EDUCATIONAL NEEDS ASSESSMENT FOR SAFETY PRINCIPLES IN PREVENTING OCCUPATIONAL RISKS IN AYATOLLAH TALEGHNANI HOSPITAL IN KERMANSHAH IN 2015

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Received on 05-08-2016
Accepted on 28-08-2016

Abstract

Background: The activities of a nurse is not limited to knowledge and skills in the management of patients, but the necessity of providing the required safety in performing task in line with his/her satisfaction and ultimately patient satisfaction is considered. Educational needs assessment in the field of safety principles in preventing occupational risks had provided a greater opportunity to achieve this goal, and it will be followed by the effectiveness in the teaching-learning process.

Methods: This is a cross-sectional research and the study population consisted of all the nurses in the hospital who were classified based on quota sampling, 70 of them were selected as statistical sample. Data collection tools consisted of two parts: demographic data and factors related to prevention of occupational risks. That these five areas, including biological, chemical, physical, ergonomic, psychosocial and social areas that consisted of 23 items by scoring with a score of 1 to 5 for each item for educational needs. Data analysis was conducted using SPSS18 software and independent t-test, Pearson and Spearman methods and the results were presented based on the statistical indicators.

Results: The nurses participating in this study were 7/45% male and 3/54% female and their mean age was 17/8 ± 21/38 respectively. The highest educational needs of nurses in the field of ergonomics factors was (16/1 ± 15/3), and then, chemical, physical and mental and social and the lowest levels was in the field of by biological factors (94/0 ± 63/2) respectively.
Conclusion: Considering the training and nurses service has been always emphasized and this issues and improving the safety in preventing occupational risks of the profession indicates that Nurses need to learn the five areas examined in this study, by giving priority ergonomic factors that may have not been enough considered, and planning in this field can provide their satisfaction more than ever.

Keywords: Educational needs, Occupational risks, Nurse, Hospital.

Introduction

One of the most important strategies of organization is create value for customers and people that intellectual capital and intangible assets, is considered as the most important resource for them and includes the knowledge, skills, attitudes, skills, qualifications and competencies in human resources and it is called as human capital. In fact, organizations that have systematic and strategic plan for the development of this kind of assets, can generate more value for customers and it is one of the approaches for capacity development and human resource capacity for producing value, learning based on competence(1).

In this regard, training in work is an effective process in performance improvement of organization and it is a management activity that will be held in both general and specialized scales, and it is used as an instrument of efficiency in improving and modifying methods and can help to meet the challenges and management issues and important issues in education(2). On the other hand training in the field of development of human resources in organization is the form of useful investments that is a key factor in the development and, if it is properly planned and implemented, can have a significant economic return, and results of the study show that attention to human resource training and development, increase productivity. Therefore, determining the training needs, is the starting point of any educational activity that has great impact on the effectiveness and provides a basis for evaluation And decision-making in the field of education(3).

From an organizational perspective, the educational needs are things that individuals or groups of particular job should know and do with what they know and can do the current situation. In fact, educational needs are factor for people to learn something for their organizations or communities to have a better job performance and to gain more knowledge and skills(4). Also recognition and effective analysis of training needs is a prerequisite for a successful education system. In the way that, determining educational needs is the first step in planning and is the first factor in creating effectiveness performance of training and development and if it is performed in correct way, it can provide a better condition for
effective planning, and it will be likely to be fit with organization needs, job and staff areas and finally their effectiveness (5). As training is costly, it must be provided when the response to a need is identified and then it is the best solution. And the educational programs that are planned without considering these factors are not valuable (6).

Four steps are considered in educational needs; first analyzing the gap between the current situation and the efficient situation. This step includes the true performance of organizations and individuals with available standards in front of new standards and it is conducted by considering Organizational objectives, environment, internal and external constraints, and not only the current performance. Identifying the necessary duties and differing the actual needs from other needs is very important, in fact identifying the gap between the current situation and performance and necessary situation will lead to identifying the needs, objectives.

