Evaluating the Reliability and Validity of Persian Version of the ASEAN Job Stressor Questionnaire (55 items) among Iranian Doctors in Tehran, Iran

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Abstract

Background: ASEAN job stressor questionnaire originally in English were determined the sources of job stress. Therefore, this study was conducted with the aim of measuring the validity and reliability of the Persian version of the ASEAN job stressor questionnaire (55 items) for physicians during 2008-2012. **Methods:** After translating the original version of the questionnaire from English to Persian using back-to-back translation method, its reliability and validity were examined. The study sample consisted of 780 doctors in hospitals in Tehran, Iran. The Spearman-Brown test and the correlation method were used to measure the validity and Cronbach's alpha coefficient as internal consistency test were used to calculate the reliability. **Results:** Cronbach's alpha coefficient was calculated to be 0.87. The reliability coefficient of the questionnaire was reported to be excellent by Spearman-Brown test and the correlation method of each question with the total score confirmed the reliability of the instrument. The results of factor analysis showed that there were two factors with a specific value greater than one that was able to explain more than 52.77% of the total score variance. **Conclusion:** The ASEAN job stressor questionnaire (55 items) is acceptable for determining the sources of job stress of physicians in the Iranian population.

Keywords: ASEAN job stressor questionnaire; Validity; Reliability; Spearman-Brown test

Introduction

Job stress is currently recognized as one of the most important problems in the life of human societies with positive or negative results. Stress is caused by a lack of coordination between one's job needs, abilities, capabilities, and desires. Many behavioral, physical, and psychological consequences are caused by job stress. [1] Stress is an integral part of life, which can lead to illness or a positive experience due to the stress and quality of a person's adaptation to it. Unlike other harmful factors in the work environment, psychological factors in the work environment are not specific to a particular job and are present in all jobs in different forms and with different degrees. [2] Job stress and burnout are among the most common problems for workers. There are many concerns about high levels of physical and psychological problems related to job stress, including burnout among workers in various occupations. [3] Stress and improper shift pressures are seen in all jobs that have shift work. However, the special sensitivity in the work of firefighters causes that a lot of research is done in different parts of the world in relation to proper fencing for this group. [4] Since their job is directly related to saving people's lives in very difficult conditions, and full awareness and quick and appropriate decision-making is one of the requirements of their work and can save lives, creating conditions to put fire signs in the best physical and mental conditions. [5] Many of these people who work at night

suffer from drowsiness due to improper shift work. This fatigue causes them to be distracted and increases the likelihood of mistakes, resulting in accidents at work. [6] Various studies have shown that the workforce exposed to job stress in developed countries is about 33%, which is much higher in developing countries. [7] Stress is an integral part of life, which can lead to illness or loss of function due to stress and the quality of one's adaptation. [8] Although some stresses are normal and necessary, if the stress is severe, persistent, or recurrent, the person is unable to cope effectively with it, or if there are few supportive resources, stress is considered a negative phenomenon that can lead to physical illness and mental disorders. [9] Job stress has psychological and physical health consequences. One of the psychological symptoms of job stress is job dissatisfaction. [10] Stress is a serious problem for today's organizations and can be costly for the organization. [11] Job developments such as organizational change, payroll change, career advancement, reduction or increase in manpower, and social change are all

issues that put some kind of pressure on a person and cause him or her anxiety, worry, worry, and anxiety. [12] Unlike other harmful factors in the workplace, psychological factors in the workplace are not specific to a particular job and are present in all jobs in different forms and with different degrees. [13] One of the psychological consequences of job stress is the reduction of job satisfaction, which can even lead to leaving the job and leaving the job and reduce the person's commitment to the organization. [14] The impact of job stress on work and employees has been considered in recent decades because the most important source of any organization is its human resources and organizations should provide psychological, psychological and material comfort to their employees so that the person can work with the highest efficiency. And the organization will achieve maximum efficiency. [15] Numerous studies on the impact of job stress on mental health and job satisfaction have identified job stress as one of the most important causes of mental loss and job satisfaction. In most of these studies, stress is considered as a response that is directly influenced by stressful experienced resources. [16] Research on job stress and job satisfaction confirms the relationship between the two and affects job stress. [17] They consider job satisfaction and consider the relationship and direction of these two to be the opposite. [18]

However, it is important to emphasize that stress does not always come directly from stressful sources, but how a person perceives stress plays a key role in experiencing it, as studies have shown that similar stressful events have different effects. Different people create. Therefore, the belief that there are variables that moderate the relationship between stress and illness and job satisfaction has been strengthened. [19]

In recent years, several main language questionnaires have been designed to assess the level of job stress. Due to the many problems in translating these questionnaires into Persian, there is also an increasing need for organizations to fully understand employees, attitudes, and how they are perceived in the workplace and depending on the success of policies and executive policies of organizations. We decided to study human capital in a cross-sectional study using the ASEAN job stressors (55-items) questionnaire, which in this study we measure and evaluate the validity and reliability of 55-items questionnaire for the job stress of Tehran physicians for the first time in Iran.

