

Translation and Validation of Interpersonal Relationship Anxiety Questionnaire (IRAQ)

Fauzia Naz

Queen Mary College, Lahore

Rukhsana Kausar

University of the Punjab, Lahore

Measuring anxiety in terms of interpersonal relationship is important because of the intricate link between interpersonal relationship anxiety and parent-child relationships. This needs a valid and reliable measure to assess interpersonal relationship anxiety. The Interpersonal Relationship Anxiety Questionnaire (IRAQ) may compose such a measure. The present study was carried out to investigate the structural validity of the Urdu translated version of the Interpersonal Relationship Anxiety Questionnaire (IRAQ; Rohner Research publications, 2012) in Pakistani sample (N=300). The study comprised two studies. In study 1; the questionnaire was translated in Urdu Language. In study 2, construct validity and factor structure of translated IRAQ were estimated by performing exploratory and confirmatory factor analysis. Confirmatory factor analysis showed good indices of fit with a single factor i.e., "Interpersonal relationship anxiety" with an excellent alpha ($\alpha = .93$). The discriminant validity revealed that IRAQ discriminates well between clinical and normal population. Evidence was found for both convergent and divergent validity: The measure was positively correlated with Personality Assessment Questionnaire and was negatively correlated with parental Warmth/Affection. It is concluded that Urdu version of IRAQ is a reliable instrument for assessing interpersonal relationship anxiety in clinical as well as non-clinical samples in Pakistan.

Key words: interpersonal relationship anxiety, adolescents, IRAQ, factor analysis

Interpersonal relationship anxiety symptoms are common concerns in clinical samples of children and adolescents and especially in females with somatoform disorders. During adolescence period, anxiety symptoms may get worsen as youngsters face an increasingly complex social milieu and often become more aware of their differences and interpersonal difficulties (White, Oswald, Ollendick & Scahill, 2009). Thus interpersonal relationship anxiety, if left unresolved, could be the source of additional morbidity and would be difficult to handle the actual disorder.

Interpersonal relationships are important as the child lives and interact with family, relatives and friends. All these relationships are important as when the child interacts with significant others, he/she may feel a texture of acceptance or rejection. This notion is described in detail in Parental Acceptance-Rejection Theory (Rohner, Khaleque, & Cournoyer, 2007). According to the PARTheory, perceived rejection from significant others especially from parents is related with negative personality dispositions and interpersonal relationship anxiety among children, adolescents and adults (Khaleque & Rohner, 2002). Research has identified that perceived rejection from loved ones is related with anxiety within interpersonal relationships. As in a research, Naz and Kausar (2012) investigated rejection from parents and comorbidity of interpersonal relationship anxiety in adolescents. The researchers found strong association of parental rejection with interpersonal relationship anxiety. So, it was necessary to develop an

instrument that measure anxiety in terms of interpersonal relationship. Consequently, Rohner (Rohner Research Publications, 2012) devised an Interpersonal Relationship Anxiety Questionnaire (IRAQ) to measure anxiety in terms of interpersonal relationship which was expected to study prospective correlates of perceived parental rejection within PARTheory (Brown et al. 2014).

Requirement for translating IRAQ into Urdu

It is estimated that there are above 250 million individuals who speak, use and understand Urdu language (Lewis, 2012). As majority of this population can't read, write or understand English and no measures exist which assess anxiety symptoms in terms of interpersonal relationship. So there is need to translate a measure which is not only valid and reliable but can assess the symptoms of anxiety in terms of interpersonal relationship in clinical as well as non-clinical sample who speaks Urdu.

Researches have confirmed that IRAQ is a valid and reliable measure (Brown et al. 2014). To find IRAQ as a valid and reliable measure, Brown et al. explored psychometric properties of IRAQ. The researcher employed IRAQ on 78 women (41 % European American & 35% African American) from United States. The mean age of the sample was 20.17 years. The researchers employed IRAQ twice on the same sample with the interval of one month. The researchers by using principal components factor analysis with varimax rotation, found all nine symptoms on a single factor which explained 50% of the variance. The factor loading ranged from .56 to .87 with high Cronbach's alpha reliability of .87 and test-retest reliability was good ($r = .70, p < .01$).