The second step is to identify the necessities and priorities which must provide a comprehensive list of educational needs and job development or other factors and conduct it based on its importance and emergence according the organization needs. In the third step, identifying the reasons of performance problems, threats and opportunities which are focused on critical needs on organizations is conducted and there will be some solutions provided in identifying threats and opportunities.

Two questions are evaluated for identifying each need, the effective work by staffs and awareness of work procedure and then based on the individuals’ analysis, the jobs and organizations will be evaluated for current situation and for preparing for future. In the fourth step, the possible solutions and the growth opportunities are evaluated for future. And it is used when there is the importance to move people toward the goals and new approaches (7).

Among the human force in hospital, the activities by nursing staff is very important for providing medical care to patients and having more relationship with them and providing nursing services is related to the quantity and quality of work in hospital. Because the nursing section is the largest section and nurses form the largest workforce of hospital and the experienced and skilled nurses have a very important role in improving hospital care. On the other hand nursing profession because of the nature of the work during day and night is severe and is associated with stress and occupational injuries among nurses is high and it is much more because of the pressures of work and lack of standardization of facilities and equipment. So considering the standard situation for workplace can decrease job pressures (8). And professional capabilities of them has an important role in fulfillment of the health (9).
Therefore, needs assessments for training purposed to identify the needs of individuals and groups working in nursing can be an effective as an prerequisite in successful educational system. And designing such a program at each hospital can increase the effectiveness of training by identifying strengths and weaknesses of nurses. Therefore, this study aims to determine the educational needs assessment of safety principles in the preventing occupational risks of nurses is Ayatollah Taleghani Hospital in Kermanshah in 2015. Besides, this issue can help to prevent the occupational risks, it can improve the nurses’ satisfaction and then, the patients’ satisfaction and the hospital will be more successful in achieving the organizational goals.

**Materials and Methods**

This is a cross-sectional research in 2015 in Kermanshah's Ayatollah Taleghani Hospital. The population consisted of all nurses working in this center including orthopedic (women and men), general surgery (men and women), neurosurgery, oncology, emergency and ICU. And sampling was conducted using quota sampling and 70 of them were selected as the sample.

The data collection tool is a questionnaire consisted of two parts; the first section, demographic information including: The therapeutic section of nurses' activity, work level, shift work, gender, education, age and work experience, and the second part contains five fields related to safety in the prevention of occupational risks in the nursing profession with 23 items ( biological with 10 items, physical factors with 2 items, chemical by 4 items, ergonomic factors with 4 items, psychological and social factors with 3 items) that these areas are separately evaluated the factors related to safety princes in occupational risks.

Questionnaire scoring is conducted using 5-point Likert scale with valuation, from 1 to a maximum of 5 points for each item for the educational needs. The validity of tools was confirmed by validity of contents according to sources and reference books, and other questionnaires and it was approved by two faculty members and then reformed. Reliability of the tool was determined through internal consistency by calculating Cronbach's alpha 82.0. For performing the research the data were collected by referring to hospital and distributing the questionnaires between nurses and the data were entered in SPSS-18 software. Descriptive statistical methods was used to determine the average total score and scores of domains and independent t-test, Pearson and Spearman methods were used to assess differences between areas and the results were presented in the form of two-dimensional tables.
Findings

The frequency distribution of personal information of nurses in table 1 indicates that 32 of nurses participating in this study were male (45.7%) and 38 were female (54.3%). In term of educations: 30% assistance, 11.4% technician of nursing, 58.6% the nursing experts and also 30% are assistance, and 70% are section nurses and 54.7% work in morning shift and 38% have the changing shift. In classification of age, 50% were between 23 38 and 50% were between 39 to 54 and in work experience 48.6% had less than 10 years’ experience and 20% had more than 20 years’ experience and 31.4% had between 10 to 20 years’ work experience. According to the differences in the questions and evaluating the responses based on Likret scale, the minimum and maximum and mean of the total score is presented in table 2 and then in order to compare the areas, the final mean and standard deviation were calculated based on the 1 to 5 scale. The results obtained from this study for comparing the mean and standard deviation score of educational need assessment of safety principles in preventing the occupational risks in nurses indicates that, the mean of ergonomic factors (16/1 ±15/3) is more than other factors and the biological factors mean (94/0±63/2) is less than other factors. And the chemical, physical, mental and social factors had respectively the highest scores; also comparing the obtained results with the total score of questionnaire (2/85±2/85)indicates that, only the mean of the biological factors is less than the total mean.

