

Educational Need Assessment of Nursing Personnel According to Global Evolution and Change (Case Study: Tehran Firouzgar Hospital)

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Received 2017 September 01; Accepted 2018 June 17.

Abstract

Background: Because of the fundamental role that nursing occupation, such as other sciences in the society, it cannot be separated from the changes with the advancement of technology and the advancements in social medicine.

Objectives: The present research was conducted with the aim of the educational needs assessment of nursing staff according to the universal changes in Firouzgar Hospital in Tehran.

Methods: The research was a mixed method with an exploratory approach. The research quantitative population consisted of all nurses in Firouzgar Hospital of Tehran; among whom 251 individuals were selected as a sample size using Morgan table and stratified random sampling method. In the qualitative section, using purposive sampling method and the principle of saturation in the sample, 11 supervisors and 10 doctors were selected. Data collection in the qualitative section was based on semi-structured interviews and also the employment of standard questionnaire in the quantitative section. The obtained data using the questionnaire in two sections of qualitative (codifying) and quantitative were analysed in two levels of descriptive and inferential.

Results: The research findings indicated that staff educational needs in Firouzgar Hospital according to universal changes are as follows: New individual needs, educational needs, social needs and career needs; among which only occupational new individual needs are in a desirable situation.

Conclusion: It is concluded that the nurses, like many other businesses, for various reasons, over time, distance themselves from the necessary capacities and delicacies in performing their roles, and in such a situation only the training can fill these gaps.

Keywords: Change, Educational approach, Needs assessment, Universal

1. Background

Today's world is changing faster than ever (1). Technology development, financial restrictions, new philosophies and state laws push on organizations. However, the process of change is not so simple, and its successful implementation requires significant contributions from individuals within the organization and outside consultants (2). From the organizational point of view, the change means the concept of evolution in the organization in order to enable continuity of activities or survival, depending on the environmental conditions (3). Apprenticeship is described based on the design of the educational system as a systematic approach. Apprenticeship is the point where human beings and technology encounter in the organization (4). Apprenticeship is a training designed to improve the performance of a person in his current job. Apprenticeship is a part of the development of human resources. The development of human resources is an experiment organized in a specific time frame in order to increase the possibility of improving job performance. The need assessment begins with the identification of critical needs and continues with the definition of goals and the appropriate context for organizing the other elements around the prioritized needs (5,6).

Meanwhile, because of the fundamental role that nursing occupation, such as other sciences in the society, cannot be separated from the changes with the advancement of technology and the advancements in social medicine. The nursing is a progressive science, which, if it does not improve, it will be like going back (5). As well as a nurse is considered as a person that has a close relationship with patients and other health and community groups. Due to the rapid progress of knowledge and technology, a nurse should be aware of all skills and new care techniques (7). Therefore, considering the importance of nurses' awareness, it seems necessary to educate them more and more. In other words, providing nursing services with high quality is not possible without training during nursing serving and studying and getting to know new techniques due to the vital role of nurses and the impact of nursing scientific progress on nursing care (8).

Continuing education and learning by participating in in-service training courses is one of the most important ways to promote nursing (9). In Iran, in-service training of nursing staff has been started since 1951 and so far has been implemented in various forms. Despite the relatively long history of the implementation and application of in-service training programs for nursing staff, it is anticipated

that the quality of nursing care delivery in our hospitals is in a relatively favorable and satisfactory condition. While there are numerous studies in this field that indicate the quality of nursing care in different parts of the hospital on an undesirable level. In a study conducted to assess the quality of nursing care in hemodialysis patients and to assess the level of awareness of nurses working in these parts of the peritoneal dialysis, it was shown that nursing care quality was not good in this group of patients and in most cases the dialysis department staff did not have enough knowledge and awareness (10).

There are shortages and abnormalities in the educational facilities and expert human resources for managing training programs in the training of nursing staff in our hospitals. Also, studies showed that the nursing staff's in-service training programs are not properly implemented based on the principles of training and human resource development (10). As surveys have shown, employee training has led to the maintenance of continuity and survival of the organization. A three-year study in Singapore has shown that 17 percent of the country's commercial and industrial companies have failed, while the ratio for companies with staff training programs have done less than 1% (9).

If the identification and prioritization of the needs are not done correctly, the educational and health professionals while performing their activities will not achieve the desired results and their activities will not be effective and will have little effects (11). Identifying educational needs that are aimed at nurses is therefore important due to identify and reveal the framework and area of influence of identifying needs. Once the needs are identified and introduced in this framework, a better program can be prepared to fix it (9). Therefore, if determining, identifying and prioritizing educational needs of nurses properly designed and implemented, is an important tool for the effectiveness of education and rehabilitation and the medical and health system, which indicates the importance of this study.

