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Research Article

EXTERNAL EVALUATION OF FOUR HOSPITALS ACCORDING TO HEALTH CARE MANAGEMENT STANDARDS

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ABSTRACT

The compliances with the standards are regularly evaluated by external assessments. The aim of this study was to compare the accreditation of four hospitals in according to JCI standards. This was a cross-sectional study to evaluate accreditation of four hospitals. Based on JCI standards, six checklists were applied to check the compliance with standards on infection prevention, quality improvement, facility management, leadership and governance, staff qualifications and education, and communication and information management. Six inspectors were trained to carry out the assessments in the four hospitals. The measured scales were transformed to percentage to enable easy comparison. The data was analyzed by SPSS 14 (SPSS Inc., Chicago, IL).Based on results Shariati hospital demonstrated the lowest mean preparation level in all indices as follow: PCI (70%), QPS (51%), FMS (50%), GLD (60%), MCI (54%) and SQE (51%). Beheshti hospital showed the highest mean preparation level in PCI (78%) and FMS (66%) whereas Zahra hospital revealed the best preparation in GLD (80%), MCI (78%), QPS (66.5%) and SQE (81%) indices. There was no significant difference in various indices but SQE (P=0.04) among the four hospitals. According to JCI standards, none of the hospitals were completely prepared to present the best possible health care management system.

Key Words: *Infection Prevention, Quality Improvement, Facility Management, Leadership and Governance, Staff Qualifications and Education, and Communication and Information Management.*

INTRODUCTION

Many countries have started to accredit the health care organizations (Salmon *et al.,* 2003; Shaw *et al.,* 2010; Wocher, 1999; Lee, 2012; Huang, 1995; O'Tarpey, 1995 and Wilson, 1983).There are some published standards used for external assessments of health care organizations (Groene *et al.,* 2008 and 2010; Arah *et al.,* 2006; Bell *et al.,* 1999; *Joint Commission*, 2011). Although the compliances with the standards are increased before external assessments, it is not clear whether this pattern will end in better clinical efficacy (Seeorn, 2005; Ito *et al.,* 2005; Hinchcliff *et al.,* 2012).Accreditation is a multi-factorial issue. It depends on cultures, laws, resources, environment and definition of the end points (WHO, 2003; Meyer *et al.,* 2001; Benn *et al.,* 2009).

Health care organization management requires attention to so many factors such as infection control and prevention, managing quality improvement, facility management, leadership and governance, staff education, and communication and information management(Shaw *et al.,* 2010; Hinchcliff *et al.,* 2012; Benn *et al.,* 2009). Improving health care processes mandates organized planning, measurement and leadership (Ito *et al.,* 2005; Braithwaite *et al.,* 2010). Then; many departments must be involved in an efficient framework to achieve maximum benefits. Accreditation programs in our country have been started recently to assess the primary health care units (Mossalaeie, 2009; Yousefy, 2009).

The aim of the current study was to accredit and compare four hospitals in the second largest city of country according to the Joint Commission International (JCI) standards.

MATERIALS AND METHODS

Design and Research Population

A cross-sectional study was carried out to evaluate accreditation of four hospitals. The administrative approval was obtained from the related authorities of the hospital to conduct the study within each hospital.

Measurement Tools

Six checklists were selected for compliance with standards on infection prevention, quality improvement, facility management, leadership and governance, staff qualifications and education, and communication and information management. The monitoring indicators were among those frameworks of accreditation standards selected by Ministry of Health, Treatment and Education for accreditation and follow-up re-accreditation of the hospitals. All measures were driven from JCI standards (Braun, 2008). They were translated and their validity and reliability were evaluated by Ministry of Health, Treatment and Education. Each checklist was filled out by an inspector. They were trained to properly use the measurement tools. Six inspectors carried out all assessments in the four hospitals. A supervisor supervised the inspectors during data collection to improve the quality of data collection.

