

## Assessment of psychometric properties of Persian version of Perceived Socio-cultural Pressure Scale (PSPS)

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### Abstract

**Objectives:** To generate the Persian version of the Perceived Socio-cultural Pressure Scale.

**Methods:** The study, done in Kerman, Iran, from November 2010 to February 2011, comprised 1200 volunteers. After translation and back-translation, the questionnaire's internal consistency, criterion and construct validity were evaluated. Individual and global scores of the Perceived Socio-cultural Pressure Scale were assessed between people with and without eating disorders.

**Results:** The mean scores for comparison were  $14.7 \pm 6.64$  and  $21.84 \pm 10.65$ , giving a p-value of 0.0001. Internal and inter-item consistency were acceptable. Item-total correlation ranged from 54% to 80%. Construct and criterion validity of the scale were also acceptable.

**Conclusion:** The Persian version of the Perceived Socio-cultural Pressure Scale is a competent tool for use in the general population and in individuals with eating disorders.

**Keywords:** Perceived Socio-cultural Pressure Scale, Persian version, Reliability, Validity. (JPMA 63: 468; 2013)

### Introduction

Body image is individual's concept of one's own body. Disturbances in this concept could be associated with cognitive and emotional problems, that may be led to serious health problems, like depression, anxiety and eating disorders.<sup>1-3</sup> For many years, body dissatisfaction and body image disturbances were known as western phenomenon especially amongst females,<sup>4,5</sup> but in recent years, these issues are located in males and other cultures as well.<sup>6-8</sup> Ideal body shapes that are advertised by media is thinness for women and masculinity for men.<sup>7,9</sup> These ideal shapes are introduced as factors for attraction and success in job opportunity or marriage.<sup>7</sup> These ideal body shapes are often unattainable by individuals.<sup>9</sup> Therefore, individuals' comparison with these images can lead to depression, low self-esteem, and body image disturbances.<sup>2,10</sup> In search of the ideal body, individuals use various methods that could be harmful, such as restricting diets, various kinds of substances for weight-loss or masculinity (steroids, etc.) and cosmetic surgeries.<sup>11</sup> Another serious health consequence of body image disturbance is eating disorders.<sup>3,12</sup> In Asian countries, the risk factors and health consequences have increased in recent years.<sup>3,12,13</sup> Among the factors that could influence

the issue, socio-cultural factors are prominent.<sup>9,13</sup> Media, society, family and peers exert pressure on individuals.<sup>8,10,13</sup> A number of studies have focussed on family's role in this regard.<sup>9,14</sup> Family, especially in Asian countries, have a great role behind individuals' attitude and behaviours. Pressure and criticism from peers is one of the main sources of perception about one's body image in adolescents.<sup>15</sup> Identification of such factors may lead to better preventive planning. For the assessment of various aspects of body image, a lot of instruments have been developed.<sup>14</sup> Despite the fact that over 100 billion people speak Farsi (Iran, Afghanistan and Tajikistan), there is no standard instruments to identify the psychometric properties in Persian. It was against this backdrop that the current study was planned to evaluate the psychometric properties of some of the important instruments in Persian.

### Subjects and Methods

The PSPS is a 10-items Likert-type scale, which includes four sub-scales that assess four sources of pressure on a person to be thin: friends, media, dating partner, family. Items are rated between 1 (none) to 5 (a lot). The global score is between 10 and 50. The internal consistency of the questionnaire and its stability are acceptable ( $\alpha = 0.88$  and Test-retest reliability:  $r = 0.93$ , respectively). The productive validity of this scale is acceptable for determining the pressure to be thin.<sup>16</sup>

For the determination of psychometric properties of the Persian version of PSPS, the following steps were taken:

The questionnaire was translated into Persian by an

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Iranian translator, then back-translated into English by two persons who were English-speaking and were familiar with body image issues and were unaware of the Persian translation. Any differences between the original English version and the translated form were resolved by an expert panel. Conceptual and linguistic equivalence of the items were approved by the panel.

The cross-sectional study was done in Kerman, Iran, from November 2010 to February 2011. To detect an acceptable level of sensitivity and specificity for PSPS questionnaire, at 5% level with power of 90%, the required sample size was around 1200.<sup>17</sup> The study comprised 1200 volunteers who agreed to participate. To select samples, we adopted stratified sampling, dividing the city into 10 sections. The sample size in each section was estimated based on the proportion of population in that section.

