The Job Performance of Emergency Nurses and its Relationship with Spiritual Intelligence and Occupational Hardiness

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Abstract

**Background:** The quality of hospital systems depends greatly on the performance of nurses, and the performance of nurses has a significant effect on individual patients’ satisfaction. Therefore, it is important to examine the factors related to nurses' performance. This study was designed to investigate the relationship between spiritual intelligence and occupational hardiness and the job performance in pre-hospital and hospital emergency nurses in Yazd.

**Methods:** This cross-sectional study was carried out on 132 nurses working in pre-hospital and hospital emergency in Yazd University of Medical Sciences, who were selected using stratified sampling with proportional allocation in 2016. Data were collected through three questionnaires including spiritual intelligence, occupational hardiness and job performance. Data was analyzed using descriptive statistics and multiple regressions in SPSS version 19.0 (IBM, USA).

**Results:** The mean score of job performance, spiritual intelligence and occupational hardiness were 52.46±11.16, 121.32±12.59, and 53.29±8.72, respectively. According to the results, spiritual intelligence and occupational hardiness can predict the job performance. (R²=%18, P<0.01). Both spiritual intelligence (β=0.32, P=0.001) and occupational hardiness (β=0.24, P=0.004) showed significant positive contribution in the prediction of the job performance.

**Conclusions:** According to the results, developing spiritual intelligence and occupational hardiness can help to improve the job performance of the pre-hospital and hospital emergency nurses.

**Keywords:** Intelligence, Spirituality, Job performance, Emergency, Nurses, Hardiness
Introduction

Job performance is considered as one of the essential and important components of organizations. Employing their employees based on the required characteristics, the organizations begin trainings and try to raise motivation in the team in order to increase their performances. The success and development of organizations depend on the employee productivity (1). One of the priorities and goals of development is ensuring the desirable performance of health care workers (2). Nurses are regarded as one of the important groups in health care organizations who play a significant role in patients' satisfaction (3). Failure at the work of this group who meet the needs of their patients can be affected by irreversible results the services provided (4) especially nurses who are working in the emergency department. Different and extensive psychological and environmental factors in each organization have a significant impact on the job performance of its employees. Defects in any of the effective factors have an adverse effect on the job performance of individuals (5).

The nature of some occupations is such that people may be in trouble and their mental health is threatened. Therefore, paying attention to psychological and individual abilities that help a person resistant in a difficult and chore situation is more considered by positive psychologists. One of these capacities is hardiness (6). Hardiness refers to a personality trait that reflects the way people deal with stressful situations. This trait enables individuals to turn stressful situations into opportunities for physical and mental development, and leadership and performance improvement (7). The concept of hardiness in organizations and workplaces has also been studied. Occupational hardiness strengthens people's ability to cope with job stresses and acts as a protective shield against the factors causing job stress (8). Given the stressful experiences are well seen in the nature of the nursing profession (9), especially for the nurses who are working in the emergency department (10), job hardiness can enable them to deal with problems, without reducing their performance. (11). Therefore, it seems that job hardiness can have a significant impact on nurses' job performance. A study conducted in India in 2016 among bank managers showed that psychological hardiness is a strong predictor of job performance (12). Another study in US Army Special Forces candidates indicated that psychological hardiness is an important individual characteristic associated with successful performance in highly demanding occupations (13). One more study conducted in Norway has shown that hardiness can predict shift work tolerance over among nurses (14).

On the other hand, intelligence has been considered as one of the effective factors that have a positive impact on the person's success in life and increase his performance (15). Intelligence was introduced as a cognitive ability, but over the last two decades the concept of intelligence has spread to other areas, including spirituality (16). Spiritual intelligence refers to a type of intelligence that enables individuals to lead their activities and lives in a deeper, more rigorous and meaningful direction (15). Individuals with high spiritual intelligence can accept their growth and excellence and their organization can use this to reach the methods with organizational goals and features (17). It seems that healthcare organizations need professional staff and nurses with deeper spiritual intelligence in order to survive and improve their performance. The existence of spiritual intelligence in hospital nurses and pre-hospital emergency technicians leads to an integrated vision of the individual, which helps to improve job performance (15). Of course, the conflicting results are obtained in the study of spiritual
intelligence in some cases. According to the results of a research conducted in Germany on the relationship between spiritual intelligence and job performance in 2016 and on 789 bank staff (with different religions), there was not a significant relationship between spiritual intelligence and job performance (16). But Rani et al. (2013) during a study in Malaysia concluded that there is a relationship between spiritual intelligence and job performance of the nurses (17). Another study in Malaysia shows that spiritual intelligence plays a significant role in effective caring behavior of nurses (18). Likewise, Sunaryo (2017) in another study performed in Indonesia stated that spiritual intelligence affects the caring behavior among nurses (19). Khandan et al (2017) in a similar research on nurses in the hospitals of Qom University of Medical Sciences concluded that there is a positive and significant relationship between spiritual intelligence and job performance (22).

