



## Translation and Validation of the Pelvic Floor Distress Inventory

### Short Form (PFDI-20) to Urdu Language

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#### ABSTRACT

Pelvic floor issues are distressing for postmenopausal women. Pelvic floor distress inventory short form (PFDI-20) is translated and validated into many languages to determine pelvic floor disorders in those populations. There was a need to translate and validate this tool to Urdu language.

**Objective:** To translate Pelvic floor distress inventory short form (PFDI-20) into Urdu language and determine validity and reliability of Urdu version of (PFDI-20).

**Methods:** This validation study was conducted at Riphah International University, Islamabad. Pelvic floor distress inventory short form (PFDI-20) Questionnaire was translated into Urdu language by Urdu translators and bilingual medical professional using WHO method. Final approved version was applied to menopausal women with at least one symptom of pelvic floor disorders.

##### Results:

Data was obtained from 85 menopausal women. Mean scoring obtained was  $41 \pm 26$ . Data was obtained at time (T1) and then after few weeks at time (T2). For PFDI-20(URDU) and Sub scales (POPDI-6, CRSDI-8 and SUI-6), there was no significant difference between the test and retest scores. Value for Cronbach's Alpha was 0.966. Pearson's correlation between PFIQ-7 and PFDI-20 and its subscales was 0.450, showing moderate correlation.

##### Conclusion:

The study indicates that, PFDI-20 Scale of Urdu version is a valid and reliable tool. This tool can be used for clinical and research purpose.

## INTRODUCTION

Pelvic floor issues are the main issues a gynecologist experiences in her training.(1) Pelvic floor disorders (urinary incontinence, fecal incontinence, and pelvic organ prolapse) influence numerous women. Pelvic floor disorders, which include urinary incontinence, fecal incontinence, and pelvic organ prolapse, are profoundly predominant conditions in females, influencing in general, practically 25% of women in the United States.(2) According to a research performed on Turkish women 67.5% of women experienced pelvic floor dysfunction of at least one major type. The commonness of each pelvic floor problem assessed in this investigation was as per the following: urinary incontinence (50.7%), anal incontinence (19.8%), constipation (33.2%) and obstructed defecation (26.8%). Investigation of risk factors verified that age was the key factor connected to development of pelvic floor disability (3). Different women are reluctant to advise their medical services supplier about manifestations since they might feel embarrassed. Furthermore, numerous ladies imagine that troubles with bladder control are normal and dwell with their manifestations. Overall, bladder control issues are manageable, and these treatments can work on women with pelvic floor issues (4).

It is unexpected for a few pelvic floor issues to exist together in a same woman or to foster successively over the long haul (5). For wide-running appraisal of the impact of pelvic floor issues on the quality of life of women, most appropriate assessment tool is PFDI-20. PFDI-20 is the short-form version of the Pelvic Floor Distress Inventory. It

has 3 subscales: UDI (28 items), Colorectal-anal Distress Inventory (17 items), and Pelvic Organ Prolapse Distress Inventory (16 items) (6)

Translation of PFDI-20 was done into many languages across the globe to check the validity, reliability, responsiveness of the scale, in their native languages.(1, 7-17) Its translation is available in Spanish, Dutch, Iranian, Greek, Portuguese, Turkish, Tigrigna, Finnish, Japanese, Danish, African, Indonesian, Polish and Hebrew language etc. Most of the studies used multi step translational method (1, 8, 9, 11, 18-24).

## METHODOLOGY

It was validation study (observational study) conducted at Riphah International University, Islamabad, Pakistan from November to March 2020. After getting approval from the institutional ethics committee, with Ref#Riphah#RCRS#REC#000842. The sample size was calculated by using general rule of thumb and assumed sample size approximately 85(22), Sampling technique was non-probability convenient sampling technique. Data was collected from private hospitals of Rawalpindi and Islamabad and mainly from Margalla general hospital Rawalpindi. Menopausal women aged 45 and older who can also read and understand Urdu were included in the study. All included women must had at least one symptom of pelvic floor disorder (Urinary incontinence, fecal incontinence or pelvic organ prolapse) UI, FI and POP were defined with using of International Continence Society criteria. Females with previous pelvic surgery, malignant tumor, cognitive impairment and dementia were excluded. Self-structured questionnaire was used

for demographic data. PFDI-20-Urdu Version was used to assess quality of life in patients with pelvic floor disorders. Correlation of PFID-20 was calculated using PFIQ-7.