Research Methodology

Sample

Sampling method in this study was cluster sampling. The study sample consisted of 780 doctors in hospitals in Tehran, Iran. Selection of the hospitals was according to the zone they located. In the next stage respondents in each hospital were selected via universal sampling that means all available doctors working in the hospital were given the questionnaire. By the sampling method finally 8 hospitals were selected as follows (Emam Khomeini and Valiasr, Firoozgar and Arash, Hashemi Nezhad and Motahari and Shafa and Baharloo hospital).

Tools

Research instrument was a questionnaire. We used suitable and standard questionnaire with translation to Persian (Farsi). The questionnaire included socio-demographic information and stressors. The questionnaire belong to doctors society and has been used for Asian countries, including Southeast Asia, it also has been used in studies such as ASEAN Doctors Stressor (in Iran, Malaysia, Singapore, Butley, etc.).

The questionnaire consists of two sections: first section is personal information includes age, sex, marital status, number of children and income. Second section is job stressors (using ASEAN job stressor questionnaire). It is 55 items scale questionnaire. Each item is scored on a four point scale. Respondents were asked to rate each statement according to how much a source of stress is in his/her work: not at all=0, a little=1, quite a bit=2, a lot=3. The items can be divided into five groups: Workload, patient related problems, professional self-doubt, home–work conflicts and organizational structure and policy.

The relative importance of different sources of stress / satisfaction can be assessed by calculating the percentage of doctors reporting each item as contributing "quite a bit" or "a lot" to their job stress (vs. "a little" or "not at all"). These item scores are split into 0/1 (a little /not at all) vs. 2/3 (quite a bit / a lot) and treated as binary scores. The Persian version of the questionnaire was used. Translation was performed first English to Persian and then to English again. Reliability Coefficients alpha (Cronbach's alpha coefficient) for sources of stress (job stressors and non-job stressors) in this study was 0.91.

Method

As stated in the methodology section, sources of stress were determined by using ASEAN job stressors questionnaire. It is a 55 item questionnaire. Each item is scored on a four-point scale. The Persian version of questionnaire was used. Translation was performed first from English to Persian and then back to English. As the first step in the implementation of the present study, the original version of ASEAN job stressors (55-items) questionnaire was translated from English to Persian using the standard Backward-Forward method. In this method, first the original version of the questionnaire was translated from English to Persian simultaneously by two independent translators, then this version was re-translated into English by two independent translators from the first stage translators and finally one person coordinated it (Coordinator). Putting together the Persian and English translations obtained, the Persian ASEAN job stressors (55-items) questionnaire was prepared. Then, in order to make the questionnaire more practical, a number of questions were added to examine the demographic situation and also a question in order to evaluate the quality of life of the person from his own point of view to the total number of questions in the original version. In the next step, during a pre-test conducted among a group of young people, the shortcomings in the questionnaire were eliminated, and thus the final ASEAN job stressors (55-items) questionnaire was prepared in Persian. In the next step, considering that the aim of the study was to determine the reliability and validity, sensitivity and specificity of the questionnaire, using the relevant calculation methods and

performing sufficient and accurate calculations, the sample size required for the present study was estimated to be at least 780 people. In order to collect data, the questionnaire was distributed among the people in two ways:

- Through two consecutive issues of a publication with a national publication

- Through questionnaires at a semi-public university and a non-governmental higher education center

It is important to note that because the number of questionnaires collected after completion was 780, all of them were studied and analyzed as samples. In the next step, the collected data were entered into the computer and calculated through SPSS program. The scoring of this questionnaire was done by the simple Likert Simple scoring method. In this method, the scores of 0, 1, 2, and 3 are considered for the four options, respectively. In view of the above method, in the present study, the questionnaire questions were first graded using the simple Likert method. The Internal Consistency method was used to determine the reliability of the questionnaire. According to this method, the tool in question will have a good reliability only when the Cronbach's Alpha Coefficient is greater than or equal to 0.7. Analytical analysis of the Spearman-Brown test and the correlation method were used to determine the validity of the questionnaire. According to this method, first the sample individuals were divided into seven groups based on the answer to the question about the general quality of life, divided into seven groups, including very bad, bad, not so bad, neither good nor bad, then good and excellent. The status of each was compared with the scores obtained from the questionnaire. In this case, the mentioned questionnaire will have a suitable narration only when a significant relationship can be obtained between the score obtained from the questionnaire and the general quality of life of the sample people.

Results

Demographic characteristics

Gender: In this study, 780 physicians were considered. A total of 336 (43.1%) of the study samples were men and 444 (56.9%) were women.

