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Evaluation of In-Service Training and Staff Qualifications and Education in Kurdistan University of Medical Sciences

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Abstract

The purpose of this study was to evaluate the status of Kurdistan University of Medical Sciences regarding international standards of in-service training and Staff Qualifications and Education (SQE). This is an applied, descriptive-analytical, and cross-sectional study; it is performed by two questionnaires of "SQE standards" and "measurable standards of SQE" in 10 hospitals affiliated to Kurdistan University of Medical Science. Validity of the questionnaire "SQE standards" was confirmed by Cronbach's alpha 0.87 and the questionnaire "measurable standards of SQE" 0.88. Analysis was done using the software SPSS v.18 and Kruskal-Wallis, Mann-Whitney tests and Error bar chart. A total of 300 questionnaires were distributed and 209 questionnaires were collected (response rate = 69.6%). The highest average score of SQE standards was related to Tohid Hospital (148.8) and the lowest score to Sina hospital (137.5). The mean scores were close to each other (137.5 to 148.8), but standard deviation of scores had great differences that the highest standard deviation (SD) was in Besaat Hospital (30.7). Functionality of SQE standards in hospitals under study was confirmed (57.5% to 94%) and current status in the hospitals under study for different areas was assessed as above average (79.6%).

Keywords

Evaluation, In-Service Training, Staff Qualifications and Education

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1. Introduction

Today, in many countries, regardless of their size and wealth, health and how health care is provided is considered as an important issue [1]. Without presence of an effective evaluation system, growth and development of any system including health and treatment system lacks necessary concepts and tools for obtaining the goals of that system [2] [3]. Improvement of quality is one of the primary goals of medical professions and there are several instruments at local and international levels to achieve this goal, which usually focuses on clinical and organizational aspects. Strengthening the evaluation system is one of the most effective tools in order to achieve this purpose [4]. International Accreditation Standards of Joint Commission throughout the world are unique tools that are designed to measure the quality of patient care [5].

In our country, Health Ministry evaluates medical centers using its hospital standards of practice and recently by accreditation standards provided by the mentioned ministry and the rank of hospitals is determined based on this [6]-[8].

The purpose of accreditation in health organizations is improvement of service quality, increase of safety and decrease of risks to patients and staff, providing training and consultation for a organization of health services and reduction of costs by focusing on increasing the efficiency and effectiveness of service.

Given the emerging nature of accreditation in Iran and to avoid duplication and waste of resources, it should be tried to model other countries' system and act in line with international standards [9].

It should be noted that although preparing standard is time consuming and a difficult task, but it is of great importance. Perhaps the most important pillar protecting rights of people, patients, science, directors, employees and also integrity and co-thinking are existence of well-designed standards [10].

Manpower is the most important and most strategic resource of an organization. An organization, assumed to have the most developed equipments and facilities, and benefiting the most advanced technologies facilities, will not achieve complete success without presence of skilled and trained workforce [11].

21st century is the century of change in the nature of work and its implications. Thus, success of organizations in these conditions requires special requirements. Clearly this issue will be more obvious in organizations that are more complex and customer orientation is their basis. Therefore, the employees' being up to date in effective performance of activities is one of the most strategic hypotheses of organizational success [12]. A health care organization needs an appropriate set of skills and qualified individuals to accomplish its mission and meet needs of patients [11]. One of international hospital accreditation standards of Joint Commission is in-service training standards and professional skills (SQE). The purpose of formulating this standard is to guaranty accomplishing the organization's mission and meeting the health care needs of patients through an appropriate set of skills and qualified individuals. These standards have been organized based on the factors that are necessary for providing cares with high quality, so that they can be generalized for most of health care centers [11]. These important issues made us evaluate standards of in-service training and professional skills in hospitals affiliated Kurdistan University of Medical Sciences from point of view of managers to different levels.

2. Methods

Regarding purpose, this research is applied; and it is a descriptive-analytical cross-sectional study conducted in the year 2014. 10 hospitals affiliated by Kurdistan University of Medical Sciences were selected as population.