Correspondence concerning this article should be addressed to Fauzia Naz, Assistant Professor, Queen Mary College, Lahore, Pakistan, Email: fauziakaramat@gmail.com

In another study done in China, Li and Rohner (2014) explored psychometric properties of IRAQ in Chinese sample. The researcher recruited 215 adolescents (Mean age = 16.09; SD = .80) from urban China. The researcher found one factor with highly Cronbach's alpha value i.e., .88. Similarly, Tkalic (n.d) used IRAQ on Croatian sample. He recruited sample of 123 school children. Tkalic found IRAQ a single-factor measure with Cronbach's alpha .83.

The assessment of interpersonal relationship anxiety should be conducted using informants and modalities as adolescents with psychopathology often do not display age-typical symptoms of anxiety (White et al. 2009). Because of anxiety symptoms, parent-child inter-personal relationships get disturbed and children can suffer from parental negativity, inattentiveness, criticism, irritability (Johnson, Cohen, Kasen, Smailes, & Brook, 2001; Radke-Yarrow & Klimes-Dougan, 2002) dissatisfaction (Hirshfeld, Biederman, Brody, & Faraone, 1997), over-control, and lack of expressed warmth by the parent (Whaley, Pinto, & Sigman, 1999). Garber and Flynn (2001) reported that high-risk offspring experience more conflicts with their parents than their peers. Garber and Flynn (2001) argued that females are more inclined to develop anxiety symptoms.

Anxiety in children may present in variety of forms such as social anxiety, separation anxiety, generalized anxiety and panic disorders. But when children face anxiety in terms of interpersonal relationship with someone to whom they considered very important, they tend to develop psychopathologies in future (Rohner, 2004) and if is left undiagnosed and untreated, may persists through adolescence and adulthood (Pfeffer, Lipkins, Plutchik, & Mizruchi, 1988). Thus, it is very important that clinically anxious children are identified as early as possible and provided with appropriate intervention which is dependent upon the availability of psychometrically sound and valid assessment instrument which help identifying children with anxiety problems especially interpersonal relationship anxiety.

The present study focused on translation and validation of Interpersonal Relationship Anxiety Questionnaire (IRAQ).

We expected that factor analysis for IRAQ will be endorsed with a single factor containing all nine symptoms of IRAQ as described by the original author. The emerging factor analysis may reveal the actual underlying structure of interpersonal relationship anxiety. We also explored discriminant validity of IRAQ and expected that scores of clinical population on IRAQ would be different (higher) from the scores of non-clinical population.

To best our knowledge, present study is the first study for a valid and reliable measure of anxiety in terms of interpersonal relationships in Urdu in Pakistani settings. As the need for a reliable and valid translated Urdu version stirred up for the following reasons.

- To translate IRAQ in national language for Pakistani sample that can address the experience of anxiety in terms of interpersonal relationship.
- To study anxiety in terms of interpersonal relationship in clinical as well as non-clinical sample.
- To ensure to translate a scale that has psychometrically sound properties.

Current study was comprised of two studies i.e., study 1 and study 2.

Study 1: Translation of IRAQ in Urdu language.

The IRAQ was translated by following standardized international guidelines directed by Mapi International Institute (2008). This process involved conceptual definition, forward translation, backward translation, cognitive debriefing, pilot testing and validation.

Sample for pilot testing

For pilot testing, a sample of 40 adolescents, who could read Urdu as well as English, was recruited from the outdoor departments of different hospitals with the permission of authorities. After taking informed consent, the participants were given both Urdu and English versions of IRAQ. Data were analyzed.

Results of Pilot Testing

Firstly, Cronbach's alpha was calculated for both versions of IRAQ. Both Urdu and English versions of IRAQ showed sufficient Cronbach's alpha values i.e., .88 for Urdu version and .87 for English version. Further, correlation between the scores of two versions was calculated. Results showed highly significant correlations ($r = .97$; $p < .001$) between the scores of two versions.

Study 2: Study 2 comprised in the procedure of determining factorial validity of IRAQ. It was completed by administering translated Urdu version of IRAQ on clinical as well as non-clinical population.