In general, given that the nurses in the hospital and pre-hospital emergency departments are among the first people who provide health care services to patients, therefore, their job performance has a significant effect on improving the patients` health. In this connection, evaluation of the effective factors on job performance of the nurses in the hospital and pre-hospital emergency departments are of highly importance. It should be noted that previous studies have less examined the factors that predicted the job performance of these groups of nurses. However, based on the arguments discussed above, spiritual intelligence and occupational hardiness can be regarded as effective factors in empowerment of individuals in the workplace. As mentioned earlier, various studies have been conducted on the role of these two factors in improving nurses` performance, however it was observed that since the two variables, namely spiritual intelligence and occupational hardiness, measure two different psychological domains, the role of these factors has not been considered simultaneously. To fill this gap, the present study was carried out to simultaneously investigate the relationship of two variables of spiritual intelligence and occupational hardiness on the job performance of nurses in pre-hospital and hospital emergency departments and to determine which variable has a greater role in predicting job performance.

**Methods**

This descriptive cross-sectional study was carried out in 2016. The ethical approval was obtained from the research and ethics committee (IR.SSU.REC.1395.203). The statistical population of this study included two groups: 1) pre-hospital emergency technicians consisting of 60 (from 10 stations) and 2) nurses of emergency department including 144 (from 9 hospitals). Inclusion criteria were; the nurses with at least associate degree in nursing and over one year of work experience, not receiving psychological treatments and psychiatric drugs, and the consent of nurses to participate in research and the possibility of exclusion at each stage of the research. Exclusion criteria were; less than one year of work experience, receiving medical or psychological treatments, and declining to participation in study. The sample size was estimated according to the study of Safar Abadi et al. (23), which was conducted in pre-hospital emergency staff in Arak. Considering the number of population and using formula, the number of sample size estimated 132. The stratified sampling with proportional to size was used in this study. At first, the number of hospital and pre-hospital emergency nurses were determined separately for each of them. In result, the samples were randomly selected according to the list of nurses. 2 of 132 subjects did not completely fill out the questionnaire and were excluded from the study.
Spiritual Intelligence Questionnaire: This questionnaire is designed in Iran by Abdollahzadeh et al. (2008) with 29 phrases. This questionnaire has been developed and validated in Iran with regard to the cultural characteristics of this society. This questionnaire has two subscales including understanding and communicating with existence sources and spiritual life. The response scale was a 5-point continuum, ranging from strongly disagree=1 to strongly agree=5). The scores varied ranging from 29 to 145. In addition to content validity, which has been confirmed by expert opinion, the exploratory factor analysis has also been used and the correlation of all questions was higher than 0.3. The reliability of the questionnaire was obtained equal to 0.89 (24). In the study of Ashouri, the reliability of the questionnaire in the nurses' population was calculated equal to 0.86 (25).

Occupational Hardiness Questionnaire: This scale was originally derived from Kobasa's theory of hardiness and developed by Moreno Jimens et al (2014). In this questionnaire, the Occupational Hardiness is measured using 17 questions. This tool has three dimensions (challenge, commitment, and control) and applies the four-point Likert scoring method (from ‘I strongly agree’ (1) to ‘I strongly disagree’ (4)) (26). Scores range is located on a scale ranging from 1 to 68. Validity of this questionnaire has been evaluated and approved by Akbari Balotanbegan et al (2015) in Iran and on nurse population. The internal consistency method and Cronbach's alpha coefficient were used by these researchers to determine the validity of the questionnaire, which was obtained 0.76 for the control, 0.80 for the challenge, 0.74 for the commitment, and 0.86 for the whole scale (27).

Paterson's Job Performance Questionnaire: The questionnaire is considered as a tool for measuring job performance and consists of 15 questions. Questions have a Likert spectrum ranging from 0 (rarely) to 4 (always). The range of scores is from 0 to 60. Sayahi and Shokrkon have reported that the reliability of this questionnaire using Cronach's alpha and Bisecton method is equal to 0.85 and 0.85, respectively. Also, the validity of this questionnaire by correlating with performance self-assessment questionnaire has been acceptable at the level of P <0.05 (28). Aslanpour Jokandan et al. (2011), during a study have calculated the reliability of the questionnaire and job performance through Cronbach's alpha and bisection method, which were equal to 0.86 and 0.79 respectively, and the validity of this scale by correlating with a researcher-made general questionnaire has been equal to r = 0.61 at the level of 0.001> P (29). Faizy et al. have reported that the reliability of the questionnaire in the nursing population is equal to 0.9 (30).

Data were analyzed using SPSS version 19.0 (IBM, USA). Data are presented as mean values ± SD and frequency. Normal data distribution was examined using Kolmogorov-Smirnov test. Multiple linear regression analysis was used to predict of job performance of nurses. Significant level P <0.05 was considered.