Based on the experience of the researcher's life, who has seen the training of nursing staff at the hospital dealing with nursing staff at the hospital, nurses have always been dissatisfied with these educational programs, and this content is obsolete and incompatible with the daily needs and the evolution of societies. Accordingly, from the beginning, the need assessment for training the staff of physicians and nurses of Firozgar Hospital is synchronized with regard to the ongoing global change. This coordination should be done by the educational planners of the Ministry of Health and Firoozgar Hospital with regard to the new available educational approaches and new individual needs (for each of the nursing staff in each field, including

the clinic, the type of occupation and social needs of the nurses, and the manner in which equipment and technology are used). Therefore, the present study aimed to help nurses to improve their educational programs by implementing the educational needs assessment project. Therefore, the aim of this study is to identify the comprehensive educational needs of nursing staff in Firoozgar Hospital in Tehran, with regard to global change.

2. Methods

The research was mixed method with an exploratory approach.

2.1. Statistical population, Sampling method and Sample Size

Qualitative section: The participants were experts and specialists in the medical community (supervisors and physicians) in this part of the study who had experience in the field of training nursing personnel at various levels and so-called, well-known experts. The purposive sampling method and saturation principle were used to determine the samples of this study and to determine the group of experts. In this study, 11 supervisors and 10 doctors were considered as the interviewees. It is worth noting that the interview process was carried out in the fall of 2016.

Quantitative section: The population included all 420 hospital nurses. Random stratified sampling method (male and female) and Morgan table were used to select statistical samples. Accordingly, 201 people were considered as a sample size. It is worth noting that in order to ensure the results of the findings, 260 questionnaires were distributed in the statistical society, of which 9 were excluded due to incompleteness. In this regard, firstly, based on a list of the hospital that was obtained with the assistance of the directorate and the hospital statistics office, each male and a female nurse were determined and then 251 persons selected randomly according to the stratified random sampling (73 men and 178 women). A questionnaire was distributed among them.

2.2. Tools

Qualitative section: Semi-structured interviews were used in this study. Nine questions were used for the preliminary examination in individual interviews with interviewees. Meanwhile, additional sub-questions were raised along with each question to understand participants' experiences during the interview. The researcher checked the accuracy of his statements by asking questions from the interviewees during the interview. The researcher analysed the data in the process of sampling the participants; so that incomplete cases can be completed by obtaining new information from the

new participant. After conducting 21 interviews, the main and secondary factors were repeated in previous interviews and the researcher reached saturation. The duration of the interview was between 10 and 20 minutes.

Quantitative section: In the quantitative section of the study, the questionnaire was designed based on extracted qualitative criteria and also using the standard questionnaire of Hakim Zadeh et al. (2014). The research questionnaire consists of two parts. Firstly, the general characteristics of the subjects and then the questions related to the educational needs assessment, which included 50 questions covering 11 questions related to new individual needs; 21 questions related to job requirements; 10 questions related to training needs and 8 questions related to social needs. In order to measure, firstly the apparent validity of the final questionnaire was compiled with the help of the researcher, several sample members, supervisor professor, and counsellor. Then in the content section, the research questionnaire was modified and finalized using experts' opinion. To determine reliability, Cronbach's alpha coefficient was used, and Cronbach's alpha coefficient for all components was higher than 0.7, indicating a correlation between the questionnaire questions for each variable.

2.3. Data analysis Method

Qualitative section: Content analysis and data encoding

Quantitative section: Descriptive and inferential statistics were used to analyse the research questions. The data were obtained from the questionnaire in the descriptive part of the demographic variables, as well as the variables such as mean, standard deviation, frequency distribution tables and charts. In the inferential part, exploratory factor analysis was used to determine the educational needs of nursing staff with respect to a global change in Firoozgar Hospital in Tehran. Also, the one-sample t-test was used to determine the status of the types educational needs.

2.4. Moral considerations

The moral considerations are as follows:

- The right of being anonymous the questionnaires and use the code instead of the name of the person
- Explain the goals and steps of the study before submitting the questionnaire
- Keep confidentiality information of the participants- Provide the results of the research to the participants upon request
- Voluntary and optional participation in the study

3. Results

In this section, research data is analysed and evaluated using scientific methods. Given that the

study is of mixed type, data analysis consists of two parts: qualitative data analysis and quantitative data analysis.