Method

Participants

A sample of 300 adolescent girls was recruited in which 150 girls were with somatoform disorders (SD) and 150 were normal girls with minor medical problems (MMP). The age range of the sample was between 13 years to 18 years with mean age of 15.75 (SD = 1.66) and 15.85 (SD=1.70) for both samples respectively. The adolescent girls with SD were taken from psychiatry outdoor departments of three hospitals in Lahore. The comparison group i.e., adolescent girls with MMP, was recruited from the general outdoor departments of the same hospitals from where we recruited the sample with SD. In recruitment of adolescents with SD, only those adolescents were included who were diagnosed with SD by psychiatrist, were females, were unmarried and

did not have any physical disability. In recruitment of adolescents with MMP, only those adolescents were included who had not any diagnosed psychological problem, were unmarried and did not have any physical disability.

Table 1
Individual and Family Characteristics as Frequencies and Percentages of Sample

Characteristics	Adolescents with SD (n=150)		Adolescents with MMP (n=150)	
	f	%	f	%
Education				
6 th Grade	2	1.3	1	.7
7 th - 8 th Grade	109	72.7	88	58.7
9 th - 10 th Grade	39	26.0	59	39.3
Some college education	0	0.0	2	1.3
Education Status				
Discontinued	118	78.7	41	27.3
Continued	32	21.3	109	72.7
Family System				
Joint Family System	113	75.3	104	69.3
Separate Family System	37	24.7	46	30.7
Birth Order				
First Born	32	21.3	40	26.7
Middle Born	21	14.0	58	38.7
Last Born	86	57.3	51	34.0
Only child	11	7.3	1	0.7
Total	150	100	150	100
No. of Siblings				
Not applicable	11	7.3	1	0.7
1	6	4.0	2	1.33
2	14	9.3	17	11.3
3-6	81	54.0	120	79.9
7-10	30	19.9	10	6.8
11-12	8	5.8	0	0.0
Fathers' education				
No education	33	22.0	5	3.33
5 th Grade	33	22.0	7	4.66
6-8 th Grade	31	20.0	23	15.33
9-10 th Grade	44	30.0	66	44
College education	9	6.0	45	30
University education	0	0	4	2.7
Mothers' education				
No education	41	27.3	5	3.3
5 th Grade	42	28.0	13	8.7
6-8 th Grade	19	12.7	25	16.6
9-10 th Grade	39	26	67	44.7
College education	9	6	22	14.7
University education	0	0	18	12

Assessment Measure:

Interpersonal Relationship Anxiety Questionnaire (IRAQ)

IRAQ is devised by Rohner (Rohner Research Publications, 2012). It consists of a list of 9 symptoms of anxiety that individual feel in the context of interpersonal relationships. There is no reverse item. Four options are given for each symptom which is almost always true (4),

sometimes true (3), rarely true (2), and almost never true (1). IRAQ is in developing phase. However, some of the researchers have found the Cronbach's alpha reliability of IRAQ as .87 (Brown, 2014) and .88 (Li, 2014).

Parental Acceptance-Rejection Questionnaire (Child PARQ; Short form)

To find out the convergent validity of IRAQ, a sub-scale of Child PARQ i.e., Warmth/Affection (for both parents) was used. Warmth/Affection measures perceived acceptance, warmth, affection and love for the child from his/her parents. This sub-scale consists of eight items with excellent alpha reliability i.e., is .83 ($p < .001$; Rohner & Khaleque, 2005). The scale rates responses on four points Likert scale which ranges from almost never true (1) to almost always true (4).

Personality Assessment Questionnaire (Child PAQ; Rohner & Khaleque, 2005)

To find out divergent validity, Child PAQ (Urdu version: Naz & Kausar, 2012) was used. Child PAQ measures the mental health consequences of interpersonal acceptance and rejection in the form of personality maladjustment. The internal consistency reliability coefficients of different dimensions of PAQ range from .46 to .74 (Rohner & Khaleque). The response options of the questionnaire ranges from almost never true (1) to almost always true (4).