Age: As shown in Table 1, one hundred and twenty doctors (15.4%) were less or equal to 29 years old, three hundred and sixty (46.2%) were 30 to 39 years old, two hundred and sixteen (27.7%) were 40 to 49 years old, and only eighty four (10.8%) of the respondents were 50 years old or more.

Marital status: A total of 192 (24.6%) of the 780 respondents were single, and 588 (75.4%) were married [Table 1].

Having children: According to the Table 1, three hundred and ninety six (50.8%) doctors reported they had children and three hundred and eighty four (49.2%) reported they had no child.

Income: One hundred and thirty two (16.9%) of 780 respondents get less than five hundred dollars, and 336 (43.1%) stated that they get salary between 500 to 1000 US Dollars, 84 (10.8%) doctors get 1000 to 2000 USD, and 228 (29.2%) get more than 2000 USD [Table 1].

In the reliability study of the questionnaire using the internal stability method of the instrument, Cronbach's alpha coefficient for the present questionnaire was calculated to be 0.78. In order to determine its validity, after placing individuals in seven groups as described in Table 2, the status of individuals in each group was compared with the score obtained from the questionnaire and finally it was determined that there is a significant statistical relationship between the two.

But to calculate the best cutting point, sensitivity and feature after drawing the ROC curve for both scoring methods. The results obtained as shown in Table 3 for the method were 14.5, 63, 89 percent, respectively, and for the second method, 3.5, 87, and 60 percent, respectively.

Table 1: Demographic characteristics of the respondents.

	N	%
Gender		
Male	336	43.1
Female	444	56.9
Age (Years)		
<30	120	15.4
30-39	360	46.1
40-49	216	27.7
>=50	84	10.8
Marital status		
Single	192	24.6
Married	588	75.4
Have child		
Yes	396	50.8
No	384	49.2
Income (USD)		
<500	132	16.9
500-999	336	43.1
1000-2000	84	10.8
>2000	228	29.2

Table 2: Comparison of general condition with ASEAN score (Lower score indicates better mental health status).

The general state of quality of life	Frequency		ASEAN score	
	Absolute	Relative (%)	Mean	Standard deviation
Very bad	13	2	11.22	3.44
Bad	13	2	10.68	3.87
Not so bad	46	6	8.32	2.67
Neither good nor bad	210	28	6.57	3.69
Relatively good	233	31	5.34	2.37
Good	131	17	3.12	2.67
Excellent	97	13	2.17	2.47

Table 3: Determining the diagnostic power, sensitivity and specificity of ASEAN-55 using two scoring methods.

	12 Score method	36 Score method
The area under the ROC curve *	0.83%	838%
Best cut point **	3.5%	14.5%
Sensitivity	88%	89%
Feature	60%	63%

Discussion

This study is similar to many previous studies in terms of the method used to determine reliability. Examples include the study. [15,16,18,19] But at the same time, the accuracy of calculating Cronbach's alpha coefficient in the current study is higher than previous studies and the value calculated in this study is 0.88 witnesses to this claim. Various methods have been used to determine the validity of studies conducted so far on the subject of the ASEAN job stressor questionnaire (55 items). For example, compare the ASEAN job stressor questionnaire (55 items) with the Minnesota Multiphasic Personality Inventory (MMPI) or SRQ (Self Reporting Questionnaire) and achieve this goal. He used a comparison of the scores obtained from the questionnaire with the scores obtained from the Compound International Diagnostic Interview (CIDI). [14]

Khamisa et al. also used clinical interviews in the DSM-SH-R system to determine the validity of the questionnaire. [13] However, the present study has helped to determine the validity of the known groups (KGC) method and also the analysis of variance (ANOVA) test, which according to the present researchers, despite the use of this method in several studies in different countries, including the study Li et al. [10] has not been used in any of the studies conducted in Iran so far, which has achieved a kind of innovation in this regard. Another purpose of this study is to determine the best cutting point, sensitivity and specificity of the questionnaire. Percentage) Compared with Hoboubi's study, [15] which makes sensitivity and specificity equal to 8% and 8%, respectively. The study of Elshaer, which calculated 8.9%, 68%, 59%, and the Hirokawa [16] study which calculated 23, 82, 86.5% is significant.

Conclusion

The findings of the present study, in addition to comparing these cases, provide two different scoring methods. It has also obtained higher figures, which is particularly evident in the sensitivity of the ASEAN job stressor questionnaire (55 items). And since the ultimate goal of the present study is to introduce this questionnaire as a screening tool and the most important component for any screening tool is sensitivity, it is clear that researchers in this study have been successful in achieving this fundamental goal.

Competing Interests

The authors declare that they have no competing interests. All the listed authors contributed significantly to the conception and design of study, acquisition, analysis, and interpretation of data and drafting of the manuscript, to justify authorship.

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