#### **Data Collection Procedure:**

The first phase was about the translation process of PFDI-20 Scale. PFDI-20 Scale was rendered and culturally adapted in Urdu language through the guidelines of World Health Organization(WHO). According to the guidelines, 3 translators were hired. Two for forward translations (English to Urdu)their native language was Urdu and can speak English fluently. For backward translation, (Urdu to English) translator's native language was Urdu.

From two forward translators, one was Linguistic translator and the second was Medical professional who has command in Urdu and English language. Both translators did the translation of the original PFDI-20 scale into Urdu and it results in formulation of PFDI-20- Urdu 1 and PFDI-20- Urdu 2. When the forward translations completed then a meeting was arranged on Zoom between two forward translators for the reconciliation to form the third version of target language (Urdu language).

After the forward translation, translations were sent to expert team. The expert team consisted of 10 experts, who review the translation to assess the face and content validity and marked their responses on TASP table, likert Scale and dichotomous variable for understanding the Urdu translation. After that, all translators made changes to make Urdu translation more comprehensive and clearer. The changes were discussed with Urdu scholar and

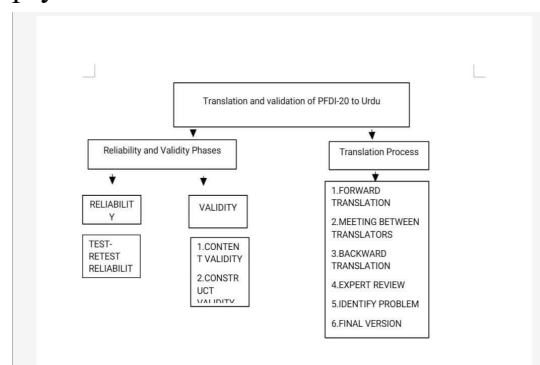
hence, final (fourth) target language version of PFDI- Urdu was developed.

After this, English scholar was recruited for the back translation. The reconciled version was sent him to translate it in English language. Then the backward translation was again reviewed by the experts. They compared, back translation with original English scale and recognized the inconsistencies and with suggested changes, they formulated second version of backward translation of English PFDI-20 scale.

At the end, pretesting was done on 10 patients. They were asked to fill the final form of Urdu PFDI-20. Cognitive interviews of the population were performed. The aim of conducting cognitive debriefing interviews was to ensure that this translation is "understandable" and any feedback provided by participants was acceptable.

The PFDI-20 was then applied to 85 women with pelvic floor dysfunction after taking informed consent.

In the second Phase, validity and reliability of the PFDI-20 Urdu form were checked. For validity, face validity and content validity were checked by involving the expert's panel. To check the reliability of the final version of PFDI-20 Urdu, Test-Retest and psychometric evaluation was assessed.



## Figure 1, Translation and validation of PFDI-20

### Phase I

#### Forward Translation

There were two forward translators from which one was Linguistic translator i.e., Urdu scholar whereas the second was medical expert who has command in both Urdu and English language. Firstly, both translators did the translation of PFDI-20 into Urdu language, and we got two versions of the questionnaire PFDI-20-1 and PFDI-20-2

#### Expert Panel

After the forward translation, expert panel compare the two translations. Expert panel comprises of 10 experts, who review the translation to check the content according to Likert scale and TASP symbol plate. For face validity a dichotomous scale Yes and No was used. Face validity is judgment on the operationalization of a construct. Experts assessed the items according to “relevance”, “clarity”, “simplicity”, and “ambiguity” of item. Marks were given accordingly. Most of experts agreed some changes in question no. 6,11,13,14, and 20. These changes were discussed with Urdu scholar and hence final version of PFDI-20 of Urdu was developed

#### Back Translation

For back translation English expert was recruited. The confirmed version was sent to him to translate it back to English language. Back translator had not seen the original version of PFDI-20. Then the backward translation with original version of questionnaire was again reviewed by experts. Both the original and translated version were compared to recognize some inconsistencies and suggestions. After discussion from

English scholar a final version of backward translation was formulated.