The main objective of this study was to estimate the mean scores of the SQE area and given that range of SQE score can vary from zero to 184 total points (92 questions with three choices and coding 0, 1, 2), so SD of SQE score is considered as 31 by 95% confidence and maximum error of estimation 3.5, sample size was calculated from the following formula:

$$\sigma = (184 - 0)/6 = 31$$

$$n = \frac{z^2 \times \sigma^2}{d^2}$$

$$n = \frac{1/96^2 \times 31^2}{12.25} = 300$$

Therefore, among 10 hospitals affiliated by Kurdistan University of Medical Sciences, 3 hospitals were in Sanandaj and the rest in other cities, 30 hospital managers, supervisors and head matron were interviewed.

In this study, two questionnaires were used to collect data. Both questionnaires were taken from standards of in-service training and professional skills (SQE) and the book international standard of Hospital Accreditation (JCI) [11].

In-service training and professional skills standards (SQE) include 5 domains, 23 standards and 92 measurable elements as follows:
- Planning (8 standards and 35 measurable elements);
- Familiarizing and education (6 standards and 24 measurable elements);
- Medical staff (3 standards and 13 measurable elements);
- Nursing staff (3 standards and 10 measurable elements);
- Other health specialists staff (3 standards and 10 measurable elements).

Since the SQE questionnaire (that is explained in the section of instruments and data collection) taken from the book "International accreditation standards for hospitals" [11] in order to eliminate any possible shortcomings in translation, comparison with the original version was performed by the researcher. After that, in order to assess content validity, the questionnaire was provided to a number of scholars and experts. After elimination of defects, the confirmed questionnaire was randomly distributed among 30 members of the target population.

After collecting the first questionnaire, reliability was calculated using Cronbach's alpha. The alpha value was equal to 0.87. The same steps were repeated for the second questionnaire and reliability of this questionnaire was calculated using Cronbach's alpha. The alpha value was equal to 0.88. After ensuring applicability of all standards through the first questionnaire consisting of 23 questions, the second questionnaire consisting of 73 questions (measurable elements) with three options "Yes, No and to some extent" were distributed among 300 individuals.

In this study, in order to analyze the data, descriptive and inferential methods using the software SPSS v.18 were used. Kruskal-Wallis test was used for variables with three or more groups and Mann-Whitney test was used for variables with two groups. Error bar charts were used to display statistical information.

3. Findings

From 209 questionnaires collected, 149 (71.5%) individuals were from nursing department and others included management and hospital administration, department administration of heads of staffing and administrative affairs (**Table 1**).

5 hospitals were had over 100 beds and 5 hospitals had fewer than 100 beds. 13.9% of participants had education degree above bachelor.

Working experience of 27 individuals (12.9%) was less than 10 years, and 141 (67.5%) of those between 10 and 20 years and 41 (19.6%) ones over 20 years.

The results obtained from distributing the first questionnaire among managers and supervisors of hospitals indicated that all SQE standards were applicable and fairly applicable in the range of 57.5% - 93.4% (**Table 2**).

A total of 300 questionnaires distributed, 209 questionnaires (response rate = 69.6%) were collected. Besaat Hospital had the highest response rate and Ghods Hospital had the lowest (**Table 3**).

Table 1. Distribution of frequency and percentage of position of staff who completed the questionnaire.

Position (organizational posts)	Frequency	Percentage
Manager and heads of hospital	15	7.1
Matron	10	4.8
Head of department	7	3.2
Supervisors	51	24.5
Head of unit	38	18.2
Head nurse	88	42.2
Total	209	100

Table 2. Distribution of frequency and percentage of education and working experience of staff that completed the questionnaire.

Educational level	Frequency	Percentage
PhD	29	13.9
Bachelor	180	86.1
Total	209	100

Working experience	Frequency	Percentage
<10 years	27	12.9
10 - 20 years	141	67.5
>20 years	41	19.6
Total	209	100

Table 3. Mean and standard deviation of total SQE score in medical sciences hospitals of Kurdistan in 2014.

Hospital	Number	Score mean	Standard deviation	Median
Besaat (Sanandaj)	25	146.3	30.7	156
Tohid (Sanandaj)	24	148.8	21.8	155
Ghods (Sanandaj)	17	146.6	21.3	148
Sina (Kamyaran)	15	137.5	15.8	134
Imam Khomeini (Saghez)	22	144.3	16.9	142
Beheshti (Ghorveh)	23	147.8	13.4	155
Imam Hossein (Bijar)	23	146.2	17.1	153.5
Salahaddin Ayubi (Baneh)	20	148.7	26.1	152
Imam Khomeini (Divandareh)	18	148.3	19.4	152.5
Fajr (Marivan)	22	145.9	16.5	155
Total	209	146.6	20.4	151

According to **Table 3**, the highest average of SQE Standard score belonged to Tohid Hospital (148.8) and the lowest one to Sina hospital (137.5).