Procedure

Firstly, after getting final version of translated IRAQ, the researcher approached psychiatrists of some selected hospitals. They were briefed about the objectives of research. They were told that the researcher needs clinically diagnosed adolescent girls with SD. The referred girls were assessed during their routine appointment for medical checkup. The translated Urdu version of IRAQ was administered on each participant individually. All the participants were instructed to read IRAQ carefully and select the response that was most appropriate for them. All the assessment procedure was done in a separate room in the hospital premises as the accompanied persons of the participants were not allowed to accompany during assessment procedure. The same process of assessment was done with the adolescents with MMP. For the adolescents with SD, total 180 adolescents were approached from which 30 adolescents were unable to complete the questionnaires because of severity of symptoms (they were not feeling well) so they were excluded from the sample. For adolescents with MMP, 165 adolescents were assessed. Fifteen adolescents were excluded because they left the questionnaires incomplete because most of them had severe fever and headache. The sampling process was completed in one year and five months. The researcher kept record of the responses of the participants. Data were analyzed and results were reported.

Ethical Considerations

Ethical considerations were included taking permission from author of IRAQ to translate and use this tool. Permission was also taken from the author to use sub-scale of PARQ (warmth/affection) and PAQ. Permission was taken from medical superintendents of hospitals to recruit sample from hospitals and to have separate room for assessment procedure. Participants were told about the objectives of the research. The adolescents were assured of the confidentiality of the responses. They were also assured that the responses will be used only for research purpose.

Results

Results included performing exploratory factor analysis of the IRAQ, confirmatory factor analysis, item-total correlation, Cronbach's alpha if item deleted, Cronbach's alpha reliability of the IRAQ and independent-sample *t*-test to compare the mean scores of adolescents with somatoform disorders and adolescents with minor medical problems on IRAQ.

Table 2
Psychometric Properties of the IRAQ, Warmth/Affection (sub-scale of PARQ) and Personality Assessment Questionnaire (N=300)

Measures	k	M (SD)	α	Minimum	Maximum
IRAQ	9	21.05 (6.97)	.93***	9	36
Warmth/Affection (father)	8	40.08 (16.68)	.93***	8	32
Warmth/Affection (mother)	8	49.29 (15.39)	.92***	8	32
PAQ	42	119.01 (25.58)	.94***	42	168

****p*<.001

Exploratory Factor Analysis (EFA)

Exploratory Factor analysis with Varimax rotation was employed. The criteria for taking factors were (a) a simple structure with distinctive factors with its items on highly loading on single factor; (b) an Eigen value equal to or greater than 1; (c) a factor loading of minimum .40 and (d) meaningfulness of the factor in relation to the underlying construct (Zeller & Carmines, 1980; Norman & Streiner, 1994). To check the assumption of normal distribution of responses, Bartlett's Test of Sphericity was employed (Bartlett, 1954). It was significant (*p* < 0.001) which showed that the responses were distributed adequately to analyze a potential factor structure. In addition, Kaiser Meyer Olkin test for adequacy of sampling was applied. The Kaiser-Meyer Olkin test was highly satisfactory (i.e., .90) to employ a factor analysis (see table 2). For EFA, all items loaded significantly ranging from .78 to .90 and for CFA, the items loaded significantly ranging from .45 to .92.

Confirmatory Factor Analysis (CFA)

The present study also used CFA to compare the fit of the factor structure of IRAQ using AMOS. The Comparative Fit Index (CFI; acceptable fit values>0.90), and root mean square error of approximation (RMSEA: acceptable

value<0.08), NFI (normed fit index: acceptable fit values > 0.90) and GFI (Goodness of fit index: acceptable fit value > 0.90) were estimated to determine the model fit. We conducted CFA to obtain three models from three samples i.e., first CFA for the scores of total sample (N=300), second CFA for the scores of only 150 adolescents with somatoform disorders and third CFA for the scores of 150 adolescents with minor medical problems. All three models indicated a good fit to the data. The results are presented in table 3 as well as table 4.

Table 3
The Factor Loadings of the Interpersonal Relationship Anxiety Questionnaire (IRAQ) in the Factor Solution Obtained through Varimax Rotation (N=300).

