculating Cronbach's alpha, intra-class correlation co-efficient and Pearson/ Spearman rank correlation co-efficient. SPSS 21 was used for data analysis.

Results: Content validity analyzed by content validity index ranged from (0.92- 1). Reliability and validity of Urdu Version Short FES-I was evaluated by calculating Cronbach's alpha ($\alpha=0.93$), intra-class correlation co-efficient (ICC=0.96) and Pearson rank correlation co-efficient ($p=-0.90$) Short FES-I to ABC scale and to TUG scale its ($P=0.82$). SPSS 25 was used for data analysis.

Conclusion: Urdu version of Short FES-I was designed, tested for its validity and reliability on older adults. Urdu version was linguistically accurate and acceptable. It showed good content, and convergent validity. It also presented high internal consistency and test retest reliability. As an outcome, the Urdu version of short FES-I can be useful for Urdu speaking population.

Keywords: Fear of fall, fall efficacy, Urdu version, Reliability, Validity

INTRODUCTION

Fear of fall (FOF) is defined as apprehension related to falling which keeps a person away from activities that person was once capable of performing. Fall related fear can be seen common among older adults, stroke, Parkinson's disease, and Multiple sclerosis. FOF is associated with activity limitation, and turn down life quality and increased risk of fall.^(1, 2) Fear of falling is more prevalent in older adults. The incident of falling fear in older adults is 75% in a study and 56% in another study.⁽³⁾

Mostly falls are not the consequence of single cause, but due to multiple factors that lead to fall. The possible cause of fall in any diseased or healthy older adult are different. Parkinsonism may increase the possibility of fall through a number of different processes like movement slowness, spasticity and rigidity of lower limb muscles and some cognitive impairments.⁽⁴⁾ Stroke is a disease cause's fall due to balance impairments through loss of the function of cerebrum, decrement in peripheral senses.⁽⁵⁾

OA is a chronic condition linked with the increase in risk of fall as the patient couldn't bear full weight on the affected side which may cause the change in posture which leads to tripping of person.⁽⁶⁾

Dementia nevertheless of its pathogenesis is a strong indicator of fall due to lack of awareness related to safety.⁽⁷⁾ Some medications, like antidepressants, sedatives are risk factors of fall. Decrease in glucose level and diabetic neuropathy have strong relationship with falls.⁽⁸⁾

Changes in physiology of normal aging may lead to increase fall. With normal aging, decrement of input from different systems e.g. Proprioception system, visual system, and vestibular system can be seen which may change the balance.⁽⁹⁾

The 5th main cause of death in older adults after heart disease, cerebrovascular disease, cancers and lungs disease are accidental injuries causes. 2/3rd deaths happened due to fall occur from unintended injuries. Adults above 65 years of age have a risk

of fall for once in each year and this ratio increase with age.⁽¹⁰⁾ 20% of falls need medical treatment, prevalence of fractures and serious traumatic issues due to fall is 5%. Other psychosocial effects, related to after-fall disease can be dreadful, these are fear, stress, anxiety and negligence toward activity.⁽¹¹⁾

Fall fear was checked as a two cut-off points outcome which was be frightened or not frightened or with tool checking self-efficacy or confidence of balance. After that two scales those were based on theory of social cognition and asses fall associated self- efficacy, which present the confidence level to do activities of daily living without fall.⁽¹²⁾

Many scale have made to test the physical and psychological properties of fall incorporating, risk and fear of fall. In 2008 a tool named Short Fall efficacy international (Short FES-I) was developed by kampen et al to calculate fall related fright in elderly adults in English language. The tool has original version FES-I was consisted on sixteen items. The FES-I was created by fall prevention Network Europe. The tool has excellent reliability, validity and has developed in English and in other languages. Short FES-I is consisted on 7 items. It is 4 points Likert scale. The total score is 28 which shows the high concern of fall and 7 score shows the minimum concern of fall.⁽¹³⁾ All the items of the tool are independent of each other and measure fear fall during activity of daily living like dressing, bathing, showering, sitting, standing and walking in and out of home.⁽¹⁴⁾

