

# PSYCHOMETRIC EVALUATION OF ARABIC VERSION OF SELF-ESTEEM, PSYCHOLOGICAL WELL-BEING AND IMPACT OF WEIGHT ON QUALITY OF LIFE QUESTIONNAIRE (IWQOL-LITE) IN FEMALE STUDENT SAMPLE OF PNU



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## ABSTRACT

**Purpose:** Usually any research survey can produce better results if it is utilized in local language. The study aimed to measure the inter-consistency, reliability and validity of three measures in Arabic language. Current study is phase I of research project to validate the measures in Arabic language.

**Material and Method:** These three valuable and most widely used scales, Rosenberg self-esteem scale, brief psychological well-being scale and impact of weight on quality of life questionnaire were translated in Arabic language by adapting standard procedure of translation. Data was gathered from female students (N=500) enrolled in bachelors program during the period of November 2014-October 2015.

**Results:** Reliability of the scale was calculated using Cronbach alpha. Psychological well-being scale was found having high reliability of 0.92, whereas, Rosenberg self-esteem scale and Impact of weight on quality of life questionnaire was found having acceptable range of reliability (0.72). All the sub scales of IWQOL-Lite reliability ranges from 0.87-0.95. Three of the scales were found having good content and construct validity.

**Conclusion:** Findings shows that these scales being employed in this study is reliable instrument for measurement of the constructs of interest in Arabic version.

## UDC CODE & KEYWORDS

■ UDC: 159.98 ■ Rosenberg Self-Esteem Scale ■ Psychological well being Scale ■ Impact of weight on Quality of life questionnaire (IWQOL-Lite) ■ Psychometric properties ■ Arabic Translation

## INTRODUCTION

Psychometric tools are the necessity for Psychologists. In case to assess any normal or deviant human functioning we require psychological assessment (Anastasi & Urbina, 1997). This might be structured or semi-structured one. It might be subjective or objective one. Sometimes assessment is used with the purpose of diagnosis or to reach any conclusion that was assumed hypothetically. However, significance of psychological assessment cannot be ignored.

Research is one of the paths that contribute directly for the growth and development of various disciplines. While conducting research most of the survey research designs rely upon standardized scales. Standardization usually increases the reliability of results. Simultaneously there are some studies using their own developed scales. This phenomenon of development of scale fulfills the gap, if there is no standardized scale available. Sometimes if any major construct is missing also invites the researchers to come up with improved, modified or revised scales. Here we cannot oversee the importance of time impact on the validity of research (Shaughnessy, Zechmeister & Zechmeister, 2014).

Development and standardization of scale consumes a lot of energy, time and expenditure. Moreover if any standardized and valid scale already existing provides more opportunities to explore new venues instead of repeating the same efforts. At this point arises another problem of understanding of language. Unfortunately, there are few scales developed in Arabic language. Most of the scales and measures are developed in foreign languages. Another major issue that restricts the use of already Arabic translated scales is related with the difference of language expression. One of expressions that could be understood in one country becomes vague in some other country. The issue of word expression becomes most intense when it is related with feelings and thought. In order to minimize the discrepancies and enhance the effectiveness of psychological test, three scales were selected for translation and apply the process of standardization.

Reliability and Validity are two major statistical concepts rigorously exercised for the standardization of measures. Reliability of the test provides the evidence that it will yield the same results regardless how many times it will be applied (Shaughnessy, Zechmeister & Zechmeister, 2014). Coefficient alpha (Anastasi & Urbina, 1997; Cronbach, 1951) is considered best option to measure the reliability of the test when it is having multiple score items. Moreover reliability coefficient also provides percentage of error variance in the test score that helps to determine directly the percentage of error variance and true variance in test scores. The other important portion of standardization is validity. It provides the basis of confidence that test measures what it designed to measure (Blais & Baer, 2010). To fulfill this requirement statistical procedures were done with the data to calculate validity.

Obesity is one of the health hazards in KSA found spreading enormously and especially in females (Memish et al., 2014). Moreover, weight stigma increases vulnerability to various problems (Gatineau & Dent, 2011), for example, low self-esteem (Paxton, Neumark-Sztainer, Hannan & Eisenberg, 2006), and over all poor quality of life (Vieira, Palmeira, Mata, Kolotkin, Silva, Sardinha & Teixeira, 2012). Simultaneously, Body Mass Index is also found highly correlated with psychological well-being and quality of life among women (Vieira et al., 2012; Hudson, 2008). Researchers are privileged to serve at Princess Nourah Bint Abdulrahman University that is one of the largest Women only Universities. So, it was decided to

conduct a study in various phases. Current work is first phase of the project. The aim of the study is to measure the reliability and validity of the Arabic translated version of three scales.