S. No.	Factor loadings	
	EFA	CFA
Symptom 1	.47	.45
Symptom 2	.57	.59
Symptom 3	.64	.67
Symptom 4	.66	.73
Symptom 5	.76	.92
Symptom 6	.71	.88
Symptom 7	.73	.82
Symptom 8	.69	.79
Symptom 9	.66	.75
<i>Eigen values</i>	5.83	
<i>Percentage of Variances</i>	64.78	
<i>Kaiser-Myer-Olkin Measure of Sampling Adequacy</i>	.90	
<i>Bartlett's Test of Sphericity</i>	2371.31***	
<i>Approx. Chi-Square</i>		

Note. CFA, confirmatory factor analysis; EFA, exploratory factor analysis

****p*<.001

Results show that for EFA single meaningful factor i.e., interpersonal relationship anxiety emerged with Eigen value of 5.83 explaining 64.78% of the variance. The single factor included all nine symptoms of IRAQ which proved the existing model given by the original author of IRAQ i.e., Rohner (Rohner Research Publications, 2012).

Table 4
Indices of Model Fit from Confirmatory Factor Analysis

Sample Groups	Model	χ^2	Df	CFI	GFI	NFI	RMSEA
All (N=300)	Sample Default	19.29	18	.99	.98	.99	.01
	Model	(<i>p</i> >.05)					
Adolescents SD (n=150)	with Default	31.39	20	.98	.96	.95	.06
	Model	(<i>p</i> <.05)					
Adolescents MMC (n=150)	with Default	39.10	23	.94	.94	.88	.06
	Model	(<i>p</i> >.05)					

Figure 1. Model Emerged from Confirmatory Factor Analysis (Based on Total Sample)

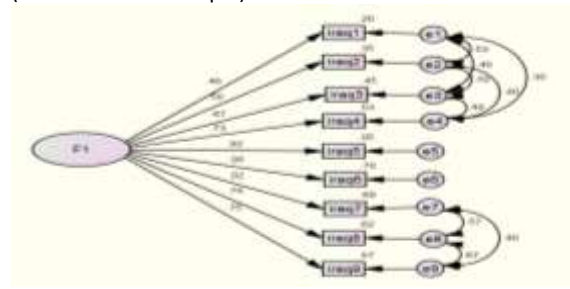


Figure 2. Model Emerged from Confirmatory Factor Analysis. (Based on Sample from Adolescents with Somatoform Disorders)

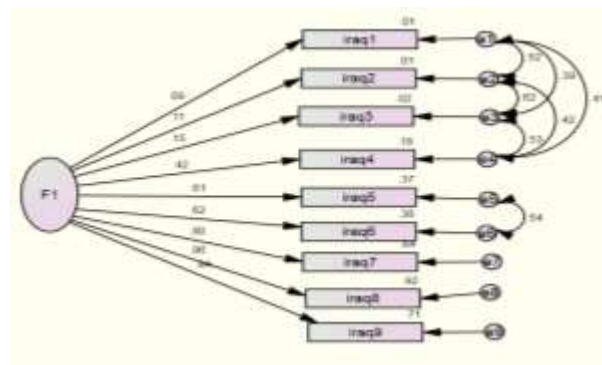
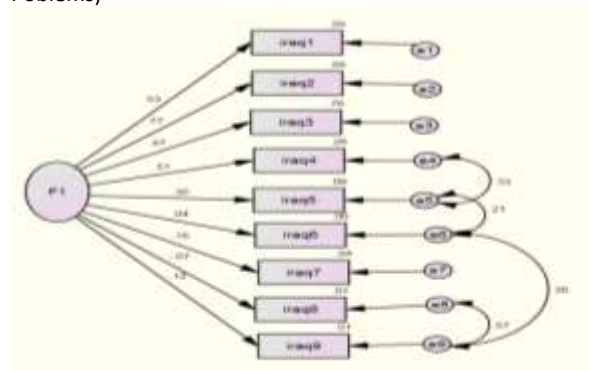


Figure 3. Model Emerged from Confirmatory Factor Analysis (Based on Adolescents with Minor Medical Problems)



Further, to attain the construct validity of the acquired factor structure for translated Urdu version of IRAQ, item-total correlation and Cronbach's alpha if item deleted were also computed. The results are presented in table 5.

Table 5
Item Total Score Correlations and Cronbach's alpha if item deleted for the Urdu Translated IRAQ (N=300).

S. No.	Item No.	Correlation with total score	Cronbach's alpha if item deleted
1	1	.53**	.93
2	2	.70**	.92
3	3	.74**	.92
4	4	.76**	.92
5	5	.83**	.91
6	6	.79**	.92
7	7	.80**	.91
8	8	.77**	.92
9	9	.75**	.92

Note. **p<.01.