This patient centered self- reported too was exclusively made to asses FOF in older adults This questionnaire can calculate fall related fear in Multiple sclerosis, patient with joint pain, vestibular disorders and nonspecific patient population.⁽¹⁵⁾

The significance of this study is that the Urdu speaking researcher and clinician will have a fear of fall related tool in their own language to collect the data and to evaluate patient and community dwelling older adults reported fear of fall more accurately. This will also save the time of clinician.

METHODOLOGY

After receiving consent from Riphah International University and the SFES author, this cross-sectional study was carried out approval of synopsis from BASR the study was executed in two phases. The original SFES was translated into Urdu in step one, and the validity and reliability of the resulting Urdu version were evaluated in phase two. Translation

Translation of the tool was divided in to five stages according to proFaNE procedure.⁽¹⁶⁾ (Fig 1)

Stage 1: 1st version (Forward translation): Forward translation from English to Urdu was the most initial step. In this step two bilingual translator having Urdu as their mother language was chosen. Both of them individually translated the tool in to Urdu language.

Stage 2: 2nd version: Synthesis of translations: After the translation 2 experts compared the original Short FES I with Urdu version of Short FES –I and formed a unified version of scale in Urdu language. (T1-T2)

Stage 3: Backward translation: 2 Translators were chosen to translate the version 2. Both translator have strong command on English language. They translated the Urdu short FES-I back in English language. (BT1, BT2. Both backward versions were compared with original version and Urdu version. After changes suggested by two experts a unified English version was developed.

Stage 4: 3rd version: Expert committee: A panel of expert committee of 8 members including methodologists, researchers, and health care providers who reviewed forwarded interpreted version in Urdu language. The review was consisted of 4 points which included clarity, relevance, simplicity and ambiguity.

Stage 5: Final version: After all the necessary changes suggested by expert committee Urdu Short FES-I was used on older adults. (n= 110)

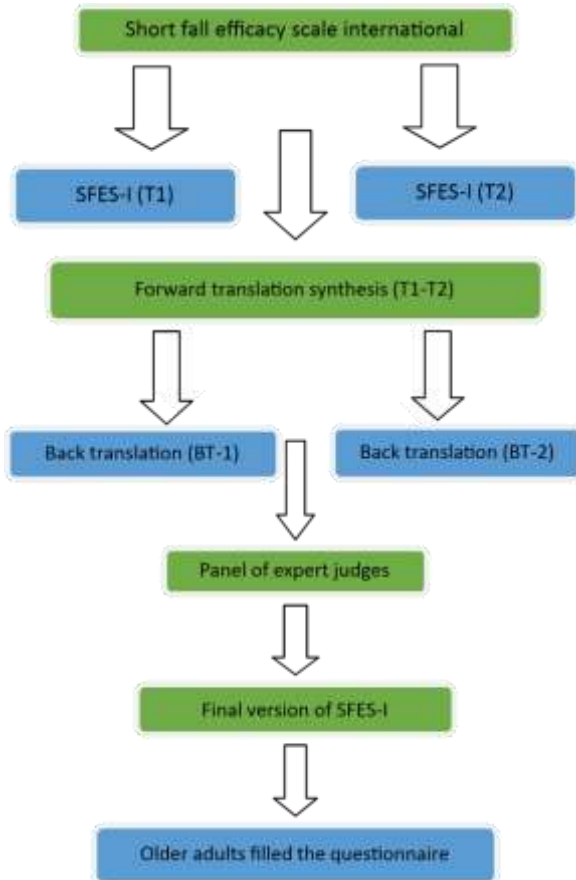


Figure 1: Flow Diagram of Translation Process

Participants and Data Collection: 110 community dwelling older adults⁽¹⁷⁾ were recruited in the study by convenient sampling technique. The Data for the study was collected from Bajwa Hospital Shahdara and Shahid Hospital Shahdara Lahore the adults were recruited on the basis of following inclusion criteria i.e. Adults who were able to read and understand Urdu language, aged between 50-80 years participating in community and who were able to walk for at least 10 meters independently. While those who were suffering from any medical condition that may lead to fall e.g. Epilepsy, stroke, Parkinson’s disease, vestibular disorders, arthritis and had 25/30 score at mini mental state examination were excluded from the study.