The participants were divided in three age groups (<20, 20-40 and >40 years). We assessed the prevalence and sub-types of eating disorders based on the Eating Disorder Diagnostic Scale. The self-reporting 22-item questionnaire is based on Diagnostic and Statistical Manual for Mental Disorders (DSM-IV) criteria for eating disorder screening. The questionnaire has been shown to be sufficiently sensitive to detect eating disorders.<sup>16</sup> The scale had acceptable internal consistency, test-retest reliability and convergent validity in the Persian version.<sup>18</sup>

Internal consistency was assessed by Chronbach's alpha coefficient and item-scale correlation. The acceptable level for Chronbach's alpha in self-reporting questionnaire was considered 0.7.<sup>19</sup> This level for item-scale correlation was 0.4.<sup>20</sup> Criterion validity was assessed by calculating sensitivity and specificity of the Persian version. DSM-IV criteria for eating disorder were considered the standard. Receiver Operating Characteristic (ROC) curves were used for identifying sensitivity and specificity in both eating disorders and comparison groups.

To check the normality of global score of PSPS questionnaire, Kolmogorov-Smirnov test was used. Global score of PSPS questionnaire was compared between those with and without eating disorders applying two-sample t-test in the case of normality, and Mann-Whitney for non-normal data.

Convergent validity was assessed by Spearman correlation coefficient between the global score of PSPS and other related questionnaires. Studies show that low self-esteem is associated with body dissatisfaction, and young girls who perceive themselves to be overweight have lower levels of self-esteem.<sup>14,21</sup> Also, individuals with higher self-esteem have felt lower social pressure.<sup>7,14</sup> Therefore, we used the Rosenberg esteem scale (Persian form),<sup>22</sup> for the assessment

of convergent validity. The Rosenberg scale is a widely used self-esteem measure in social science research and adolescence self-image.<sup>22</sup> It is a 10-item Likert-type scale with items answered on a four-point scale — from strongly agree (5) to strongly disagree (0). Five of the scale items have positive statements and five have negative ones. The scale measures self-esteem by asking the respondents to identify their current situation. This questionnaire has already been translated into Persian and has acceptable psychometric properties for the Iranian population.<sup>22</sup> Since there is no specific questionnaire regarding body image, we used the Body Esteem Scale<sup>21</sup> for convergent validity assessment. This self-reporting likert-type scale consists of 23 items, which evaluate three sub-scales: Appearance (general feeling about self), Weight (satisfaction) and Attribution (judgment of other's view). After translation and back-translation, psychometric properties of the Persian version were assessed. Internal consistency and item-scale correlation were acceptable ( $\alpha=0.88$ ). All items were suitable for determining contributions of shape and size to the general-appearance esteem. Data were analyzed by SPSS 16.

## Results

Of the total volunteers, 652 (54.3%) were females. The mean age was  $31.06 \pm 10.24$  years with a minimum of 14; 789 (66.5%) were in the 20-40 age group; and 638 (53.1%) had university education (Table-1). There was no significant difference between eating disorders and comparison groups in demographic variables; 133 (11.08%) individuals had at least one eating disorder. The mean global PSPS score between comparison and eating disorder groups had significant difference ( $14.70 \pm 6.64$  vs.

Table-1: Demographic characteristics.

	Frequency (N)	Percentage
<b>Gender</b>		
Male	548	45.6
Female	652	54.3
<b>Age</b>		
<20	189	15.7
20-40	798	66.5
>40	213	17.7
<b>Education</b>		
Illiterate or elementary	167	14
High school	395	32.9
University	638	53.1
<b>BMI</b>		
Thin	151	12.9
Normal	701	60
Overweight	267	22.9
Obese	49	4.2

BMI value was not available for 32 subjects (2.6%).

Table-2: Comparison of mean item scores for PSPS between eating disorders (N=133) and comparison (N=1038) groups.

Item	Eating disorders Mean±SD	Comparison Mean±SD	P-value
1	2.47±1.42	1.46±0.88	<0.0001
2	1.83±1.28	1.03±1.5	0.008
3	1.46±0.90	1.45±0.90	<0.0001
4	1.82±1.24	1.45±0.90	0.002
5	2.39±1.39	1.41±0.90	<0.0001
6	1.7647±1.23	1.37±0.85	0.001
7	2.10±1.22	1.44±0.91	<0.0001
8	2.84±1.41	2.02±1.20	<0.0001
9	1.92±1.19	1.37±0.78	<0.0001
10	2.09±1.22	1.41±0.82	0.000
Global score	21.84±10.65	14.70±6.64	0.000

PSPS: Perceived Socio-cultural Pressure Scale.

Table-3: Item-total correlation and ?-values if item deleted.