### Final Version

The final version of the questionnaire in Urdu form and English form was a result of all the suggested changes above. After the completion of translation process, Data collection was started on postmenopausal women, having pelvic floor disorders(n=85) using Urdu final version of Pelvic Floor Distress Inventory Questionnaire.

### Phase II

In second phase validity and reliability were analysed. For validity, face and content validity were checked through experts and to check reliability of the final version of questionnaire in Urdu, Test-retest evaluation was assessed.

## RESULTS

Questionnaire was distributed among postmenopausal women who experienced at least one symptom of pelvic floor disorder at some time, after they hit menopause. Mean age was  $57.36 \pm 3.32$ , mean height as  $5.40 \pm 0.23$  and mean weight as  $76.09 \pm 10.27$  (Table 1). Mean scoring obtained was  $41 \pm 26$ .

**Table 1 Descriptive statistics of PFDI-20(Urdu) & Scoring mean of PFDI-20(URDU)**

Demographic data	Mean $\pm$ SD
Age (Years)	57.36 $\pm$ 3.32
Body mass (Kg)	76.09 $\pm$ 10.27
Height (Feet and inches)	5.40 $\pm$ 0.23
PFDI-20(Urdu) Scoring	41 $\pm$ 26

## Expert Panel

Face validity was assessed on dichotomous scale as YES and NO. Panel of Experts to access the content validity used LIKERT and SYMBOL plate both.

## Face Validity

For All the questions, All the experts documented 100% “Yes” and 0% Documented “No”.

## Content Validity Ratio (CVR) and Content Validity Index (CVI)

Content Validity Index (CVI) for PFDI-20(Urdu) was 0.982. Table 2 illustrates CVR of all items and CVI.