3.1. Qualitative results

What are the educational needs of nursing staff with regard to the global change in Firoozgar Hospital in Tehran?

The following [Table 1](#) showed the results of the content analysis of the interview.

In the above table, the basic concepts are presented derived from the content analysis.

To answer the research question, exploratory factor analysis was used. In order to determine whether sample size and the relationship between variables are suitable for factor analysis, the KMO index and the Bartlett test were used. Based on the results, the KMO index was greater than 0.6. Also, the significance level of 0.000 for Bartlett's test also indicates the suitability of the research variable for factor analysis, since the assumption of the integrity matrix is rejected. In the dimension of nurses' educational needs assessment, based on the results of the qualitative and content validity section, 50 exploratory factors were identified. The aggregate charts of the indicators showed that aggregate extraction for all indexes was higher than 0.5, and there was no need to remove any questions.

In [Table 2](#), the first four factors have special values larger than one and remain in the analysis. These factors explain approximately 41% the variance of nursing educational needs assessment indicators.

As shown in [Table 3](#), using factor analysis after rotation, 4 factors and 50 indicators were identified. Based on the literature on this field, the first factor was the emergence of new personal needs; the second factor was job requirements; the third factor was educational needs and the fourth factor was social needs. These factors were extracted based on the content analysis of the interviews and their number. So it is avoided to number of them again.

3.2. Quantitative results

The normality of the data related to the variables of research was investigated using Shapiro-Wilk test. The level of significance in all variables was greater than 0.05. In other hands, the distribution of all variables was normal. The following questions are discussed below:

What is the current status of identified needs with regard to global change at Firoozgar Hospital in Tehran?

In order to understand the status of identified components in nursing staff training needs, considering the normal distribution of data and the distance scale of variables, one-sample t-test was used.

Table 1. Checklist for the results of the content analysis of the interview

	Extraction of the primary concepts	Interviewer's Code
1	Obtaining knowledge related to the computer general software	01, 03, 5, 11, 12, 14, 16, 17, 18, 19, 21
2	Obtaining knowledge related to the way of using the computer general software	1, 4, 5, 7, 12, 13, 16, 19, 20, 21
3	Learning of the English language or all the foreign languages	2, 4, 3, 5, 6, 12, 13, 15, 16, 17, 18, 19
4	How to report and how to write the report	1, 4, 6, 9, 10, 12, 17, 18, 19, 20, 21
5	Problem-solving skills	2, 3, 5, 14, 16, 15
6	Individual health care	4, 5, 8, 9, 13, 15, 17, 18, 20
7	Self-control and tolerance skills	Of 2, 4, 5, 13, 15, 16, 17
8	Ethics in nursing	3, 6, 7, 10, 13, 14, 18
9	Rights in nursing	1, 3, 6, 7, 8, 12, 13, 15, 17
10	Hospital infection control	2, 3, 5, 6, 7, 9, 10, 12, 15
11	Interpersonal communication skills	3, 4, 6, 8, 9, 11, 14, 17, 21
12	A special retraining on AIDS	2, 5, 7, 8, 10, 13, 14, 15, 17, 18, 20
13	Effective communication with patients	1, 4, 5, 8, 9, 11, 15, 18
14	Familiar with the HIS system	2, 12, 14, 19
15	Familiar with the system and these new medical equipment	6, 7, 8, 11, 15, 16
16	Introduction to modern medical equipment and systems	3, 4, 7, 8, 9, 13, 15, 17, 19, 20, 21
17	Control of invasive patients	1, 3, 5, 11, 14, 15,
18	Working with the devices of the relevant units	2, 4, 5, 13, 15, 16
19	Teach the patient	3, 4, 6, 11, 13, 16, 17, 18
20	Training using the authorized networks	4, 5, 9, 12, 14, 17
21	Empathy skills in front of patients	1, 4, 11, 15, 17, 18, 19
22	How to gain the trust of patients	1, 3, 5, 8, 12, 13, 16, 18
23	New management method	2, 3, 6, 8, 9, 13, 15, 16
24	Working group skills	2, 4, 9, 14, 17, 21
25	Appropriate reaction with the patients	4, 7, 8, 12, 17, 19, 20
26	How to interact with caregivers of patients	4, 9, 12, 17, 19, 21
27	Protection of the environment	3, 7, 16, 19, 21
28	Understanding crisis management during work	5, 8, 14, 16, 19
29	Promoting Conscientiousness	7, 12, 18, 20, 21
30	Speed while doing the tasks	4, 5, 6, 9, 12, 15, 17, 20
31	High precision in performing the tasks	5, 6, 7, 9, 12, 17, 18
32	Being criticized in the work environment	1, 3, 5, 6, 12, 14, 18, 19, 20
33	Regularity at work and during duty	3, 7, 17, 15, 18, 20, 21
34	Health job	1, 4, 5, 12, 13, 19, 20
35	Managing and organizing	3, 6, 8, 12, 14, 15, 16, 19, 20
36	High motivation to provide better services	7, 10, 12, 14, 16, 17, 18, 21
37	Work environment safety	8, 12, 16, 19, 20
38	Principles of controlling infectious diseases	1, 4, 11, 13, 15
39	The ability to properly use hospital equipment and how they work	5, 7, 9, 13, 14
40	Having diagnostic skills in relation to clinical symptoms of the patient	2, 6, 8, 13, 16, 17, 18
41	Understanding generic names of drugs	5, 17, 19, 20, 21
42	Familiar with the different drug dosage forms	3, 7, 12, 15, 16, 17
43	Familiar with the side effects of drugs	4, 7, 14, 15
44	Understanding of the patient's psychological disorder	3, 6, 7, 9, 14, 18
45	Skills to communicate with the managers	4, 9, 16, 17, 21
46	Awareness of the patient's safety threats and how to deal with him correctly	5, 13, 14, 17, 19
47	Separation of hospital wastes	1, 2, 4, 15, 17, 19, 20, 21
48	Interpretation of the experiments	2, 6, 9, 12, 14, 21
49	Safe injection skill	8, 13, 16, 20, 21
50	Skills to communicate outside the organization	3, 7, 11, 15, 16, 19