Results show correlation with total score and Cronbach's alpha if item deleted for IRAQ. For item-total correlation, these values ranged from .53 to .83 (p<.01). These values show highly satisfactory correlation coefficients. The values of Cronbach's Alpha was reasonably high ranging from .91 to .93. High Chronbach's values suggests that the symptoms were consistently homogenous.

To attain an indication of the construct validity of the subsequent factor structure, inter-item correlations were computed.

Table 6
Inter-item Correlation of the IRAQ

Symptoms	2	3	4	5	6	7	8	9	M	SD
1	.64**	.60**	.51**	.41**	.38**	.37**	.31**	.33**	3.02	0.86
2	-	.81**	.65**	.55**	.50**	.50**	.44**	.44**	3.06	0.84
3	-	-	.73**	.64**	.57**	.53**	.48**	.47**	2.84	1.03
4	-	-	-	.69**	.62**	.57**	.57**	.55**	2.72	0.88
5	-	-	-	-	.80**	.75**	.71**	.68**	2.07	1.11
6	-	-	-	-	-	.73**	.71**	.68**	2.16	1.06
7	-	-	-	-	-	-	.84**	.77**	1.77	1.05
8	-	-	-	-	-	-	-	.86**	1.70	0.91
9	-	-	-	-	-	-	-	-	1.67	0.88

Note. (N = 300)

**p<.01

Results revealed that the Urdu version of IRAQ has highly significant inter-item correlation. It means that all nine symptoms of anxiety are measuring only one construct i.e., interpersonal relationship anxiety.

Discriminant Validity of IRAQ

Discriminant validity of IRAQ was determined by discriminating scores across two groups i.e., adolescents with SD (150) and adolescents with MMP (150). This method was referred by Wiggins (1973) to test effectiveness of a measure which could distinguish clinical and non-clinical samples. Hence, two Therefore, two distinct groups were recruited who maintained this construct i.e., anxiety. To make comparison of both groups, independent sample t-test was employed.

Table 7
Comparison of Mean Scores of Adolescents with SD and Adolescents with MMP on IRAQ

Measure	Adolescents with SD (n=150)		Adolescents with MMP (n=150)		t(298)	p	95%CI UL-LL 10.54-12.35	Cohen's d
	M	SD	M	SD				
Interpersonal Relationship Anxiety	26.77	4.87	15.32	2.80	24.92	.00		1.98

Note. SD = Somatoform Disorders; MMP = Minor Medical Problems.

When the mean scores of adolescents with somatoform disorders and adolescents with minor medical problems on IRAQ were compared, the two groups were found to be significantly different on translated Urdu version IRAQ ($t = 24.92$; $p < .001$). Results revealed that mean scores of adolescents with SD ($M = 26.77$, $SD = 4.87$) on IRAQ was higher as compare to the mean scores of adolescents with MMP ($M = 15.32$, $SD = 2.80$). The value of Cohen's d is sufficiently higher describing large effect.

Convergent and divergent validity

Divergent validity was determined by finding correlations of total score of IRAQ with Warmth/Affection, a sub-scale of parental acceptance-rejection. Results showed that total score on IRAQ was strongly correlated with the warmth/affection (mother) as well as warmth/affection (father). There was highly significant negative correlation ($r(300) = -.59$, $p < .01$) between IRAQ total scores and warmth/affections for mother and warmth/affection for father ($r(300) = -.64$, $p < .01$).

The Convergent validity of the scale (IRAQ) was assessed through finding correlation between the total scores of IRAQ and total scores of Personality Assessment Questionnaire (PAQ). Results revealed highly significant positive correlation ($r(300) = .78$, $p < .01$).

Determining Cut-off scores for IRAQ

To determine the cut-off scores for IRAQ, Quartiles and percentiles were computed. The lowest score on IRAQ was 4 and the highest score was 36. The frequencies of adolescents

in each range are based on total sample. Detailed results are presented in the following table.