Evaluated Indices

The selected output measures were extracted from section II of JCI standards, "Health Care Organization Management Standards". The core summary of the covered indices included the role of organization leaders in planning and monitoring the patients' quality of life and safety, planning new modified systems and processes towards better quality of care, defining the indicators of management of monitoring, structure, process and the end results, data gathering and analysis by experts, defined processes to recognize and manage disasters, proper assessment during unwanted changes, using defined processes to recognize and evaluate high probable incidents, monitoring the improvement of quality and safety of presented services, execution of safety regulations according to organization requirements, defining and execution of continuous plans to recognize and decrease unwanted incidents, clear definition of responsibilities of supervising committee, CEO responsibility for organization performance and execution of organization rules and regulations, clear definition of organization goals and related plans by leaders of organization, appropriate execution of plans by managers of clinical services, physicians and nurses, management of presented services by suitable educated individuals, presence of ethical administrative structure to ensure the patients' rights, supervision of all infection prevention and control services including education, plans and processes by suitable educated individuals, presence and execution of practical rules, guides and accepted methods based on new scientific preventive science, executions of infection control programs in all sections of hospitals, executions of educational programs for physicians, nurses, staff and families to control infections, knowledge about presented services by hospital and the methods of access of patients and families to the services, proper transfer of patients' health care information to the corresponding nurses and physicians during 24 hours of the day and 7 days of the week, planning and programming of processes related to information management towards fulfilling the information gaps, patient information privacy, preparation and maintenance of clinical profiles of patients, execution of the regulations of inspections of buildings and hardware, supervision of execution of risk management plans of patients' environment, planning and execution of physical environment safety and protection, planning, execution and documentation of the results of inspection, trial and maintenance of medical equipment.

Data Analysis

All collected data was coded and entered in SPSS 14 (SPSS Inc., Chicago, IL). All scales were transformed to percentage scale to enable easy comparison.

RESULTS

Assessment of indices of prevention and control of infections (PCI) according to JCI standards revealed that the amount of preparation on the first four indices (program leadership and coordination) was about

75% in all hospitals. These indices included as follow: One or more individuals oversee all infection prevention and control activities. This individual is qualified in infection prevention and control practices through education, training, experience, or certification (PCI.1), There is a designated coordination mechanism for all infection prevention and control activities that involves physicians, nurses, and others as based on the size and complexity of the organization (PCI.2), The infection prevention and control program is based on current scientific knowledge, accepted practice guidelines, applicable laws and regulations, and standards for sanitation and cleanliness (PCI.3), and The organization's leaders provide adequate resources to support the infection prevention and control program (PCI.4).

Table 1: The amounts of preparation of hospitals in quality improvement and patient safety (QPS) according to JCI standards.

QPS	Index	Hospitals				P Value
		Shariati	Gharazi	Zahra	Beheshti	
1	"Those responsible for governing and managing the organization participate in planning and measuring A quality improvement and patient safety program"	58.25	58.25	75	71	
2	"The organization designs new and modified systems and processes according to quality improvement principles"	62.5	70	62.5	75	
3	"The organization's leaders identify key measures in the organization's structures, processes, and outcomes to be used in the organization wide quality improvement and patient safety plan"	51	64.25	68.5	52.25	
4	"Individuals with appropriate experience, knowledge, and skills systematically aggregate and analyze data in the organization"	62.5	84	83.25	66.5	
6	"The organization uses a defined process for identifying and managing sentinel events"	50	25	25	25	
7	"Data are analyzed when undesirable trends and variation are evident from the data"	50	75	75	62.5	
8	"The organization uses a defined process for the identification and analysis of near-miss events"	50	25	75	25	
9	"Improvement in quality and safety is achieved and sustained"	25	50	75	75	
10	"Improvement and safety activities are undertaken for the priority areas identified by the organization's leaders"	50	75	100	75	
11	"An ongoing program of risk management is used to identify and to reduce unanticipated adverse events and other safety risks to patients and staff"	50	50	25	75	
	Mean	**51**	**57.6**	**66.4**	**66.2**	**0.4**

Focus of the program (indices PCI.5 to PCI.7), isolation procedures (PCI.8), barrier techniques and hand hygiene (PCI.9) and integration of the program with quality improvement and patient safety (PCI.10) were maximum (100%) in Beheshti hospital whereas they were about 75% in all other hospitals. The index of providing "education on infection prevention and control practices to staff, physicians, patients, families, and other caregivers when indicated by their involvement in care" (PCI.11) was complete in 87.5% of instances in all hospitals. There was no significant difference in various PCI indices among the four hospitals. Different evaluated output measures of quality improvement and patient safety (QPS), governance, leadership and direction (GLD) and staff qualifications and education (SQE) according to JCI standards are presented in Tables 1, 2 and 3 respectively.

Table 2: The amounts of preparation of hospitals in Governance, Leadership and Direction (GLD) according to JCI standards.