Table 2. Explaining the variance of effective factors

Factors	Special initial values			Total squared extracted times			Total square rotated times		
	Total	Variance	The cumulative percentage	Total	Variance	The cumulative percentage	Total	Variance	The cumulative percentage
1	13.283	26.566	26.566	13.283	26.566	26.566	7.906	15.812	15.812
2	3.325	6.651	33.216	3.325	6.651	33.216	6.658	13.317	29.128
3	2.234	4.469	37.685	2.234	4.469	37.685	3.27	6.54	35.668
4	1.784	3.567	41.253	1.784	3.567	41.253	2.792	5.584	41.253
5	0.985	0.169	41.419						
6	0.937	0.074	41.570						
50	0.163	0.325	100.00						

Table 3. Discovered Components of Exploratory Factor Analysis based on the content analysis of the interview

Component	Items
First factor (new individual needs) 11 items	Q1
	Q2
	Q3
	Q4
	Q5
	Q6
	Q7
	Q8
	Q9
	Q10
	Q11
Second factor (career needs) 21 items	Q30
	Q31
	Q32
	Q33
	Q34
	Q35
	Q36
	Q37
	Q38
	Q39
	Q40
	Q41
	Q42
	Q43
	Q44
	Q45
	Q46
	Q47
	Q48
	Q49
	Q50
Third factor (educational needs) 10 items	Q12
	Q13
	Q14
	Q15
	Q16
	Q17
	Q18
	Q19
	Q20
	Q21
Fourth factor (social needs) 8 items	Q22
	Q23
	Q24
	Q25
	Q26
	Q27
	Q28

Table 4. One-sample t-test to examine the educational needs of nursing staff

Factor	T	df	p	Test value = 3		
				Mean difference	Confidence interval 95% of the difference Bottom line	upper line
New individual needs	12.896	250	0.000	0.912	0.77	1.05
Job requirements	-3.893	250	0.000	-0.319	-0.48	-0.16
Educational Needs	-6.496	250	0.000	-0.514	-0.67	-0.36
Social needs	-6.002	250	0.000	-0.466	-0.62	-0.31

In this section, considering that the scale is 5 degrees, the numerical value for comparison with the T statistic was considered as 3.

As can be seen in Table 4, the significance level of all variables is less than 0.01; therefore, the zero assumption with 99% confidence is rejected and the assumption of the research is confirmed. On the other hand, given that the mean difference for three factors of "career needs", "educational needs" and "social needs" are negative, we can say that the observed mean for the identified factors is not in a favorable situation. In addition, the mean difference between the "new individual needs" is positive and it can be concluded that the new needs of the individuals are in a favorable situation.