Table 8
Quartiles, Percentiles, Severity Indices, Scores on IRAQ and Frequencies of Adolescents in Each Category (N=300)

Quartiles	Percentiles	Severity Indices	Scores on IRAQ	Frequencies of adolescents in each range
1 st	1 st to 25 th	Normal anxiety	1-15	89
2 nd	26 th to 50 th	Mild anxiety	16-20	65
3 rd	51 st to 75 th	Moderate anxiety	21-27	81
4 th	76 th to 100 th	Severe anxiety	28-36	65

Results show that 89 adolescents fall in the first quartile which is named as normal anxiety category while 65 adolescents fall in the second quartile which is named as mild anxiety. On the other hand 81 and 65 adolescents fall in the third and fourth quartiles respectively. This may be because frequencies were based on combined sample and the adolescents who fall in normal anxiety and mild anxiety categories belong to normal group and adolescents who fall in the categories of moderate and severe anxiety belong to SD group.

Table 9
Age wise Frequencies, Means, SD and Median in each Category

Age Range	Adolescents with SD (n=150)			Adolescents with MMP (n=150)		
	N	M (SD)	Median	N	M (SD)	Median
14-15	36	27.41 (5.33)	26.50	40	15.07 (2.91)	15.00
15-16	52	25.86 (4.58)	26.50	48	15.08 (2.58)	15.00
17-18	62	27.01 (4.70)	27.00	62	15.67 (2.90)	15.00

Discussion

Present research was conducted with the aims of getting a valid and reliable translation of interpersonal relationship anxiety questionnaire (IRAQ). IRAQ was translated in Urdu Language following international guidelines by Mapi Research Institute (2008). Further, the research also established factorial validity of the translated Urdu version of IRAQ. Moreover, the research explored item-total correlation, Cronbach's alpha if item deleted, inter-items correlation, convergent and divergent validity and determination of cut-off scores of Urdu version of IRAQ.

First aim of the research i.e., translation of IRAQ in Urdu was gained by doing translation. By following Mapi Research Institute's guidelines, all the constructs in English were conceptually defined. After forward translation, backward translation, pilot testing, it was found that Urdu version of IRAQ consisted in simple and daily used language. Results from pilot study showed that Urdu version of IRAQ was an easily comprehensible by the population to whom it was employed. The Cronbach's alpha value (i.e., .93) was good which demonstrate that Urdu version of IRAQ has high

internal consistency between the items. Moreover, there was highly significant positive correlation ($r = .97$; $p < .001$) between the two versions (i.e., both English and Urdu) of IRAQ. This shows that the translated Urdu version of IRAQ was a highly reliable measure.

The second aim of present research was to determine the factorial validity of the translated Urdu version of IRAQ. Both EFA as well as CFA revealed that IRAQ is a single factor questionnaire that has excellent internal consistency i.e., .93 ($p < .001$). Confirmatory factor analysis suggested that the structure of the IRAQ could be a valid and reliable measure which explained satisfactorily by a single factor. Using EFA and CFA on two samples of adolescents, one with somatoform disorders and the other was with minor medical conditions, we showed that Urdu version of IRAQ covers all anxiety symptoms included in English version. CFA showed very good indices like CFI, NFI, GFI and RSMEA for all three models based on total sample, sample contained only adolescents with somatoform disorders and the sample contained adolescents with minor medical problems. All three models show satisfactory values of CFA. Both EFA and CFA showed very good values for factor loading. These results are consistent with the findings of Brown et al. (2014) who used IRAQ with American sample. Brown et al. recruited 78 women with the mean age of 20.17 years (41% European American & 35 % African American) for studying interpersonal relationship anxiety. Results demonstrated that IRAQ was a one factor measure with very good factor loading which ranged from .57 to .87 and the measure showed sufficient alpha reliability consistency i.e., ($r = .70$, $p < .01$).

The results of our study are also in line with those of Li and Rohner (2014) who explored psychometric properties of IRAQ in Chinese sample. The researcher recruited 215 adolescents (Mean age = 16.09; SD = .80) from urban China. The researcher found one factor with highly Cronbach's alpha value i.e., .88. Similarly, Tkalic (n.d) used IRAQ on Croatian sample. He recruited sample of 123 school children and found IRAQ a single-factor measure with Cronbach's alpha .83.