### Data and Methodology

The sample of this study was comprised of ( $n=500$ ) students enrolled in faculties of health science and humanity of Princess Nourah Bint Abdulrahman University. Respondents were approached from the health sciences Faculty ( $n1=250$ ) and Humanities Faculty ( $n2=250$ ) to gather the data and to provide the chance of equal representation. A request was forwarded to student registration office for the number of students enrolled at each college. Representative Sample was calculated by using statistical power analysis of sample size calculator by using 95% confidence interval. So,  $N=383$  was computed. In order to eliminate any problem in advance, related to completion and return of surveys, data was increased the sample up to 500. Moreover those studies concerned with translation validation specifically confirmatory factor analysis recommend 300-500 of sample size (Sousa & Rojjanasirrat, 2010; Tabachnick & Fidell, 2007). Female students enrolled in Bachelors Program of Health Sciences and Humanities having age range of 18-25 years were included. The mean age of the sample was 20.85 years with a standard deviation of 1.399. All those colleges or programs were excluded who were offering any diploma program other than Bachelors program. Moreover students from preparatory program were also excluded.

### Instruments Used

- i. Self-Esteem Scale (Rosenberg, 1965): Rosenberg Self-esteem Scale (RES) is a widely used self-report scale. Most of the studies with adults that measured global self-esteem utilized this scale. It is 10-item scale that measures personal self-esteem on a four point Likert scale. RES response options are 1 (strongly disagree) to 4 (strongly agree). There are 5 items scored reverse (item 2, 5, 6, 8, 9). Scores ranged from 10 to 40. Higher scores indicate higher self-esteem. Coefficient  $\alpha=0.89$ , reported by the Rosenberg, shows good internal consistency and test-retest reliability is contained by the Rosenberg between  $r=0.85$  (every week) and  $r=0.88$  (every two weeks). Reliability coefficient obtained on the original sample of 5024 high school students was 0.77. They reported negative correlations between self-esteem and anxiety ( $r=-0.64$ ) and depression ( $r=-0.54$ ). Kazarian (2009), conducted study with 59 participant and found internal consistency for Arabic Rosenberg self-esteem scale  $\alpha=0.71$ . Another study (Dhingra, 2013) conducted with 761 students in UK has reported the composite reliability (positive self-esteem,  $\rho_c=.99$ ; negative self-esteem,  $\rho_c=.99$ ). So for current study researchers will calculate the reliability with normal sample of students. Arabic translated version was used to measure self-esteem in female student of Saudi Arabia.

- ii. Brief Psychological Well-being Scale (Su, Tay & Diener, 2013): Psychological well being has a causal link with good health (Diener, 2013). According to OECD (2013) well-being is not merely happiness. It contains how people evaluate their life, satisfaction with financial and health status and meaningfulness in life. They divided it into three classification called as life evaluation, affect and Eudaimonia.

The BPWBS is a short version of the comprehensive psychological well-being scale (54 items). It measures various aspects of good psychological functioning such as relationships and mastery. Brief psychological well-being scale contains 10 items. Response can be rated on 5 point scale ranging from strongly disagree to strongly agree (1-5). Score range between 10-50 (OECD, 2013). Scoring categories are very low (10-30); Low (31-37); Average (38-43); High (41-44); Very High (45-50) respectively. Norms were developed with US respondents (Su, Tay & Diener, 2013).

Brief Psychological Well-being Scale was selected to translate and validate in Arabic language by using standard procedure of back translation. Reliability and validity was also computed after data collection.

- iii. Impact of weight on quality of life questionnaire, short-form (IWQOL-Lite) was developed by Kolotkin, Crosby, Kosloski, and Williams (2001). The scale is short form of impact of weight on quality of life (IWQOL, by Kolotkin, Head, Hamilton, & Tse, 1995). Original version was having 74 items with eight (8) sub scales. IWQOL-Lite is compact and has 31-items. It is self-report, obesity-specific measure of health-related quality of life (HRQOL). Lite version was developed in order to save the time and decrease the response burden of respondents. It consists of a total score and scores on five sub scales namely physical function, self-esteem, sexual life, public distress, and work. All of the five sub scales exhibited strong psychometric properties during the study of standardization (Kolotkin et al., 2001).

