



## Original Article

## Translating and Validating of The Foot &amp; Ankle Disability Index (FADI)

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## ABSTRACT

The foot and ankle disability index (FADI) used to determine the severity of the pain with respect to given interpretation and categorize patients according to their score. **Objective:** To determine the translation and validation of questionnaire FADI into Urdu. **Methods:** It was a cross cultural adaptation study. Data of 130 patients of age 16 to 50 year, was taken from hospital, general population or the people who are visiting orthopedic surgeon in the duration of 6 months. Guidelines of Gullimen F have been followed by researcher for this study. **Results:** The results remained in the favor of Urdu translation. Value of the Cronbach alpha coefficient (0.96-0.97) showed the excellent internal consistency. Composite reliability (CR) i.e. 0.964 indicates excellent validity. Average variance extracts (AVE) (0.532) which indicates that all the items are having acceptable convergent validity. Intra-class correlation coefficient (ICC) value (0.966) indicates the excellent consistency. P value of FADI index 1.000 and P value of Urdu score .059 showed that there is a non-significant difference of mean Urdu score with English score. Kappa statistics of all the items are mentioned in the statistical results. **Conclusions:** This study concluded that The FOOT & ANKLE DISABILITY INDEX (FADI) QUESTIONNAIRE converted in Urdu have excellent internal consistency, high reliability of the items, excellent validity, and acceptable convergent validity.

## INTRODUCTION

There are many data research instruments are used but there is a question that we need to validate the tool. The purpose of this paper is to provide the universal equivalence for the translation and validation of the tool [1]. The FOOT and ANKLE disability index (FADI) are used to determine the severity of the pain with respect to given interpretation and categorize patients according to their score. The problem is how can we get an accurate score if the patient cannot give his data in English? The FADI and the FAAM can be considered as the most appropriate, patient-assessed tools to quantify functional disabilities in patients with chronic ankle instability [7,8]. Many countries have faced to collect data in their mother language because of illiteracy rate or any other communication barriers. This study was made to help the targeted community to understand the questions and taken out the

accurate data. The cross-cultural adaptation study aims to determine the translation and validation of questionnaire FADI into Urdu. It was a cross cultural adaptation study.

## METHODS

Data of 130 patients of age 16 to 50 year was taken from hospital, general population or the people who are visiting orthopedic surgeon in the duration of 6 months. Guidelines of Gullimen F have been followed by researcher for this study. In this study SPSS/21 will be used to evaluate the statistical procedure. We followed the Guillemín F guidelines for this study and data procedure [1]. Method of this study is slightly different as we have to change the tool settings into the mother language and then validate it. There are four stages for methodology. For translation into mother language Translator 1 Dr Shehnaz kousar Translator

1 (Designation Associate professor of Urdu. Working place Govt associate college for women model town Lahore. Qualification Ph.D (URDU). Translator 2 Dr Rubina Shasta. (Designation Assistant professor of Urdu, working place Govt College for women model town Lahore, her qualification is Ph.D (URDU). They have done their best to translate FADI scale into Urdu For backward translation we have also used two translators, Translator 1 Mrs Anila Yasmeen (Designation: quality circle head humanities and Linguistics department, Working place: Superior University Lahore, qualification: M.phill Linguistics UK). Translator 2 Areesha Batool (designation: Lecturer, working place: Govt College for women model town Lahore, qualifications: M.Phil English) After the forward and backward translation the tool was sent to the higher committee which include for the bilingual review. The committee consists of Physiotherapists, Ph.D. scholars, M. PHIL of English and Urdu. In this process of cross-cultural adaptation study we get 5 to 10 layman. These people review and fill the English and Urdu both forms of FADI scale. Content validity is the procedure at which the quality of the each items or the number of question have checked (3,4,8,9,11,12,13,14,15,16,17,19,20,22,23,25,26) indicate less agreement. Kappa value of these items (1, 2, 5, 6, 7, 10, 18, 21, 24) indicate strong agreement. In this report the questionnaire which we translated in mother language Urdu has been checked by the expert committee according to the physical therapy. Both English and Urdu questionnaire are approved. In Urdu questionnaire the main heading of the scale will be written in English as per the original tool so, the translation of the main heading in Urdu will be written below the main heading. The word N/A is explained by some additional words. The actual meaning of the abbreviated term is not available. After following all steps the tool administrated among the people to finally assess by the research group and then instruction, format and setting was checked according to original tool.