Results

The results showed that most the nurses (63.8%) were male and married single (80%). Frequency of education level, age and work experience of subjects are shown in table 1.
Table 1. Frequency of characteristics of hospital and pre-hospital emergency nurses

<table>
<thead>
<tr>
<th>Variable</th>
<th>Group</th>
<th>N</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Workplace</td>
<td>Hospital nurses</td>
<td>90</td>
<td>69.3</td>
</tr>
<tr>
<td></td>
<td>Pre-hospital nurses</td>
<td>40</td>
<td>30.7</td>
</tr>
<tr>
<td>Sex</td>
<td>Female</td>
<td>47</td>
<td>36.2</td>
</tr>
<tr>
<td></td>
<td>Man</td>
<td>83</td>
<td>63.8</td>
</tr>
<tr>
<td>Education level</td>
<td>Associate degree</td>
<td>21</td>
<td>16.1</td>
</tr>
<tr>
<td></td>
<td>Bachelor</td>
<td>105</td>
<td>80.8</td>
</tr>
<tr>
<td></td>
<td>Master of science</td>
<td>4</td>
<td>3.1</td>
</tr>
<tr>
<td>Marital status</td>
<td>Single</td>
<td>26</td>
<td>20</td>
</tr>
<tr>
<td></td>
<td>Married</td>
<td>104</td>
<td>80</td>
</tr>
<tr>
<td>Age</td>
<td>20-29</td>
<td>48</td>
<td>36.9</td>
</tr>
<tr>
<td></td>
<td>30-39</td>
<td>63</td>
<td>48.5</td>
</tr>
<tr>
<td></td>
<td>40-49</td>
<td>19</td>
<td>14.6</td>
</tr>
<tr>
<td>Work experience</td>
<td>≤5 years</td>
<td>43</td>
<td>33.1</td>
</tr>
<tr>
<td></td>
<td>6-10 years</td>
<td>45</td>
<td>34.6</td>
</tr>
<tr>
<td></td>
<td>11-15 years</td>
<td>26</td>
<td>20</td>
</tr>
<tr>
<td></td>
<td>≥16 years old</td>
<td>16</td>
<td>12.3</td>
</tr>
</tbody>
</table>

The mean and standard deviation of research variables and its subscales are listed in table 2.

Table 2. The mean scores of nurses’ job performance, spiritual intelligence and occupational hardiness

<table>
<thead>
<tr>
<th>Variable</th>
<th>Mean ±SD</th>
<th>Variable</th>
<th>Mean ±SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Job performance</td>
<td>52.46 ±11.16</td>
<td>Occupational hardiness</td>
<td>53.29 ±8.72</td>
</tr>
<tr>
<td>Spiritual intelligence</td>
<td>121.32 ±12.59</td>
<td>Control</td>
<td>16.07 ±2.85</td>
</tr>
<tr>
<td>Understanding and communicating</td>
<td>53.05 ±5.43</td>
<td>Commitment</td>
<td>18.26 ±3.59</td>
</tr>
<tr>
<td>existence source</td>
<td></td>
<td>Spiritual life</td>
<td>68.27 ±8.27</td>
</tr>
<tr>
<td>Spiritual life</td>
<td></td>
<td>Challenge</td>
<td>18.96 ±3.28</td>
</tr>
</tbody>
</table>

As shown in table 2, the mean of the variables of job performance, spiritual intelligence and occupational hardiness were 52.46, 121.32, and 53.29 respectively. Multiple regression analysis was used in order to investigate the relationship between spiritual intelligence and occupational hardiness with job performance. Prior to using the regression analysis, its assumptions were examined. The results of the Kolmogorov-Smirnov test of all the variables were not significant, which confirm normal distribution assumption. Also, variance inflation factor (VIF) for predictor variables was approximately equal to 1, which means there is no multi collinearity. In addition, the value of Durbin-Watson was equal to 2.07 that rejected
autocorrelation in the residuals. Therefore, the assumption of regression analysis is met and using regression analysis is indisputable.

As shown in table 3, the variables of spiritual intelligence and occupational hardiness explain 18.3% of variance in job performance variable and the fitted model is suitable.

**Table 3. The regression model of nurses’ spiritual intelligence and occupational hardiness on job performance**

<table>
<thead>
<tr>
<th>Model</th>
<th>R</th>
<th>Squared R</th>
<th>F</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>0.428</td>
<td>0.183</td>
<td>14.27</td>
<td>0.001</td>
</tr>
</tbody>
</table>

According to table 4, spiritual intelligence with beta ($\beta = 0.32$) has a more significant effect on job performance than occupational hardiness ($\beta = 0.24$). According to the p-value, these effects were significant.