According to the study of Ronette, Kolotkin and Crosby (2002), test-retest reliability of IWQOL-Lite ranged from 0.814 to 0.877 for sub scales and was 0.937 for total score. Internal consistency reliabilities of the IWQOL-Lite ranged from 0.90 to 0.94 for the five scales and equaled 0.96 for the total score. Responses can be rated on 5 point scale ranging from 'never true' to 'always true' (1-5). Higher scores indicate poorer quality of life on the IWQOL-Lite because items were stated in negative direction. IWQOL-Lite was also translated into Arabic according to the standard procedure of back translation. One of the sub scale title was modified (Marital life in place of sexual life) with respect to cultural desirability. The said subscale was having four items. As per the advice of experts two of the items were omitted and two were modified. Moreover only those female students who were married were asked to respond for marital life subscale.

### Ethical Considerations

All the ethical considerations were fulfilled before conducting the study. Permission will be taken from the authors of the scales for the utilization and translation of scales. After getting ethical approval from the Scientific Council of University and concerned Heads of the Department, a consent form was given to the subjects to get their willingness to participate in the study. Researchers administered a brief structured interview to get the demographic information of the subjects and in order to screen them according to the research criteria. After building rapport rapport standardized scales were administered on individuals. Participants were assured about confidentiality of their information.

SPSS 20.0 was used for analyzing, organizing, and interpreting the data. Descriptive and inferential statistics was used. Mean, frequency, percentages and standard deviation was calculated. To determine the reliability of the scales Alpha Coefficient was calculated. Contract validity was also computed.

## Results and Discussion

Table 1: Descriptive Statistics of female Bachelors Program students (N=500)

Variable	f	%	Mean	Std. deviation
Age				
18-19	62	12.4	20.85	1.399
20-21	304	60.8		
22-23	115	23		
24-25	16	3.2		
26-29	3	0.6		
Campus				
Humanities	250	50		
Sciences	250	50		
Bachelors Level (Each level stands for 6 months semester)				
First Year (Semester 2 )	137	27.4	4	1.82
Second Year (Semester 3-4)	234	46.8		
Third Year (Semester 5-6)	79	15.8		
Fourth Year (Semester 7-8)	50	10		
Marital Status				
Unmarried	447	89.2		
Married	51	10.2		
Other (Divorced)	2	0.4		

Source: Authors

Table 2: Internal consistency<sup>a</sup> of the scales

Scales	Arabic Version N=500	Other Studies
Rosenberg Self-esteem	0.72	0.71 (Arabic version by Kazarian, 2009)
Brief Psychological Wellbeing Scale	0.918	Not Found
Impact of Weight on Quality of Life	0.722	0.916 (Ronette, Kolotkin and Crosby, 2002)

Source: Authors

Table 3: IWQOL scale Internal consistency<sup>a</sup> comparison

IWQOL subscales	All subjects N=500	All subjects * N=494
Physical function	0.912	0.935
Self-esteem	0.87	0.944
Marital life	0.954	0.921 (Sexual life)
Public distress	0.892	0.916
Work	0.926	0.816
Total	0.722	0.958

\* Ronette, Kolotkin and Crosby (2002)

Source: Authors

Table 4: Relationship between Total IWQOL and sub scales of IWQOL-Lite

Variable	IWQOL
Physical function	.881**
Self-esteem	.79**
Marital life	.335**
Public distress	.796**
Work	.753**

p < 0.05 (two tailed), \*\* Correlation is significant at the 0.01 level

Source: Authors

Table 5: Content validity indices of brief psychological well being and IWQOL-Lite scale

Scales	I-CVI	S-CVI
BPWS	0.92	0.96
IWQOL-Lite	0.88	0.9

Source: Authors

Table 6: Construct validity through factor analysis: Kaiser-Meyer-Olkin Measure of Sampling Adequacy and Bartlett's Test of Sphericity

Scale/subscales	KMO (Kaiser-Meyer-Olkin) index	Approx. Chi-square	Df	Bartlett test
RES	0.772	1430.48	45	Sig=.000
BPWS	0.947	3559.341	45	
IWQOL-Physical function	0.931	3807.97	55	
IWQOL-Self-esteem	0.877	2169.078	21	
IWQOL-Marital life	0.5	891.391	1	
IWQOL-Public distress	0.846	1609.45	10	
IWQOL-Work	0.825	1740.125	6	
IWQOL Total	0.919	11309.67	406	

Source: Authors

Table 1 is showing that five hundred female students participated in the study. Mean age was 20.8 years with the range from 18 to 29 with the standard deviation of 1.39. Only 10% (n=50) were from fourth year and 47% (n=234) were from second year. Most were unmarried (n=447, 89.2%), married were only 10% (n=51).

