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Reliability and validity of a Farsi version of 18- item Mental Health Inventory

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Abstract

Mental health is an important criterion for people's health status. The 18-item mental health inventory is one of the short forms of mental health inventory. The aim of this study was to evaluate the psychometric performance of the Farsi version of MHI- 18. Data analysis showed MHI-18 is associated with GHQ Scores (r= -0.75). Factor analysis loaded two factors. Reliability for MHI-18 with Chronbach's alpha and spilt half method was 0.93. The results support internal consistency and factorial structure of MHI-18 and demonstrate that this scale is a valid and reliable instrument in Iranian population and can be used in clinical research and activity.

Keywords: mental health, Mental Health Inventory, Reliability, Validity, Iranian Students.

1. Introduction

Many students who join university lived through a variety of difficulties such loss of social support, financial stress, loneliness and loss of emotional support [1]. In these circumstances it would be expected University students would exhibit high levels of mental health problem. Mental health problem can lead to mental disorders such as anxiety disorders, depression, suicide, etc. then prevention is essential for this population. The first step for prevention is assessment and screening for mental health. So, screening instruments are needed to detection and prevention of psychological distress. In addition, screening questionnaires can be used for research purposes to identify individuals with mental disorders whenever comprehensive interviews are too time consuming [2]

An instrument that has been specifically designed for assessing the mental health of nonclinical (as well as clinical) samples is the Mental Health Inventory [3]. Mental Health Inventory (MHI) is a screening questionnaire for mental health. This instrument is developed by Veit and Ware in 1983 for assessment of mental health in general population. The first version of this instrument was a 38-item scale and measure psychological distress and well-being [3]. The MHI-18 is an abbreviated version of the 38-item Mental Health Inventory. It contains items assessing anxiety, depression, behavioural control, and positive affect. The MHI-18 has been found to be highly correlated

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with its longer version the MHI-36 and the more established Center for Epidemiological Studies –Depression Scale (CES-D) [4]. Veit and Ware [3] studied data from over 5000 participants in the Rand Health Insurance Experiment using exploratory and confirmatory factor analytic methods. They concluded that responses to the MHI can be conceptualised at several levels of differentiation. At the most general level they described a global mental health factor. In addition, they presented a two-factor (Psychological Distress and Psychological Well-being) and a five-factor formulation of mental health responses (Anxiety, Depression, Loss of Behavioral/Emotional Control, Emotional Ties, and General Positive Affect).

With regard to fewer than items in MHI-18, use of this instrument could be help to save time and cost. Then the purpose of this paper is investigating validity and reliability of Persian version of MHI-18 in population of Iranian students.

2. METHOD

2.1. Participants and Procedure:

Participants were 300 students (120 male, 180 female; mean age: 22.34, SD: 2.93) of University of Tehran. The survey population consisted of all full-time graduate and under graduate students of University of Tehran who were enrolled during that semester. The purpose and procedure of research project explained for participant and asked if they would agree to participate in the study. Participants were asked to complete the mental health inventory-18 and the general health questionnaire (GHQ-28).

2.2. Materials

Mental Health Inventory- The MHI-18 is a shortened version of the original 36-item scale which was developed for use in general populations by Veit and Ware [3] to assess psychological distress and well-being in general populations. It contains items assessing anxiety, depression, behavioral control, and positive affect. Psychological well-being is comprised of positive affect and emotional ties. Psychological distress consists of depression, anxiety, and loss of behavioral/ emotional control. Subjects are asked to indicate how often they have experienced various emotions during the prior four week period. Choices are given along a 6-point scale, ranging from 1 (all of the time) to 6 (none of the time). The subscale and total scores range from 0-100, with higher scores indicating better mental health. Correlation between the MHI-18 and the longer version ranged from 0.96 to 0.99 in various studies. The MHI-18 performed significantly better than the GHQ in detecting mental disorders and anxiety disorders. The MHI-18 was found to perform as well as the GHQ and better than the SSI in detecting depressive symptoms [5]

General Health Questionnaire- general health questionnaire (GHQ-28) is a 28- item instrument. GHQ is including 4 subscales to assess depression, anxiety and insomnia, social dysfunction and physical symptoms. The sum of the scores can be interpreted as an indicator of the severity of psychological distress. Total possible score on the GHQ-28 ranges from 0 to 84. In the GHQ-28 the respondent is asked to compare his recent psychological state with his usual state. In the study the Likert scoring procedure (1,2,3,4) is applied and the total scale score ranges from 28 to 112. The higher the GHQ-28 scores the poorer the psychological well-being of the patient. A sensitivity of 89.5%, a specificity of 82% and a repeatability of 84% for the Persian version of the test have also been reported [6].

2.3. Statistical analysis

Analysis was done with using SPSS, version 15. Concurrent validity, Pearson correlation and factor analysis were performed to assess the validity. Split half and the Cranach's alpha were used to assess reliability and internal consistency of the scale.

3. Results

Table 1 shows the sample mean and standard deviation on the age, total score of the GHQ-28, and total score of the MHI-18 in male and female students.