Considering the table it is found that mean of scores are close to each other, but there are a lot of differences in standard deviation of scores; the highest SD is related to Besaat Hospital (30.7). According to Kolmogorov-Smirnov test, it was revealed that total standard score and also score of each area of standard were not normal and therefore the Kruskal-Wallis and Mann-Whitney tests were used for comparing median of score.

In planning area the highest score was related to Salahaddin Ayubi hospital (55.7) and then Tohid hospital (55.3) and the lowest mean scores belonged to Sina hospital (48.2). Also considering results of the Kruskal-Wallis test, the median of scores in hospitals had significant difference with each other ($P = 0.048$) and no significant difference was observed in work experience groups ($P = 0.841$).

According to the Mann-Whitney test to compare median in variables of the two groups, no significant differences were observed between median of scores of bed groups ($P = 0.408$), position of individuals ($P = 0.556$) and education ($P = 0.129$).

In area of familiarizing (justification) and education, the highest mean score was related to the hospitals Besaat (41.3) and Imam Khomeini of Diwandareh (41.3) and the lowest score belonged to Sina hospital (38.6).

According to the results of the Kruskal-Wallis test, median of scores in this area in the hospitals studied ($P = 0.267$) and also in work experience groups ($P = 0.647$) did not have significant difference with each other. Regarding groups of bed ($P = 0.272$), position of people ($P = 0.337$) and education ($P = 0.972$), no significant difference was observed in the median of groups according to the Mann-Whitney test.

In area of medical staff, the highest mean score was related to Salahaddin Ayubi hospital (20.7) and then Fajr Hospital (20.1) and the lowest score belonged to Sina hospital (17.6). Kruskal-Wallis test results showed that the median scores in this area in hospitals studied had a significant difference ($P = 0.040$). In relation to the position groups ($P = 0.272$), bed ($P = 0.337$) and education ($P = 0 .972$) according to the Mann-Whitney test , no significant difference was observed in median of groups and also in groups of work experience , according to Kruskal-Wallis test, no significant difference was observed ($P = 0.915$).

In the area of nursing staff, the highest mean score was related to Imam Hussain hospital (17.9) and the lowest to Tohid Hospital (17.1). According to Kruskal-Wallis test, the median scores in this area hospitals studied had no significant difference ($P = 0.368$). In relation to position groups ($P = 0.229$), bed ($P = 0.830$), education ($P = 0.230$), according to the Mann-Whitney test no significant difference was observed in the median of groups. Also, in work experience groups, according to the Kruskal-Wallis test, there was no significant difference ($P = 0.947$).

In the areas of other health specialist staff on, the highest mean score was related to Ghods hospital (17.7) and the lowest mean scores to Besaat Hospital (16.3). According to Kruskal-Wallis test, the median scores in this area in the hospitals studied ($P = 0/304$) and also in work experience groups ($P = 0.306$) had no significant difference. In relation to position groups ($P = 0.245$), bed ($P = 0.390$), education (147, $P = 0.147$) no significant difference was observed according to the Mann-Whitney test.

4. Discussion

Evaluation of Performance is a key element in the management of health and treatment systems. Today publishing performance results of programs in order to increase public awareness and information of officials in health and treatment system, change of pattern in selecting organizations providing health care, and finally improvement of quality is considered throughout the world. Systematic review studies have investigated the effect of publishing results of heath and treatment sector performance on care, safety and attention to patients [13]-[16].

Joint Commission standards are classified in two patient-oriented and organization-based groups [11]. Most of the studies done are on patient-centered standards.

In the Master Thesis of Amozegar (2010) that also examined the standards of quality improvement and patient safety (QPS), in Tehran University of Medical Sciences, score related to possibility of implementing QPS standards in hospitals were different. He also reported QPS functionality in Ziaeian hospital as 84.2% and evaluated hospitals in Tehran above average in this regard. This standard in Medical Sciences hospitals of Tehran University has been applicable and relatively applicable in the range between 62.5% and 100% [17].