5. Discussion

The subject of this study was to investigate the comprehensive educational need assessment among nursing staff based on the global change (case study: Firoozgar Hospital in Tehran) in 2016. The most important step in educational planning is identifying and prioritizing educational needs, which is considered as need assessment. If the training programs are based on the correct measurement of needs, they are effective in solving problems and problems of the organization. The findings of the previous section identified factors such as new individual needs, career needs, educational needs and social needs in light of the global change in the staff of the Firoozgar Hospital in Tehran.

One of the educational needs of nurses was the need for computer skills. Human resources of the organizations have a high educational need in this field given the accelerating changes in the attitudes of humans and the need for new technology in all departments and organizations. Therefore, attention to these basic needs, planning for the development of human resources in different dimensions is necessary. Ebadi (2011) confirms this finding that the use of new information systems in the working environments is increasing and the systems are upgraded and complicated (12).

Regarding the second factor, career needs, it should be acknowledged that, given the variety of equipment and the advancement of technology used in medicine, this need is urgent. Proper training of the use of equipment in different parts of the hospital can promote the level of nursing services. Although

the hospital's managers, as a new unit is introduced into the department, teaches the work of it for all the personnel, but training how to work with different devices and how to keep and disinfect them should be a common need. The results of this study is consistent with the results of the study by Mohammadi & Dadkhah (2005) and Hojat (2011) (13,14); which they mentioned about the importance of career needs for nursing staff.

The third factor also refers to the need for a new educational approach. In explaining this finding, it can be said that, according to Bastable (2012), one of the basic responsibilities of team members, especially nurses, is to educate clients and their families. This should be done with the primary purpose of helping them to better accommodate and retain their independence in their care. Other educational priorities of nurses were education using new technologies and virtual networks. In virtual and e-learning, due to the fact that the comprehensive self-responsibility is learning, more motivation is created for learning and deeper learning is created (15).

Finally, consideration of social needs is also recognized as other factors. In explaining this finding, it can also be said that the society and its objectives include all the organs in which they can be represented, which in fact can be called a trans-system or a comprehensive system; therefore, the social goals are the principal leader programs and operations of various institutions and organizations.

The quantitative findings suggest that the current status of the needs of "job needs", "educational needs" and "social needs" is not desirable due to global change, but the factor of "new individual needs" is positive. And it can be concluded that the new individual needs are in a favorable situation. In Firoozgar Hospital of Tehran, due to the diversity and variety of hospital equipment and the advancement of technology used in medicine, there is a lack of continuity of training of nurses with their job needs, which causes the condition of this factor to be undesirable. In fact, in order to meet the job needs of the nurses, proper training should be made on the use of equipment in different parts of the hospital. Regarding individual needs, this situation is due to the young age of hospital nurses and personal interest in the use of technology; because one of the educational needs of nurses is computer skills that most of them in the community. The sample of the study is at the

optimal level in these skills.

One might think of several reasons for the result of this study: Firstly, we need to refer to the broad and global changes of the 21st century, which have transformed all organizations. Secondly, it is a dynamic, yet evolving nature of the nursing profession, which is bound to be up to date as an essential part of it. The third reason is the essence of education, because nurses, like many other businesses, for various reasons, over time, distance themselves from the necessary capacities and delicacies in performing their roles, and in such a situation only the training that can fill these gaps.

Suggestions and limitation of the study

It is suggested to promote the nurses with In-service training courses for computer training, specialized language, as well as the Internet and communications; promoting English language of the nurses; training staff for new devices by the managers, availability the program via intranet for the nurses and improving the research facilities. Regarding the good situation of the individual needs, it is suggested to conduct self-contained educational needs, re-training maneuver and scientific application in the six-month period and funding and financing necessary for equipping and purchasing communications and telecommunication infrastructure for nursing education. This study has some limitations. This research has been carried out on the nurses of Firoozgar Hospital, therefore caution should be taken in generalizing its results to other hospitals and medical staff. There was a weakness of screening nurses based on demographic variables such as socio-economic conditions, before starting a research for a more hands-on sample. According to these restrictions, some suggestions are recommended to future researchers:

1. Needs assessment for nurses in each department is done individually.
2. To examine the difference between the needs of nurses according to gender, age, background, and education.
3. It is suggested that similar research is done in other hospitals, both public and private, and the result of which is to compare the research.

Acknowledgments

None.

Conflicts of interest

None.