**Table 2 Validity ratio and Content Validity Index PFDI-20**

Item no.	Content Validity ratio (CVR)and Content Validity Index (CVI) Description	CVR
1	کیا آپ پیٹ کے نچلے حصے میں عام طور پر دباؤ کا سامنا کرتے ہیں؟	1
2	کیا آپ کو پیٹ کے نچلے حصے میں بھاری پن یا سست روی کا عموماً سا منا کرنا پڑتا ہے؟	1
3	رہتی ہے یا کچھ (کسی حصے کا ابھر کر باہر آ جانا) کیا آپ کو عموماً کوئی سوزش گرتا رہتا ہے جسے آپ اندام نہانی کے علاقے میں دیکھ یا محسوس کر سکتے ہیں؟	1
4	نچلے معدے کا (کیا آپ کو آنتوں کی مکمل حرکت کے لیے عموماً اندام نہانی یا مقعد کے آس پاس والی جگہ کو دبانا پڑتا ہے؟ (بڑی آنت کا اختتامی حصہ/ایک حصہ	1
5	کیا آپ نا مکمل مٹانے کو خالی کرنے کا احساس عموماً محسوس کرتے ہیں؟	1
6	کیا آپ کو پیشاب شروع کرنے یا مکمل کرنے کے لیے کبھی انگلیوں کو اندام نہانی والے علاقے میں دھکیلنا پڑتا ہے؟/شرمگاہ	1
7	کیا آپ کو لگتا ہے کہ آنتوں کی حرکت کے لیے آپ کو بہت سخت دباؤ ڈالنے کی ضرورت ہے؟	1
8	کیا آپ کو لگتا ہے کہ آنتوں کی حرکت کے اختتام پر بھی آپ نے اپنے آنتوں کو مکمل طور پر خالی نہیں کیا ہے؟	1
9	کیا آپ عموماً اپنے پاخانہ پر کنٹرول کھو دیتے ہیں جبکہ آپ کا پاخانہ ٹھیک حالت میں ہو؟	1
10	کیا آپ عموماً اپنے پاخانہ پر کنٹرول کھو دیتے ہیں جب آپ کا پاخانہ ڈھیلا ہو یا مائع حالت میں ہو؟	1
11	سے نکلنے والی گیس پر اپنا (بڑی آنت کے اختتامی حصہ) کیا آپ عام طور پر مقعد کنٹرول کھو دیتے ہیں؟	1
12	جب آپ پاخانہ کرتے ہیں تو کیا آپ کو عام طور پر درد ہوتا ہے؟	1
13	کیا آپ کو آنتوں کی نقل و حرکت کی وجہ سے حاجت کا جلد احساس ہوتا ہے اور واش روم جانے کی ضرورت پڑتی ہے؟	0.6
14	کیا آپ کے پاخانے کا کچھ حصہ آنتوں کی حرکت کے دوران یا اس کے بعد کبھی مقعد اور ابھرے ہوئے حصے سے باہر آ جاتا ہے؟	1
15	کیا آپ عام طور پر بار بار پیشاب کرتے ہیں؟	1
16	کیا آپ کا پیشاب عموماً حاجت کے احساس کی وجہ سے رستا ہے؟ یہاں حاجت سے؟ واش روم جانے کی ضرورت کا سخت احساس ہے مراد	0.8
17	کیا آپ کا پیشاب عموماً ہنسنے، کھانسنے یا چھینکنے کی وجہ سے رستا ہے؟	1
18	میں رستا ہے؟ (یعنی قطروں کی صورت) کیا آپ کا پیشاب عموماً تھوڑی مقدار	1
19	کیا آپ کو اپنے مٹانے کو خالی کرنے میں عام طور پر دشواری کا سامنا ہوتا ہے؟	1
20	جنسی اعضاء کے وہ حصے جو (کیا آپ پیٹ کے نچلے حصے یا جینیاتی علاقے	1

میں عموماً تکلیف دہ درد محسوس کرتے ہیں؟ (جنسی تولید میں شامل ہوتے ہیں)	
<b>Content validity Index (CVI)</b>	0.983

### Reliability

Table 3 depicts Reliability, that was measured using test-retest method (Table 3). Data was obtained at time (T1) and then after few weeks at time (T2). For PFDI-20(URDU) and Sub scales (POPDI-6, CRSDI-8 and SUI-6), there was no significant difference between the test and retest scores. Value for Cronbach's Alpha was 0.966 and Cronbach's Alpha Based on Standardized Items was 0.967. Intraclass correlation was 0.935(single measures) and 0.966(average measures).

**Table 3 Reliability analysis (Cronbach's Alpha and Intraclass correlation coefficient)**

	<b>Cronbach's Alpha</b>	<b>Intraclass correlation Coefficient</b>
PFDIU-20	0.967	0.966

### Construct Validity

Construct validity was measured by analyzing Pearson's correlation between PFIQ-7 and PFDI-20 (table 4) and its subscales (table 5). Correlation coefficient between the two questionnaires was 0.450, showing moderate correlation

**Table 4 Correlation of PFDI-20 to PFIQ-7**

	<b>R</b>	<b>P</b>
PFIQ-7	0.450	0.01

**Table 5 Correlation of PFDI-20(URDU) and sub scales**

	<b>R</b>	<b>P-value</b>
<b>POPDI-6</b>	0.961	0.01
<b>CRAD-8</b>	0.987	0.01
<b>SUI-6</b>	0.963	0.01

### DISCUSSION

The objective of this study was to translate the Pelvic Floor Distress Inventory short form (PFDI-20) Scale and then to find out the reliability and validity of the Urdu form of this scale. To validate the translated pfdi-20 Scale Urdu version, face validity and content validity were checked. For face validity a dichotomous variable of yes and no was used to mark each item of the scale. For content validity Likert scale and TASP table were used to check the content of items of the scale. In terms of comparison, the most significant problem involved in the forward and backward Translation of three items,3,4 and20.