No	Item	Item-total correlation	Alpha-value if item deleted
1	I've felt pressure from my friends to lose weight	0.76	0.91
2	I've noticed a strong message from my friends to have a thin body	0.69	0.91
3	I've felt pressure from my family to lose weight	0.80	0.91
4	I've noticed a strong message from my family to have a thin body	0.73	0.91
5	I've felt pressure from people I've dated to lose weight	0.76	0.91
6	I've noticed a strong message from people I've dated to have a thin body	0.71	0.91
7	I've felt pressure from the media (e.g., TV, magazines) to lose weight	0.72	0.96
8	I've noticed a strong message from the media to have a thin body	0.54	0.92
9	Family members tease me about my weight or body shape	0.72	0.91
10	Kids at school tease me about my weight or body shape	0.71	0.91

21.84±10.65, respectively, p< 0.0001) (Table-2).

The mean score of PSPS for male and female were 14.88±6.58 and 16.18±8.63 (p= 0.007). The mean score was also assessed against age groups: 13.32±4.95, 15.64±7.67 and 16.88±8.55 in individuals <20, 20-40 and >40 years. Significant difference between the mean of PSPS score of young participants (aged less than 20 years) with the other two age groups was seen.

The internal consistency coefficient (Chronbach's alpha) for inventory was 0.92. This figure for those with and without eating disorders was 0.94 and 0.91 respectively. Internal consistency in both genders was suitable (a=0.92 for female and male). Internal consistency of PSPS was acceptable in all age groups; a=84.7 for age>20, a=92.8 for 20-40 and a= 93.0 for age ≥40. The alpha value for questions 3, 4, 5, 6, and 9 (pressure from family and dating partner) was 0.89. Corresponding values for questions 1, 2, and 10 (pressure from friends) and for 7 and 8 (media

pressure) were 0.79 and 0.74 respectively (Table-3).

Correlation for all items was suitable and deletion of any item could not result into any significant change in alpha-Chronbach. This was the case for both genders and in all age groups as well. Furthermore, the item total correlation after correction for overlapping was high (range: 0.55 to 0.80).

Criterion validity was assessed by ROC analysis. The area under curve was 0.71 and statistically significant (p<0.000). At cutoff of 15.5, sensitivity and specificity of the questionnaire was 0.70.

For assessment of convergent validity, correlation between PSPS global score and Rosenberg self-esteem scale was -0.25 (p<0.000) and correlation between score if three Body Esteem Scale domains was -0.43 (p<0.001), -0.56(0.001) and -0.28 (p<0.001).

## Discussion

Body image disturbance and its adverse consequences are issues that are taken rather seriously in Asian societies. The majority of Persian speaking peoples live in Asian countries that are influenced by Western culture and changes in the traditional viewpoints regarding beauty, success and empowerment.<sup>13,23</sup> Identification of risk factors that contribute to the development of these health problems could be considered a preventive and therapeutic approach. Therefore, using of standard tools for the evaluation of risk factors may be very helpful, but there is no standard evaluating questionnaire in Persian. In the translated version, there were seen no difficulties as the original questionnaire had been accurately translated into Persian. For generalisation of the findings, we evaluated the questionnaire in both gender and with an expanded range of age. Considering alpha values >0.70 in the Persian version against 0.88 for the original version, the internal consistency of the questionnaire was acceptable.<sup>16,19</sup> In

addition, all items had an acceptable inter-item correlation (>0.40) and deletion of no item could result in the improvement of alpha values. Internal consistency of PSPS in various studies were about  $\alpha=0.71$  to  $\alpha=0.91$ , that are similar to the present study.<sup>13,24,25</sup> Our findings, like those in other studies, emphasise the internal consistency of PSPS across gender lines. In the current study alpha-Cronbach was 0.92 for both gender which was similar to previous studies (for females,  $\alpha=0.876$ , and males,  $\alpha=0.884$ ).<sup>26</sup>

The strength of our study was the internal consistency of the questionnaire in the general population and among those with eating disorders. The global score and individual items in the eating disorder group were significantly higher than the comparison group. Furthermore, the mean score of females was significantly higher than males, and young individuals had higher score than the others.

Our findings showed favourable validity of PSPS where the area under the curve was about 0.71. Construct validity was evaluated by two questionnaires; the Rosenberg self-esteem scale and the Body Scale. The negative correlation between PSPS and these questionnaire [ $r=-0.259$ ,  $p<0.001$  and  $r=-0.436$  ( $p<0.001$ ),  $r=-0.569$  ( $p<0.001$ ) and  $r=-0.280$  ( $p<0.001$ ), for the three different domains of the Body Esteem Scale established the acceptable construct validity of PSPS Persian version. Some studies have shown concordance with these results.<sup>5</sup>

## Conclusion

The Persian version of PSPS is a valid and internally consistent tool for the assessment of socio-cultural pressure perception by individuals to get thinner.

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