Translation and psychometric validation of Brief Illness Perception Questionnaire: the Urdu version

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Introduction

Shifting our concerns to the assessment of patients' illness perception in Pakistan, this segment of research is vague, and there is a paucity of information. One possible reason is linked to the lack of validated research tools targeting illness perceptions in Urdu (the National language of Pakistan).

The unavailability of a reliable and valid tool for evaluating illness perception in the Urdu language was the motivation for the current research. In conclusion, the study aimed to translate and examine the psychometric properties of the Urdu version of the BIPQ among patients with Type 2 diabetes in Quetta City, Pakistan.

Methods

A standard forward–backwards translation procedure was adopted. The Urdu (lingua franca of Pakistan) version of BIPQ was approved by an independent expert panel and committee review. The intraclass correlation (ICC) established the consistency of the retained items in the questionnaire. The test-retest reliability for the pilot and field study was identified by using Cronbach's coefficient. An Exploratory Factor Analysis, conducted using principal axis factoring extraction and oblique rotation with Kaiser normalization, was employed to validate the BIPQ in Urdu. The open-ended section of the BIPQ was discussed for reliability and validity through the Delphi method.

Results

The 8-item translated version (later termed the Brief Illness Perception Questionnaire in Urdu, or BIPQ-U) exhibited an acceptable Cronbach's alpha value of 0.814 (test) and 0.800 (re-test). The ICC for all eight items exhibited exceptional coefficient values of > 0.80. Internal consistency during the field study was also acceptable (α = 0.815). The appropriateness of psychometric assessment was confirmed through the Kaiser–Meyer–Olkin measure of sampling adequacy (0.855) and Bartlett's Test of Sphericity (p<0.05). A statistically significant difference between females and males (p = 0.025) confirmed the discriminative validity through Mann–Whitney U test. Based on initial eigenvalues > 1, four factors were extracted, accounting for a total variance of 75.96%. With acceptable commonalities of >0.30, all eight items of BIPQ-U were retained. Lastly, members of the Delphi group reached a mutual consensus on adding question number 9 to the validated BIPQ-U.

Table 1: Demographic characteristics of study respondents

Characteristics	Frequency	Percentage
Age in years (38.01±9.44)		
18-27	14	15.6
28-37	40	44.4
38-47	18	20.0
>47	18	20.0
Gender		
Female	25	27.8
Male	65	72.2
Income of respondents		
None	18	20.0
< 25000	9	10.0
25001-50000	39	43.3
> 50000	24	26.7
Educational level		
Illiterate	15	16.7
SSC**	12	13.3
HSSC***	9	10.0
Graduate	51	56.7
Postgraduate	3	3.3
Marital status		
Married	60	66.7
Unmarried	24	26.7
Divorced	3	3.3
Widowed	3	3.3
Occupation of the respondents		
Housewife	11	12.2
Public	46	51.1
Private	27	30.0
Unemployed	6	6.7
Duration of disease		
< 5 years	56	62.2
> 5 years	34	37.8
Treatment regimen		
Insulin	29	32.2
OHA****	61	67.8

Table 2: Reliability of Test–Re-Test (N=30; pilot phase)

Items in BIPQ-U	Cronbach's Alpha Coefficient (Based on Standardized Items)			
	Test (Time 0) Week 1	Scale when item items deleted	Re-test (Time 1) Week 3	Scale when items deleted
How much does your illness affect your life?	0.814	0.816	0.800	0.803
How long do you think your illness will continue?		0.809		0.804
How much control do you feel you have over your illness?		0.796		0.799
How much do you think your treatment can help your illness?		0.804		0.801
How much do you experience symptoms from your illness?		0.784		0.800
How concerned are you about your illness?		0.817		0.803
How well do you feel you understand your illness?		0.809		0.86
How much does your illness affect you emotionally? (e.g. does it make you angry, scared, upset or depressed?)		0.810		0.809

Table 3: Factors sources and variance of the model

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total
1	2.292	28.645	28.645	2.292	28.645	28.645	1.988
2	1.628	20.347	48.992	1.628	20.347	48.992	1.652
3	1.149	14.359	63.350	1.149	14.359	63.350	1.480
4	1.009	12.615	75.965	1.009	12.615	75.965	1.241

Table 4: Factor Loadings from Exploratory Factor Analysis

Item #	Primary Loading	Factor	Factor Name
1.	0.766 (F1)	Factor 1	Cognitive Representation
1.	0.746 (F1)	Factor 1	Cognitive Representation
1.	0.853 (F3)	Factor 3	Control and understanding
1.	0.844 (F3)	Factor 3	Control and understanding
1.	0.840 (F1)	Factor 1	Cognitive Representation
1.	0.615 (F2)	Factor 2	Emotional Representation
1.	0.451 (F3)	Factor 3	Control and understanding
1.	0.664 (F2)	Factor 2	Emotional Representation

Table 5: Survey items, rotated factor loading, and communalities (n = 90)

Constructs	Component Matrix*				Pattern Matrix*				Structure Matrix*				Communalities
	1	2	3	4	1	2	3	4	1	2	3	4	0.766
1.	0.492	0.392	0.328	0.513	0.192	0.155	0.808	0.217	0.319	0.087	0.819	0.135	0.632
1.	0.315	0.304	0.663	0.032	0.113	0.189	0.726	0.251	0.026	0.172	0.732	0.285	0.827
1.	0.746	0.187	0.465	0.141	0.916	0.036	0.084	0.037	0.904	0.103	0.078	0.022	0.842
1.	0.549	0.569	0.080	0.460	0.283	0.853	0.201	0.106	0.317	0.857	0.116	0.015	0.796
1.	0.840	0.011	0.273	0.123	0.785	0.178	0.141	0.243	0.825	0.276	0.263	0.257	0.719
1.	0.198	0.451	0.252	0.643	0.119	0.002	0.021	0.840	0.125	0.115	0.025	0.839	0.822
1.	0.446	0.615	0.491	0.058	0.116	0.844	0.244	0.153	0.006	0.861	0.239	0.237	0.766
1.	0.386	0.664	0.018	0.287	0.497	0.184	0.236	0.522	0.521	0.201	0.356	0.561	0.673

Conclusion

The BIPQ-U reported good psychometric properties and was coherent with our study patients. With an overall alpha index of 0.815, the translated version was deemed reliable, exhibiting acceptable internal consistency. Similarly, the ICC via the One-Way Random effects model with single measures for all items tested for intra-rater reliability was excellent. The extracted communalities for all items of BIPQ-U confirmed that all items of the original BIPQ can be adopted in the translated version. Furthermore, with highly acceptable loading values, the factors extracted during the EFA could establish the validity of BIPQ-U. Concluding, the impressive scale reliability and sound construct validity of the BIPQ-U rate it as a dependable instrument in research and individual diagnostics.