This tool has been cultural adapted to other languages such as French, Swedish, Chinese, Arabic, Turkish etc. In this study, PFDI-20 is translated by forward-backward method similar to the method performed for Turkish, Chinese, and Arabic and French version. In comparison to, the Swedish version used a dual translation method, and the Spanish version used

the Translation, Review, Adjudication, Pretesting, and Documentation method (TRAP).(1, 15, 19, 20)

Mean age of target population appeared 57 years. Mean height was 5 feet and 4 inches. Mean weight was 76kg. Most of the women were in their early post menopause phase and were only with few symptoms. Maximum scoring was 115. Mean scoring was 41 with standard deviation of 26. Mean scoring for Turkish version of PFDI-20 was about 108. (20)

For an instrument to be valid in context of content validity, should have CVR value between 1 and -1. Content validity for this study is 1 for most of the items except two items (item 13 and item 16) having CVR below 1. This translated tool in Urdu, demonstrating good content validity. In 2013, a study was conducted by themos et al. to produce Greek version of PFDI-20. They established near to excellent content validity. (17)

PFIQ-7 was used to calculate construct validity, this tool is very valid with moderate reliability. (6) Reliability was measured using test-retest method. Data was obtained at time (T1) and then after few weeks at time (T2). For PFDI-20(URDU) and Sub scales (POPDI-6, CRSDI-8 and SUI-6), there was no significant difference between the test and retest Scores. Intraclass correlation=0.966 (95% confidence interval) and Cronbach's alpha=0.967. This evident that PFDI-20(URDU) is good at test-retest reliability. In another study which translated and validated this tool to Chinese language, test-retest analysis, showed even better reliability with an ICC of 0.997, and a range from 0.994 to 0.997 was found in its subscales.

(15) Study for Finnish version depicted moderate reliability, ICC=0.79 to 0.92 and Cronbach's alpha=0.69 to 0.96.(25)

Correlation coefficient was measured for construct validity, between the PFIQ-7 and PFDI-20. It was 0.450. According to research conducted in china by Yidi Ma et al. , Pearson's correlation was 0.87.(15) The construct validity of the PFDI-20 and its subscales demonstrated with Pearson's correlation. It illustrated medium to moderate correlation with p value less than 0.001. All the subscales illustrated moderate correlation except POPDI-6, value less than 0.4. Similar result found for Norwegian version, where POPDI-6 was least correlated in comparison to other scales. (12)

From English into Japanese translation of PFDI-20 was performed in 2013, Test-retest reliability of the J-PFDI-20 and three subscales was good to excellent (ICC = 0.77–0.90). Cronbach's alpha range was 0.52–0.83. Difference in scoring was observed in healthy and diseased patients. Japanese version obtained acceptable construct validity. This version experienced negative correlation with 1-QOL. (11)

## CONCLUSION

An Urdu version of PFDI-20 is reliable and valid to evaluate the symptoms and the quality of life in women with pelvic floor disorders. The present Urdu version showed a very good agreement of the translated Urdu version with original English version. The psychometric properties of PFDI-20 Urdu version found to be good with strong reliability and validity and thus, can contribute to clinical setting and research purpose.

**Strength of study:**



This study translated and validated Urdu version of a valid and reliable tool. Patients, Clinicians and future researchers can get benefit by using this tool.

### **Limitation of Study**

This study did not find responsiveness and all types of validity and reliability, includes only postmenopausal women with symptoms of pelvic floor dysfunction and did not include women of childbearing age, who are at risk of pelvic floor disorders.

### **Recommendations of Study**

Future researchers can assess further components of validity and reliability and can Urdu version of PFDI-20 should be tested upon different group of population.

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