Data Analysis Procedure: Data was being analyzed by using SPSS version 21. Internal consistency was assessed using Cronbach’s Alpha values. And the accepted Cronbach’s Alpha value was 0.70-0.79. value below 0.69 was categorized as poor and above 0.8 was categorized as good.⁽¹⁸⁾

ICC was used to analyze the test retest reliability. To calculate this participant completed the questionnaire twice with a one month interval between each reading. ICC of 0.80 value is acceptable (43) Pearson rank correlation coefficient was used to calculate Convergent validity. ABC scale and TUG was used to measure it.⁽¹⁹⁾

Content validity was measured by content validity index.0.7 or more values of index show the item is valid.⁽²⁰⁾

RESULTS

Content validity: Content validity score measured by content validity index. Seven items were checked by 8 experts and all the values were above 0.7. Not a single statement was rejected. Lower value was 0.92 and highest values was 1 which was maximum value. (Table 1)

Demographics: There were 110 older adults of both genders (53.64% females and 46.36% males) included. Age ranges from 50-60(36%), 61-70(43%) and 71-80(20%) Weight 68.8182±15.62707 Heights of participants were 5. 08±.64217.BMI was2.2727±.44740. (Table 2)

Internal consistency: Alpha Cronbach’s used for reliability. Reliability and consistency between items of short FES-I for Cronbach’s alpha in week one and week two is 0.930 and 0.937 respectively. Thus the statistics show that Urdu Short FES-I is a reliable tool. (Table 3)

Test Retest reliability: The tool reliability analyzes by ICC. The value of ICC is 0.96 with 95 % interval of confidence Value shows significant test retest reliability of scale in adults of old age. (Table 4)

Convergent Validity: The value of Pearson correlation coefficient for short FES international with ABC (- 0.94), TUG is (0.82). This concludes that results are excellent negative correlation with ABC scale and moderate correlation with TUG so that short FES-I is a valid tool for use in older adults. (Table 5)

Table 1: Content Validity Index (CVI)

| Questions | Relevance | Clarity | Simplicity | Ambiguity | CVI |
|-----------|-----------|---------|------------|-----------|------|
| Q1 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Q2 | 1.00 | 0.95 | 0.95 | 0.91 | 0.93 |
| Q3 | 0.95 | 0.95 | 0.91 | 0.91 | 0.94 |
| Q4 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Q5 | 0.95 | 0.95 | 0.91 | 0.91 | 0.94 |
| Q6 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Q7 | 0.95 | 0.91 | 0.87 | 0.95 | 0.92 |

Table 2: Demographic data of sample (n=110)

| Age | Minimum | Maximum | Mean ± SD |
|--------|---------|---------|-------------|
| Age | 1.00 | 3.00 | 1.73±.73 |
| Gender | 1.00 | 2.00 | 1.53±.59 |
| Height | 4.01 | 6.50 | 5.08±.64 |
| Weight | 35.00 | 110.00 | 68.81±15.62 |
| BMI | 1.00 | 4.00 | 2.59±.84 |

Table 3: Internal consistency of Short FES I item for week 1 and week 2

| Cronbach's Alpha week 1 | Cronbach's Alpha week 2 | No of Items |
|-------------------------|-------------------------|-------------|
| .930 | .937 | 7 |