Table 2 is presenting internal consistency of the three scales with Arabic translation. Cronbach Alpha was calculated as 0.72, 0.91 and 0.72 for RES, BPWS and IWQOL respectively. Table is also providing comparative view of Alpha Coefficient calculation with other studies of the same scale in English.

Table 3 is providing a quick view of comparison of IWQOL internal consistency. It can be seen that internal consistency of the five subscale separately as physical function=0.91, self-esteem=0.87, marital life=0.95, public distress=0.89 and work 0.92 and alpha coefficient of total score of IWQOL (0.72) on Arabic translated scale. All of the Coefficients are indicating good reliability of the scales. Whereas, comparison can be seen with the study of Ronette, Kolotkin and Crosby (2002).

Table 4 is showing inter-relationship of subscales with total score of IWQOL. Results are indicating that relationship of subscale with total scores is statistically significant i.e., physical function ( $r=0.88$ ,  $p < 0.05$ ) self-esteem ( $r=0.79$ ,  $p < 0.05$ ) marital life ( $r=0.33$ ,  $p < 0.05$ ) public distress ( $r=0.79$ ,  $p < 0.05$ ) and work ( $r=0.92$ ,  $p < 0.75$ ).

Table 5 is presenting content validity indices of BPWS (I-CVI=0.92; S-CVI=0.96) and IWQOL (I-CVI=0.88; S-CVI=0.90). Results of factor analysis have been presented in Table 6 along with KMO indices. Results are RES ( $\chi^2=1430.48$ ,  $df=45$ ,  $p < .001$ ), BPWS ( $\chi^2=3559.34$ ,  $df=45$ ,  $p < .001$ ) and IWQOL ( $\chi^2=11309$ ,  $df=406$ ,  $p < .001$ ).

Psychometric properties of the RES, BPWS and IWQOL were investigated by conducting Cronbach's alpha (reliability), inter consistency and by confirmatory factor analysis (construct validity) and content validity. As far as reliability of the Arabic translated version of three scales are concerned, BPWS is having good reliability and for RES and IWQOL reliability is near the acceptance range (Baker, Pistrang & Elliott, 2015; Nunnally & Bernstein, 1994; Kraemer, 1981). RES was already utilized in many studies with Arabic version. Current study also proved the applicability of RES Arabic version with female students. Moreover, the findings of BPWS and IWQOL provide the evidence of applicability of these scales with Arabic translation version.

There were 10 experts who performed the I-CVI and S-CVI test regarding the expert validity of BPWS and IWQOL, and the scale was assessed according to content appropriateness of Arabic translation. The 5-point Likert Scale (1 denotes strongly disagree, while 5 denotes strongly agree) was used for scoring. For both of the scales of BPWS and IWQOL I-CVI is above 0.78 and S-CVI is above 0.90 that is considered as accepted indices (Waltz, Strickland & Lenz, 2005). Thus, both of the Arabic translated scales of BPWS and IWQOL are having good validity.

Confirmatory factor analysis was used to measure construct validity. KMO index ranges from 0.5-0.94. Usually, KMO index more than 0.50 is recommended suitable for the sample. Whereas, it is also recommended that Bartlett test for Sphericity should be significant for factor analysis (Tabachnick & Fidell, 2007). According to Kaiser (1970), the results of KMO index of BPWS and IWQOL falls within 'marvelous' category (above .90s) and for RES falls in middling category (above .70s). Moreover, physical function sub scale of IWQOL falls in marvelous and all the three (3) subscales of IWQOL self-esteem, public distress and work falls in meritorious category. The only subscale of marital life is having the score of 0.50 in KMO index but still it is in acceptable range.

### Limitations and Suggestions

This research based on the data of 500 female students. The sample of male students, adults and community can be included for future study to get generalization of the findings. In the measure of IWQOL subscale of Marital status originally based on 4 item. Two of the items were deduced due to non-suitability of cultural values. If two more items will be developed then reliability of this subscale can be increased.

### CONCLUSION

Arabic translated scales can provide more accurate information. Rosenberg self-esteem Arabic version along with two Arabic translated scales of Brief psychological well being scale and Impact of weight on quality of life questionnaire were applied with female university students. Three of the scales were found having good reliability and validity.

### Acknowledgements

Research project was funded by Princess Nourah Bint Abdulrehman Unverity. We would like to thank Scientific Research Council of PNU, Students Registration office, Scientific Research committee for CHRS and all the colleges and departments for their support with data collection.

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