**Table 4. Regression coefficients of nurses’ spiritual intelligence and occupational hardiness on job performance**

<table>
<thead>
<tr>
<th>Predictors</th>
<th>b</th>
<th>$\beta$</th>
<th>T</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant number</td>
<td>1.95</td>
<td>-</td>
<td>0.20</td>
<td>0.83</td>
</tr>
<tr>
<td>Spiritual Intelligence</td>
<td>0.28</td>
<td>0.32</td>
<td>3.90</td>
<td>0.001</td>
</tr>
<tr>
<td>Occupational hardiness</td>
<td>0.308</td>
<td>0.24</td>
<td>0.96</td>
<td>0.004</td>
</tr>
</tbody>
</table>

Standard coefficients=$b$, standardized coefficients=$\beta$

**Discussion**

The results of the present contribution show that spiritual intelligence and occupational hardiness can very well predict the job performance. Accordingly, one of the results of this study portrayed that there is a significant relationship between spiritual intelligence and job performance. In this regard, SafarAbadi et al. carried out a research on medical technicians in Arak. Their results showed that there is a significant relationship between the score of spiritual intelligence and the quality of their performance (23). In a prior study on nurses, Khandan et al. concluded that spiritual intelligence has a significant effect on job performance (22). Jasour and Avarsin also achieved a parallel result in a study on the staff of Tabriz University (31). Similar result was obtained from studies in Malaysia (18), Indonesia (19) and Pakistan (32). However, Kaninchen and Seite during a study on the bank employees in Germany concluded that there was no relationship between spiritual intelligence and job performance (18).

In fact, it seems that one of the characteristics of the nurses with high spiritual intelligence is that they strongly believe in the divine presence of God in the world, and this belief that God always monitors their actions can lead them to refrain from wasting time and doing futile tasks, as well as treating their patients in a hospital environment. Furthermore, nurses with high spiritual intelligence are ready to accept all the occupational hardiness to achieve better results including reducing the patients’ pains. Correspondingly, in many cases in which patients face with emergency situation or while the human issues are arisen, nurses will sacrifice their life. These people feel much responsible for the duty they have already accepted. Since they consider
themselves accountable for the further consequences, they endeavor to perform their job tasks of the best quality. One of the reasons that the above-mentioned study in Germany had different results can be due to the difference in religions. The main religion in Iran, Malaysia, Indonesia and Pakistan is Islam. It is maintained that spiritual intelligence and religiosity are distinct but related psychological constructs (33). In Islam, behavioral characteristics like patience, gratefulness, favorable perceptions, honesty, good relationship, dependence on god, sincerity and piety are enormously emphasized (34). These factors have been observed in the spiritual intelligence concept.

The results of the present study also demonstrate that there is a significant relationship between occupational hardiness and job performance in that the variable of occupational hardiness predicts job performance. Other studies in this field also confirmed the results of the present research. Azimpour and Jalilean during a study on elementary school teachers concluded that occupational hardiness has a direct effect on job performance (8). Also, Shanbadi and Arshadi examined the female employees of Shahid Chamran University of Ahvaz and concluded that job performance can be predicted by the hardiness variable (35). Judkins et al. have achieved the same result in their study on nurse population (36). Cache in 2009, in accordance with the present contribution, concluded that the occupational hardiness of the organization staff in New Zealand has a significant relationship with job performance (37).

The nurses with high occupational hardiness believe that what they carry out is highly valued for the community; therefore they try to adhere strictly to their job duties on a regular basis in order to thoroughly perform them. This feature has a significant impact on the job performance of an emergency nurse. It should be noted that for tough and mighty people, everything is only achieved through personal effort, that’s why they work honestly even without the supervision of their superiors. These individuals endeavor to earn new experiences in their daily work as much as possible. Therefore, considering the domain of nursing knowledge, which is wide-ranging and highly difficult, this feature can lead to improve job performance.

In general, it can be concluded that the research hypothesis, namely “there is a direct relationship between spiritual intelligence, occupational hardiness and job performance of nurses in the hospital and pre-hospital emergency department of Yazd”, is confirmed. We aware that our research may have some limitations including the following: the self-assessment questionnaires were used to measure job performance that could be accompanied by bias in responses. Also, it should be pointed pot that the two variables of spiritual intelligence and occupational hardiness explain in total 18% of job performance variable variances. It seems that for future research, environmental variables should also be investigated in addition to interpersonal variables.

Conclusion

In general, it can be concluded that two interpersonal factors namely the spiritual intelligence and the occupational hardiness can lead to an increase in the job performance of nurses in emergency depart-mints. According to the results of this study, it is suggested that holding meetings should be considered for increasing both the spiritual intelligence and the occupational hardiness of nurses. It seems that this study can be carried out in other departments of the hospital and even for other occupations and it is suggested that the results be compared with the present study.
Acknowledgements

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