In table 3, the results obtained from this research for each area and by comparing the maximum score of each factor in the group under study it is indicated that, in all areas the nurses’ need to training the safety principles in preventing the occupational risks is more than 50% and in general, the need for training is between 52.56% to 62.90%.

The result of table 4 indicates that, there isn’t any significant statistical relationship between the variables of age, gender, work experience with 5 evaluated areas. But there is a significant relationship between the variable of section with physical factors (025/0p=) Education with Biological factors (p=0.003), physical factors (p=0.005), chemical factors (p=0.017) and the ergonomic factors (p=0.003). The work level with biological factors (p=0.001), physical factors (p=0.039) and ergonomic factors (p=0.014), work shift with physical factors (p=0.004).

Table-1. The frequency distribution of personal information of nurses participating in this study.

<table>
<thead>
<tr>
<th>Personal information</th>
<th>frequency</th>
<th>percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>gender</td>
<td></td>
<td></td>
</tr>
<tr>
<td>male</td>
<td>32</td>
<td>45/7</td>
</tr>
<tr>
<td>female</td>
<td>38</td>
<td>54/3</td>
</tr>
</tbody>
</table>
Table-2. Mean and standard deviation educational need for safety principles in preventing the occupational risks of nurses working in educational health care center of Ayatollah Taleghani by considering study areas.

<table>
<thead>
<tr>
<th>area</th>
<th>item</th>
<th>minimum</th>
<th>maximum</th>
<th>Mean and standard deviation from the maximum score</th>
<th>Mean and standard deviation (1-5) from scale</th>
</tr>
</thead>
<tbody>
<tr>
<td>Biologic factors</td>
<td>10</td>
<td>10</td>
<td>50</td>
<td>26/28±9/42</td>
<td>2/63±0/94</td>
</tr>
<tr>
<td>Physical factors</td>
<td>2</td>
<td>2</td>
<td>10</td>
<td>5/86±2/34</td>
<td>2/93±1/17</td>
</tr>
<tr>
<td>Chemical factors</td>
<td>4</td>
<td>4</td>
<td>20</td>
<td>12/11±4/08</td>
<td>3/03±1/02</td>
</tr>
<tr>
<td>Ergonomic factors</td>
<td>4</td>
<td>4</td>
<td>20</td>
<td>12/58±4/64</td>
<td>3/15±1/16</td>
</tr>
<tr>
<td>Psychological and social factors</td>
<td>3</td>
<td>3</td>
<td>15</td>
<td>8/70±3/50</td>
<td>2/90±1/17</td>
</tr>
<tr>
<td>General</td>
<td>23</td>
<td>23</td>
<td>115</td>
<td>65/54±16/70</td>
<td>2/85±0/73</td>
</tr>
</tbody>
</table>

Table-3. The percent of educational need for safety principles in preventing the occupational risks of nurses working in educational health care center of Ayatollah Taleghani by considering study areas.

<table>
<thead>
<tr>
<th>area</th>
<th>maximum</th>
<th>Mean and standard deviation</th>
<th>percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Biologic factors</td>
<td>50</td>
<td>9/42±26/28</td>
<td>52/56</td>
</tr>
<tr>
<td>Physical factors</td>
<td>10</td>
<td>2/34±5/86</td>
<td>58/60</td>
</tr>
</tbody>
</table>
Table-4. Evaluating the relationship between the demographic information of nurses educational need for safety principles in preventing the occupational risks.