## RESULTS

### One-Sample Test Pre testing:

	N	Mean	Std. Deviation	Std. Error Mean
Index (FADI) Score	10	46.50	10.266	3.246
Urdu Score	10	58.3000	17.25656	5.45700

**Table1:** One-Sample Test Pre testing

	Intra-class Correlation	95% Confidence Interval		P Test with True Value 0			
		Lower Bound	Upper Bound	Value	df1	df2	Sig
Single Measures	.992a	.976	.997	232.109	14	14	.001
Average Measures	.996c	.988	.999	232.109	14	14	.001
Test Value = 46.50							

	T	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval	
					Lower Bound	Upper Bound
Index (FADI) Score	.000	9	1.000	.000	-7.34	7.34
Urdu Score	2.162	9	.059	-.5446	-5.446	24.1446

**Table2:** P value of Test re Test and Intra-class correlation coefficient

For test re test P value indicates that there is non-significant difference of mean of Urdu score with that of English score. Intra-class Correlation Coefficient (ICC) value .996 indicates there is excellent consistency and excellent agreement between two raters. Hence there is not a lot variability between raters and very consistent to one another. P value indicates that there is slight significant difference of Urdu and English score. P value indicates that there is non-significant difference of mean of Urdu score with that of English score.

Reliability Statistics		
Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.968	.967	26

**Table3:** Cronbach's alpha coefficient of the items

Table 3 is showing Cronbach's alpha coefficient of the items. As table shows Cronbach's alpha coefficient is 0.968 (>.70 ) thus indicates excellent Internal consistency and high reliability of the items. Cronbach's alpha coefficient of the items. Table 4 is showing Cronbach's alpha coefficient of the items. As table shows minimum value of Cronbach's alpha coefficient is .969 and maximum value is .97. all the items are having Cronbach's alpha coefficient above 0.7, thus all items having excellent Internal consistency and high reliability. Composite reliability (CR) & Average variance extract (AVE) of the items Table is showing Composite reliability (CR) & Average variance extract (AVE) of the items. CR value 0.946 indicates excellent validity. Average variance extract (AVE) = 0.532 indicates that all items are having acceptable convergent validity Tests re-test reliability, Intra-class Correlation Coefficient (ICC), Kappa

**Statistics:** Kappa value of these items (3,4,8,9,11,12, 13,14,15,16,17,19,20,22,23,25,26) indicate no agreement. Kappa value of these items (1, 2, 5, 6, 7, 10, 18, 21, and 24) indicate strong agreement

## DISCUSSION

As far as the cross cultural adaptation of FADI is being so accurate and correct in the mother language so that the patient can totally understand what has being asked in the tool and it is for all the government sectors patients as well as the private patients [24]. To conduct and getting the best result of this study it will be necessary to follow the all

vital steps which has been given in the referenced article or literature [25]. The FADI original tool has the reliability of  $r=0.64$  and the reliability of our data analysis shows  $r=0.956$  which shows the better reliability in Urdu language. ICC value of the original tool is 0.85-0.94. Value of ICC in Urdu language is .996 better than original tool ICC. For better analysis report the Kappa stats are also mentioned. P value of FADI index 1.000 and Urdu score is .059 indicates that there is no significant difference between mean of Urdu score with English score. In Italian version of FADI scale the author Massimilano et al has conducted the result in mother language Italian which shows the Intra Class Correlation ( ICC) value of 0.9986 and person's correlation coefficient (PCC) shows the value of 0.9972-0.9988. FADI tool in Urdu language has shown better result than original tool ICC (.996). The Brazilian-Portuguese version of Cumberland Ankle Instability Tool the author Marcos De Noronha et al has conducted the result in their mother language which shows the cronbach alpha 0.86-0.88 and reliability is 0.95 to 0.97 [26]. FADI tool in Urdu language has shown better result than original tool ICC (.996). The Turkish version of Foot and Ankle Hind foot scale the author Yildiz Analay Akbaba et al has conducted the result in their mother language which shows the Intraclass Correlation Coefficient (ICC) value is 0.91 and reliability value is  $r=.37-.41$  and P value shows  $P=.01-.03$  [27]. FADI tool in Urdu language has shown better result than original tool ICC (.996). The German version of Foot and Ankle Ability Measurement scale the author H.Lohrer et al has conducted the result in their mother language which shows the Intra-class Correlation Coefficient (ICC) value 0.590-0.998 and P value is 0.528 and contract validity of FAAM-G and ankle laxity show the better correlation which is  $P=0.819-0.861$  [28]. FADI tool in Urdu language has shown better result than original tool ICC (.996). These all comparison and statistical analysis procedure are the guidelines of Beadon et al [29].

## CONCLUSION

This study concluded that The FOOT & ANKLE DISABILITY INDEX (FADI) QUESTIONNAIRE converted in Urdu is have excellent internal consistency, high reliability of the items, excellent validity and acceptable convergent validity.

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