Similar to our study, results of the research by Farzianpour *et al.* also showed score of possibility of implementing ACC standards in selected hospitals of Tehran University of Medical Sciences were different with each other and the maximum mean score of ACC standard was reported in Ziaeian hospital and after that in Baharloo hospital. This standard in Medical Sciences hospitals of Tehran University has been applicable and relatively applicable in the range between 87.7% and 100% [18]. In the study by Abbasi *et al.* entitled preparedness of hospitals having system of managing quality in Isfahan based on functional model of validation standard of International Joint Commission, by measuring standards of SQE, Alzahra hospital has obtained 80.6 of scores in area of SQE standards [19]. Tourani reported readiness of hospitals under study in Tehran about 61 percent [20]. Based on the study by Ahmadi *et al.*, the results obtained from matching hospital standards of health ministry with patient- oriented standards of the Joint Commission suggest that the Ministry of Health has not paid attention to patients and their families as the foundation in formulating standards.

Matching results showed that although standards of Health Ministry were higher in terms of quantity compared to standards of the Joint Commission, but has failed to cover around 50% of that [21]. Considering the fact that current status of implementation of SQE standards in hospitals of Kurdistan University of Medical Sciences is above 70% of the scores, it can be said that the standards of Health Ministry have almost covered this area.

In studies conducted in Tehran University of Medical Sciences, Hasheminejad, Shahid Motahari, and Shahid Rajai on the standard of care of patients (COP), access of patients (AOP) the average compliance of this standard is 60.8% (the average for all three hospitals) [22] [23].

5. Conclusion

Our research and other studies showed that the most important factors affecting the scores are the establishment

of excellence models, quality management system and setting up clinical governance unit and accreditation of Health Ministry. Given that the results reflect very good impact of accreditation program on score of in-service training and professional skills standards, this can be the best method for Health ministry to use national Standards since we need to make progress towards international standards and take step for continuous quality improvement. Therefore, more attention to matching existing standards of health ministry with international standards in all aspects would be reasonable.

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Limitations of the Study

-Possible limitations include lack of cooperation between hospital and personnel that was eliminated through required coordination and official correspondence.

-little research have been performed on SQE standards in national and international level, so the researcher has been limited, compared with other studies.

References

[1] Woods, M.S. (2010) Effective Handoff Communication, Part 2: Standardizing Processes throughout Your Organization. Joint Commission Perspectives on Patient Safety, **10**, 3-5.

[2] Farzianpour, F., Rahimi Fouroshani, A., Beyzaiee, S. and Hosseini, S. (2012) Evaluation of the Selfesteem Managers in Clinical Wards of Hospitals Affiliated to Tehran University of Medical Sciences. *World Applied Sciences Journal*, **16**, 686-692.

[3] Emami Razavi, H. and Mohaghegh, M. (2008) Hospital Accreditation Standards. Seda Publication, Tehran, Iran. (In Persian)

[4] Ministry of Health (2007) Guideline and Evaluation Laws for General Hospitals. Ministry of Health, Evaluation Office Publication, Tehran. (In Persian)

[5] Farzianpour, F., Roholah Askari, R., Torabipoor Hamedani, A., Khorshidi, G.H. and Amirifar, S. (2011) Accreditation of Emergency Department at a Teaching Hospital in Tehran University of Medical Sciences in 2010. *American Journal of Economics and Business Administration*, **3**, 498-505. http://dx.doi.org/10.3844/ajebasp.2011.498.505

[6] Farzianpour, F., Hosseini, S., Mirsepasi, A., Honary, H., Hosseini, S.S. and Hosseini, S. (2013) Internal Evaluation of the Department of Environmental Health Science and Engineering. *American Journal of Applied Sciences*, **10**, 58-63. http://dx.doi.org/10.3844/ajassp.2013.58.63

[7] Farzianpour, F., Emami, A.H., Davari-Tanha, F., Hosseini, S. and Farzanehnejad, A.R. (2010) Educational Programs' Quality Assessment Based on Graduates' Comments. *IRCMJ*, **12**, 302-307.