Table 1. Mean and SD based on the age, the GHQ-28, and the MHI-18 scores

	Male		Female	
	Mean	**Std. Deviation**	**Mean**	**Std. Deviation**
Age	22.57	2.87	22.19	2.97
Total score of the GHQ-28	24.58	14.73	23.71	13.20
Total score of the MHI-18	69.57	18.18	71.02	17.22

3.1. Construct validity

To test the construct validity of the Farsi version of the MHI-18, a principal components factor analysis using eigenvalue-one procedure was performed on the item responses from the entire sample of 300 participants. The analysis revealed 2 factors reflecting psychological distress and well-being, indicating the MHI-18 was a bidimensional scale for the current sample. The scree diagram also suggested two factors should be extracted which were thought to represent two dimensions: psychological well-being and psychological distress.
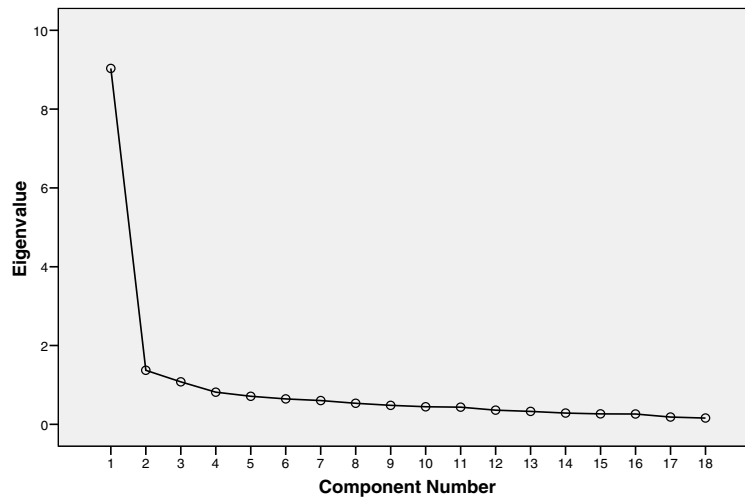

Figure 1. The scree plot for the MHI-18 items

Varimax rotation was selected as it would be expected that the MHI-18 subfactors would be positively correlated to make up a bidimentional structure. Subsequently, a varimax rotation indicated that two factors should be retained, accounting for 63.0% of the variance. The parameter estimates for each of the items are presented in Table 2.

Table 2. Parameter estimates from the confirmatory factor analysis by items of Farsi version of MHI-18

Psychological distress		Psychological well-being	
Item	PE	Item	PE
2	.642	1	.573
4	.602	3	.403
6	.644	5	.502
9	.748	7	.713
11	.803	8	.529
12	.608	10	.578
14	.696	13	.824
16	.40	15	.794
17	.670		
18	.677		

PE=Parameter Estimate

The two-factor structure of the Farsi version of the MHI-18 was found to meet the criteria standards for adequacy of fit to the data by goodness-of-fit index= .90.

3.2. Concurrent validity

The correlation of the MHI-18 with the GHQ-28 was calculated to assess the concurrent validity of the MHI-18. The MHI-18 was correlated negatively with GHQ-28 (-.75). The correlation was negative because the MHI-18 assesses the psychological well-being but GHQ-28 indicates psychological distress.

3.3. Reliability

Cronbach's alpha coefficients were calculated to examine the internal consistency for the MHI-18. The alpha coefficient for the total score was .93 and for the anxiety, depression, behavioural control, and positive affect were 0.84, 0.83, 0.63, and 0.85 respectively. The findings suggest the MHI-18 is internally consistent. Reliability testing of the MHI-18 showed the scale had good split-half reliability. Reliability coefficient of the MHI-18 by split- half method was .93.

4. Discussion

The results of the factor analysis provided support for the two factor model of wellbeing and distress. This is in line with the factorial structure found in the original English version of the MHI [7, 2].this study found this model applies similarly well to Iranian students.

The concurrent and convergent validity of the MHI-18 was demonstrated in the pattern of Correlations between the MHI-18 and GHQ-28. Findings confirmed the concurrent validity. The pattern of correlations is consistent with the results from previous studies using original English version of the MHI-18[1,3]. This findings support the MHI-18 internal consistency and half- split reliability.

The Results confirmed the reliability and validity of the Farsi version of MHI-18. With its student's norms, the MHI-18 is recommended for the assessment of student's mental health particularly in comparison with nonpsychiatric, normative students. Thus, the scale can help in assessment of mental health in students. Iranian findings on mental health inventory can detail our knowledge of cultural effects on the construct. These findings, however, are limited in test- retest reliability, the sample size, the type of sample, and the measures which call for next studies on the psychometric properties of the MHI-18.

References

1. Ovugo, E., Boardman, J., Wasserman, D. (2006). Undergraduate student mental health at Makerere University, Uganda. *Journal of World Psychiatry*, 5(1): 51-52
2. Sanders, S. S., Foley, F. W., LaRocca, N. G., Zemon, V. (2000). The Multiple Sclerosis Intimacy and Sexuality Questionnaire-19 (MSISQ-19). *Journal of Sexuality and Disability*. 18 (1): 3-26

3. Veita, C. T., Ware, J. E. (1983). The structure of psychological distress and well-being in general populations. *Journal of Consulting and Clinical Psychology*. 51(5): 730-742.

4. McHorney, C. A., Ware, J.E., Raczek, A.E. (1993). The MOS 36-item short form health survey (SF-36): II. Psychometric and clinical tests of validity in measuring physical and mental health constructs. *Journal of Medical Care*. 31(3): 247–263.

5. Berwick, D.M., Murphy, J.M., Goldman, P.A., Ware, J.E., Barsky, A.J., & Weinstein, M.C. (1991). Performance of a five-item mental health screening test. *Journal of Medical Care*, 29 (2): 169–176.

6. Lotfi, M. H., Aminian, A. H., Ghomizadea, A., Noorani, F. (2009). A Study on Psychological Health of First Year University Students in Iran. *Iranian Journal of Psychiatry and Behavioral Sciences* (IJPBS). 3(2): 47-51.

7. Heubeck, B. G., & Neill, J. T. (2000). Internal validity and reliability of the 30 item Mental Health Inventory for Australian Adolescents. *Psychological Reports, 87*, 431-440.