Present study also calculated item-total correlations and Cronbach's alpha if item deleted. The item-total correlations were ranged from normal (.53) to excellent (.83). The range of Cronbach's alpha if item deleted was excellent from .91 to .93 endowed the internal consistency of the items-scale which supports the argument that IRAQ can be used broadly with clinical as well as non-clinical (Nunnally, 1978) sample to identify anxiety symptoms in terms of interpersonal relationship. Inter-item correlation range is also highly significant ($p < .01$) indicates that IRAQ has sound internal consistency. As Nunnally (1978) recommend Cronbach's alpha value of at least .80 to assess individual and for research purpose, these reliabilities should be .70 or higher.

Inter-item correlation of IRAQ was also calculated. Results revealed that Urdu version of IRAQ had good (.31, $p < .01$) to excellent (.86, $p < .01$) correlation. These results demonstrate that all the items of IRAQ show a similar underlying construct i.e., interpersonal relationship anxiety.

Further, in the present study, it was found that Urdu version of IRAQ has a good discriminant validity as the measure discriminates well between clinical versus non-clinical sample. As described by (Nauta, 2004), in clinical scenario, it is essential that an instrument should discriminate well between clinical as well as non-clinical sample. In the present research, sample was based on clinical sample i.e., adolescent girls with somatoform disorders as well as non-clinical sample i.e., adolescents with minor medical problems. The scores of both groups were gained to establish discriminant validity. It was evident from the results that IRAQ discriminates well between two groups.

Next aim of the research was to explore divergent validity of IRAQ. The scores of IRAQ were correlated with Warmth/Affection (parental) scale. Results revealed highly significant negative correlation ($r (300) = -.59$, $p < .01$) between IRAQ total scores and warmth/affections for mother and warmth/affection for father ($r (300) = -.64$, $p < .01$). These findings can be interpreted as the adolescents feel warmth and affection from parents, they feel less anxiety in terms of interpersonal relationship.

The convergent validity of the scale (IRAQ) was assessed through finding correlation between the total scores of IRAQ and total scores of Personality Assessment Questionnaire (PAQ). Results revealed highly significant positive correlation ($r (300) = .78$, $p < .01$). These results can be explained that when adolescents feel interpersonal relationship anxiety, they develop some negative traits in their personality which Rohner gave the names of hostility, aggression, dependency, negative self-esteem, negative self-adequacy, emotional unresponsiveness, emotional instability and negative worldview.

Lastly, we calculated cut-off scores on the basis of total sample. Quartiles and percentiles were calculated. The four quartiles were given the names i.e., first quartile (1-25th percentile) contained normal anxiety (score fall the range between 1-15 on IRAQ), second quartile (26th -50th percentile) contained mild anxiety (score fall in the range between 16-20 on IRAQ), third quartile (51st -75th percentile) contained moderate anxiety (score fall in the range between 21-27 on IRAQ) and fourth quartile (76th to 99th percentile) contained severe anxiety (score fall in the range between 28-36).

Conclusions

To conclude, we confirm that translated Urdu version of IRAQ is a single factor measure which is psychometrically sound, has excellent Cronbach's alpha value and highly significant inter-item correlation. It can be concluding that

translated Urdu version of IRAQ is a comprehensive, comprehensible, short and easy to administer questionnaire that can measure anxiety symptoms in terms of interpersonal relationships in clinical as well as non-clinical sample.

Implications

This is the first research which tried to translate and validate IRAQ in Pakistani sample and determined underlying structure of IRAQ through CFA. Present research has following implications:

- Now we have a comprehensive, reliable and valid questionnaire for measuring anxiety symptoms concerning interpersonal relationship in clinical as well as non-clinical sample that may be used in research.
- The newly translated Urdu version of IRAQ contains very simple and comprehensive symptoms which can also be useful in the assessment of anxiety symptoms in sample in clinical settings so the clinicians can assess the severity of symptoms and then try to handle these symptoms first and then handle the main problem.

Limitations and Future Research Directions

The current research was conducted on the urban sample of female adolescents; however, it can be extended to the sub-urban and rural samples in order to get a comprehensive picture of the indigenous sample. Moreover, the sample consisted only female adolescents, it is suggested that male adolescents should also be included in the study. Further, sample consisted of psychiatry outpatients of public sector hospitals, so future research must also include patients from private sector hospitals also.

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