Table 4: Intra class correlation co-efficient value for S FES-I

| Items | ICC value | Lower Bound | Upper Bound |
|-------|-----------|-------------|-------------|
| 1 | 0.909 | 0.867 | 0.938 |
| 2 | 0.928 | 0.895 | 0.951 |
| 3 | 0.944 | 0.918 | 0.961 |
| 4 | 0.819 | 0.736 | 0.876 |
| 5 | 0.903 | 0.859 | 0.934 |
| 6 | 0.850 | 0.781 | 0.897 |
| 7 | 0.83 | 0.756 | 0.885 |
| Total | 0.966 | 0.950 | 0.970 |

Table 5: Pearson correlation between U SFES-1, ABC and TUG

| | ABC scale | TUG |
|---------------|-----------|------|
| U Short FES-I | -0.94 | 0.82 |

DISCUSSION

The procedure of adaptation and translation of a questionnaire permit us a conceptual and verbally same version to original tool.⁽²¹⁾ The Short FES-I is consisted on seven items. It is 4 points Likert scale. The total score is 28 which shows the maximum fear of fall and 7 score shows the minimum concern of fall. The cut off values for the scale are seven to eight low concern, nine to thirteen moderate concern and fourteen to twenty-eight high concern of falling.

In present study, internal consistency was analyzed by using Alpha Cronbach's. Value for week 1 was 0.93 and for week 2 these values were 0.37 showed good inter item consistency. Test retest reliability was assessed after 4 weeks using Intra class correlation co efficient (ICC). Toll showed excellent test retest reliability and the value was 0.96. Convergent validity was calculated Pearson rank correlation coefficient. This showed negative correlation of Urdu short fall efficacy scale international with ABC scale (-0.90) scale and positive correlation with TUG (0.82). Urdu version of questionnaire shows good Pearson correlation with Time up and go test so this is in accordance with a previous study on Japanese older adults. The inference of kimedede et al study showed the value of p was 0.88 and the value of Pearson correlation in this study is 0.82 which shows good correlation. So it is concluded, both tools are valid.⁽²²⁾

In many studies short fall efficacy scale was compared with 16 items fall efficacy scale international. This is in contrast with the present study in current study short FES international is compared with ABC scale. A previous study compared short FES-I with FES international 16 items and both tools were positively correlated (0.82).⁽¹⁾ In this study short fall efficacy scale was compared with ABC scale. Both scales were negatively correlated (-0.90).

Italian version of the scale showed high internal consistency same in the way of Urdu version. The value for Cronbach's alpha of Italian version was 0.98 and the r value was 0.97 which is in accordance to the Urdu version.⁽¹⁷⁾

In a research of Malay bhasa version of seven items fall efficacy scale international, test retest reliability was calculated by ICC the value was 0.90 for it. While value of ICC for short fall efficacy scale (U) was 0.96. This indicates that both versions are reliable.⁽¹⁶⁾ As results of this study give information that there is high internal consistency (.930) in items and excellent internal correlation coefficient (0.96) which is compatible with an old study which shows good internal consistency and ICC value.⁽²³⁾

In another study short FES -I showed low negative convergent validity ($r = -0.664$) with TUG it is in contrast with the Urdu version of the scale which show good Pearson correlation (0.82)⁽²⁴⁾

The Cronbach's alpha for Persian version of short fall efficacy scale had excellent values (0.95) and very good value of ICC (0.88)

this is in accordance with current study which show high value of inter class correlation coefficient and Alpha Cronbach's.⁽²⁵⁾

As compared with different researches, the current Urdu short fall efficacy scale international showed excellent reliability, validity and strong correlation having high Alpha Cronbach's which concludes U short FES-I is reliable and valid tool to asses Fear of fall in older adults.

CONCLUSION

Urdu version of Short FES-I was designed, tested for its validity and reliability on older adults. Urdu version was linguistically accurate and acceptable. It showed a good content, and convergent validity. It also presented high internal consistency and test retest reliability. Urdu version of Short FES-I can be useful for Urdu speaking population.

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