[8] Farzianpour, F., Godarzi, L., Torabipor Hamedani, A., Askari, R. and Hosseini, S.S.H. (2013) Evaluation of Customer Relationship Management in a Teaching Hospital. *American Journal of Applied Sciences*, **10**, 344-352. http://dx.doi.org/10.3844/ajassp.2013.344.352

[9] Joint Commission Perspectives (2011) Improving America's Hospitals—The Joint Commission's Annual Report on Quality and Safety. www.jointcommission.org

[10] (2011) The Joint Commission Accreditation Hospital. Hospital National Patient Safety Goals. http://www.jcrinc.com/Accreditation-Manuals/HS11/1245/

[11] Farzianpour, F., Nourijelyani, K., Zandiyan, H., Zahirian Moghadam, T. and Zahirian Moghadam, S. (2014) Accreditation Maternity and Obstetric Services (MOS), Based on the Accreditation Standards of the Joint Commission International (JCI). *Health Journal*, **6**, 2453-2460. http://dx.doi.org/10.4236/health.2014.618282

[12] Farzianpour, F., Hosseini, S., Mortezagholi, S. and Mehrbany, K.B. (2014) Accreditation of Patient Family Education (PFE) in the Teaching Hospitals of Tehran University of Medical Sciences from the Nurses View. *Pensee Journal*, **76**, 182-193.

[13] Farzianpour, F., Hosseini, S.H., Arani, S.S. and Bakhtiyari, A. (2014) Evaluation of International Standards of Patient and Family Rights (PFR) from Chief Nurses' Point of View in Hospitals of Iran. *Pensee Journal*, **76**, 372-382.

[14] Gagliardi, A.R., Majewski, C., Victor, J.C., *et al.* (2010) Quality Improvement Capacity: A Survey of Hospital Quality Managers. *Quality and Safety in Health Care*, **19**, 27-30. http://dx.doi.org/10.1136/qshc.2008.029967

[15] Mohammad Pour, A., Mehdi Pour, Y. and Rahday, K.A. (2008) Comparison of Patient and Family Education Standards of the Iranian Ministry of Health, Joint Commission on Accreditation of Health Care Centers of America. *Health Information Management*, **6**, 113-122.

[16] Farzianpour, F., Aghababa, S., Delgoshaei, B. and Haghgoo, M. (2011) Performance Evaluation a Teaching Hospital Affiliated to Tehran University of Medical Sciences Based on Baldrige Excellence Model. *American Journal of Economics and Business Administration*, **3**, 277-281. http://dx.doi.org/10.3844/ajebasp.2011.272.276

[17] Farzianpour, F., Arab, M., Amoozagar, S., Fouroshani, A.R., Rashidian, A., Moghadam, M.N. and Hosseini, S. (2011) Evaluation of International Standards of Quality Improvement and Patient Safety (QPS) in Hospitals of Tehran University of Medical Sciences (TUMS) from the Managers' Point of View. *World Applied Sciences Journal*, **15**, 647-653.

[18] Farzianpour, F., Geray, S., Fouroshani, A.R., Arab, M. and Hosseini, S.H. (2013) Evaluation of International Standards Access to Care and Continuity of Care (ACC) in Hospital of Tehran University of Medical Sciences. *Heath*, **5**, 2110-2115.

[19] Abbasi, S., Tavakoli, N. and Moslehi, M. (2012) Readiness of Hospitals with Quality Management Systems Based on Joint Commission on Accreditation Standards. *Health Information Management*, **9**, 1-11.

[20] Bakhateiyari, M., Farzianpour, F., Arab, M., Foroushani, A., *et al.* (2015) Evaluating the Performance of Managers of Tehran University of Medical Sciences' Obstetrics and Gynecology Hospitals from the Viewpoint of Personnel. *Journal of Service Science and Management*, **8**, 209-215.

[21] Farzianpour, F., Mohammad, K., Malekafazali, H. and Nadjat, S. (2014) Determining the Quality of Management and Structural Elements of the Epidemiology and Biostatistics Department in Tehran University of Medical Sciences. *Journal of Service Science and Management*, **7**, 430-439. http://dx.doi.org/10.4236/jssm.2014.76040

[22] Khodayari Zarnqy, R., Turanian, S., Gaderi, A., Salehi, M. and Jafari, H. (2001) Assess the Capabilities of the Selected Educational Hospitals of Tehran University of Medical Sciences in Attracting Medical Tourists by Standards of Patient Centered of Joint Commission. *International Journal of Hospital*, **9**, 51-60.

[23] Farzianpour, F., Kalantari, E., Fouroshani, A.R. and Alirezaei, S. (2014) Assessment of Patient (AOP) Standards in Teaching Hospitals in Iran. *Pensee Journal*, **76**, 119-124.