References

1. Whyte J, Stasis A, Lindkvist C. Managing change in the delivery of complex projects: Configuration management, asset information and 'big data'. *Int J Project Manag.* 2016; **34**(2):339-51. doi: [10.1016/j.ijproman.2015.02.006](https://doi.org/10.1016/j.ijproman.2015.02.006).
2. Keenan RJ. Climate change impacts and adaptation in forest management: a review. *Ann Forest Sci.* 2015; **72**(2):145-67. doi: [10.1007/s13595-014-0446-5](https://doi.org/10.1007/s13595-014-0446-5).
3. Breslin D. What evolves in organizational co-evolution? *J Manag Govern.* 2016; **20**(1):45-67. doi: [10.1007/s10997-014-9302-0](https://doi.org/10.1007/s10997-014-9302-0).
4. Sinclair P, Fitzgerald JE, Hornby ST, Shalhoub J. Mentorship in surgical training: current status and a needs assessment for future mentoring programs in surgery. *World J Surg.* 2015; **39**(2):303-13. doi: [10.1007/s00268-014-2774-x](https://doi.org/10.1007/s00268-014-2774-x). [PubMed: [25315087](https://pubmed.ncbi.nlm.nih.gov/25315087/)].
5. Pennel CL, McLeroy KR, Burdine JN, Matarrita-Cascante D. Nonprofit hospitals' approach to community health needs assessment. *Am J Public Health.* 2015; **105**(3):e103-13. doi: [10.2105/AJPH.2014.302286](https://doi.org/10.2105/AJPH.2014.302286). [PubMed: [25602862](https://pubmed.ncbi.nlm.nih.gov/25602862/)].
6. Lazure P, Bartel RC, Biller BM, Molitch ME, Rosenthal SM, Ross JL, et al. Contextualized analysis of a needs assessment using the Theoretical Domains Framework: a case example in endocrinology. *BMC Health Serv Res.* 2014; **14**:319. doi: [10.1186/1472-6963-14-319](https://doi.org/10.1186/1472-6963-14-319). [PubMed: [25060235](https://pubmed.ncbi.nlm.nih.gov/25060235/)].
7. Cateau C, Piaton S, Nicolas E, Hennequin M, Lassauzay C. Assessment of the oral health knowledge of healthcare providers in geriatric nursing homes: additional training needs required. *Gerodontology.* 2016; **33**(1):9-11. doi: [10.1111/ger.12094](https://doi.org/10.1111/ger.12094). [PubMed: [24313731](https://pubmed.ncbi.nlm.nih.gov/24313731/)].
8. Wark S, Hussain R, Edwards H. The training needs of staff supporting individuals ageing with intellectual disability. *J Appl Res Intellect Disabil.* 2014; **27**(3):273-88. doi: [10.1111/jar.12087](https://doi.org/10.1111/jar.12087). [PubMed: [24436133](https://pubmed.ncbi.nlm.nih.gov/24436133/)].
9. Vaezi A. Designing a continuing education pattern for improving nurses. [PhD Thesis]. Tehran: Tarbiat Modares University; 2012. [Persian]
10. Doaie H, Aghel E. Study and determine the educational needs of employees of technical affairs and production of publishing institutes. *J Exec Manag.* 2002; **2**(1):21-3. [Persian]
11. Bekkema N, de Veer AJ, Albers G, Hertogh CM, Onwuteaka-Philipsen BD, Francke AL. Training needs of nurses and social workers in the end-of-life care for people with intellectual disabilities: a national survey. *Nurse Educ Today.* 2014; **34**(4):494-500. doi: [10.1016/j.nedt.2013.07.018](https://doi.org/10.1016/j.nedt.2013.07.018). [PubMed: [23972684](https://pubmed.ncbi.nlm.nih.gov/23972684/)].
12. Ebadi R. Information technology and education. Tehran: Smart Schools; 2011. [Persian]
13. Mohammadi MA, Dadkhah B. Continuous medical education from view of nursing personal working in Ardabil hospital. *J Ardabil Univ Med Sci.* 2015; **5**(3):271-7.
14. Hojat M. Needs' assessment of nursing personal of Jahrom University of Medical Sciences using Delphi technique in 2008. *Iran J Med Educ.* 2011; **10**(4):464-6. [Persian]
15. Lahti M, Haapaniemi-Kahala H, Salminen L. Use of social media by nurse educator students: an exploratory survey. *Open Nurs J.* 2017; **11**:26-33. doi: [10.2174/1874434601711010026](https://doi.org/10.2174/1874434601711010026). [PubMed: [28400892](https://pubmed.ncbi.nlm.nih.gov/28400892/)].