<table>
<thead>
<tr>
<th>Sig</th>
<th>Biologic factors</th>
<th>Physical factors</th>
<th>Chemical factors</th>
<th>Ergonomic factors</th>
<th>Mental and social factors</th>
<th>total</th>
</tr>
</thead>
<tbody>
<tr>
<td>section</td>
<td>0/117</td>
<td>0/025*</td>
<td>0/084</td>
<td>0/288</td>
<td>0/165</td>
<td>0/143</td>
</tr>
<tr>
<td>gender</td>
<td>0/116</td>
<td>0/495</td>
<td>0/193</td>
<td>0/453</td>
<td>0/261</td>
<td>0/374</td>
</tr>
<tr>
<td>education</td>
<td>0/003*</td>
<td>0/005*</td>
<td>0/017*</td>
<td>0/003*</td>
<td>0/352</td>
<td>0/308</td>
</tr>
<tr>
<td>Work experience</td>
<td>0/270</td>
<td>0/444</td>
<td>0/167</td>
<td>0/393</td>
<td>0/090</td>
<td>0/162</td>
</tr>
<tr>
<td>level</td>
<td>0/001*</td>
<td>0/039*</td>
<td>0/055</td>
<td>0/014*</td>
<td>0/178</td>
<td>0/427</td>
</tr>
<tr>
<td>shift</td>
<td>0/326</td>
<td>*0/004</td>
<td>0/170</td>
<td>0/094</td>
<td>0/458</td>
<td>0/117</td>
</tr>
<tr>
<td>age</td>
<td>0/435</td>
<td>0/119</td>
<td>0/168</td>
<td>0/233</td>
<td>0/132</td>
<td>0/147</td>
</tr>
</tbody>
</table>

Discussion

The results of the study by Shiroyeh Zad et al. On evaluating effectiveness of training with educational level and other organizational level, which just met one of the variables of this study, indicated that, if the managers have more attention about personnel’s with lower education, there will be an increase in the training effectiveness of organization which is in contrast with the results of this study(2). Because the results of the table 4 indicate that, the educational level has a direct and significant relationship with training need. Based on the results from table 3, the nurses indicated the need for training is between 58% - 62.90%, and it shows their awareness from the importance of the items in safety principles. And also the obtained results about biological factors and mechanical factors is compatible with the study by Mohammadi et al. on considering the safety principles of nurses and the need for training (10).

The results of the study by Avijgan et al on educational need assessment of members of factually, shows the priority of individual development, among 60 evaluated areas is compatible with the results obtained in table 3 and with the need about 60% to safety principles in preventing the occupational risks(11).
Also the educational need in this study in table 2 is compatible with the study conducted by Bordbar et al. in southern Khorasan in term of the need to training for approaching the new and update science, the increase in specialized and skill ability, and reduction in errors and increase in job motivation(12).

Based on the results on the table 4, there is a significant relationship between ergonomic factors and work level and it is not compatible with the study of Mosadeghrad et al who considers only one of the present study hypotheses. Because the awareness of nurses from ergonomic science and the occupational injuries have statistically the revised relationship and there is a significant relationship between the work situation and the occupational injuries(8).

**Conclusion**

The continues training of safety principles in preventing the occupational risks for nurses which consists of the individual health care and safety of individual, is very important in hospitals, therefore, recognizing and analyzing the educational need can provide the more realistic plan and implementation and more effectiveness based on the system’s work nature. Also, if the nurses can raise their need and perspectives exactly in need assessment process, hospital can provide the emergency training program based on the evaluation of need assessment. Because in this state the needs are exactly assessed and based on the needs there will be as appropriate planning and goal, and this can lead the hospital to help to improve the nurses’ ability in obtaining the organizational objectives.

**Acknowledgments:**

This paper is the result of a research project approved by Number 94476 Kermanshah University of Medical Science. Whereby the Deputy of Research and Technology with the project agreed as well as all staff who participated and gave their time to this project is gratitude.

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