GLD	Index	Hospitals				P
		Shariati	Gharazi	Zahra	Beheshti	Value
1	"Governance responsibilities and accountabilities are described in bylaws, policies and procedures, or similar documents that guide how they are to be carried out"	64.25	75	82	64.25	
2	"A senior manager or director is responsible for operating the organization and complying with applicable laws and regulations"	75	75	100	75	
3	"The organization's leaders are identified and are collectively responsible for defining the organization's mission and creating the plans and policies needed to fulfill the mission"	60.5	67.75	78.5	60.5	
4	"Medical, nursing, and other leaders of clinical services plan and implement an effective organizational structure to support their responsibilities and authority"	50	50	75	75	
5	"One or more qualified individuals provide direction for each department or service in the organization"	50	67.75	71.25	69.5	
6	"The organization establishes a framework for ethical management that ensures that patient care is provided within business, financial, ethical, and legal norms and that protects patients and their rights"	58.25	75	75	70.75	
	Mean	**59.6**	**68.4**	**80.3**	**69.2**	**0.4**

Evaluation of preparation of indices of facility management and safety (FMS) according to JCI standards illustrated the following findings: FMS.1, "The organization complies with relevant laws, regulations, and facility inspection requirements" was best executed in Zahra and Gharazi hospitals (75%) whereas worst executed in Shariati and Beheshti hospitals (50%). FMS.2, "The organization develops and maintains a written plan(s) describing the processes to manage risks to patients, families, visitors, and staff" and FMS.3, "One or more qualified individuals oversee the planning and implementation of the program to manage the risks in the care environment" earned the highest levels of execution at Beheshti hospital by 62.5% and the lowest one at Shariati and Gharazi hospitals by 37.5%. Safety and security of physical

environment (FMS.4) had the best rate of 66.5% at Beheshti and Zahra hospitals whereas it had the worst rate of 50% at Shariati hospital. The index of planning and implementing a program for inspection, testing and maintenance of medical equipment and documentation of the results (FMS.8) showed the best condition at Gharazi hospital (58%) and the worst condition at Beheshti hospital (37.5%). No significant difference in FMS indices among the four hospitals was seen.

Different indices on management of communication and information (MCI) were evaluated according to JCI standards. Communication with the community, patients and families (MCI.1 to MCI.3) was highest in Zahra hospital by 75% and lowest in Gharazi and Shariati hospitals by 50%. Indices of communication between practitioners within and outside of the organization (MCI.4 to MCI.8) were met in 75% of instances at Beheshti hospital whereas it was around 50% in all other hospitals. 75%, 50% and 50% of leadership and planning indices (MCI.9 to MCI.18) were complete at Zahra, Shariati and Gharazi hospitals, respectively. Patient clinical record index (MCI.19) was appropriately executed in 75% of instances in Zahra and Gharazi hospitals whereas it was complete in 45% of records in Beheshti hospital. Finally, aggregate data and information (MCI.20 and MCI.21) had the best condition at Gharazi hospital by 91.5% and the worst condition at Shariati hospital by 83%. Overall, there was no significant difference among the four hospitals in various MCI indices.

Table 3: The amounts of preparation of hospitals in Staff Qualifications and Education (SQE) according to JCI standards.

SQE	Index	Hospitals				P Value
		Shariati	Gharazi	Zahra	Beheshti	
1	"Organization leaders define the desired education, skills, knowledge, and other requirements of all staff members"	87.5	87.5	87.5	75	
2	"Organization leaders develop and implement processes for recruiting, evaluating, and appointing staff as well as other related procedures identified by the organization"	50	50	75	75	
3	"The organization uses a defined process to ensure that clinical staff knowledge and skills are consistent with patient needs"	25	100	100	75	
4	"The organization uses a defined process to ensure that nonclinical staff knowledge and skills are consistent with organization needs and the requirements of the position"	25	75	75	75	
5	"There is documented personnel information for each staff member"	75	100	100	75	
6	"A staffing plan for the organization, developed collaboratively by the leaders, identifies the number, types, and desired qualifications of staff"	50	62.5	100	62.5	
7	"All clinical and nonclinical staff members are oriented to the organization, the department, or unit to which they are assigned and to their specific job responsibilities at appointment to the staff"	50	50	50	75	
8	"Each staff member receives ongoing in-service and other education and training to maintain or to advance his or her skills and knowledge"	75	75	82.5	68.5	

9	"The organization has an effective process for gathering, verifying, and evaluating the credentials (license, education, training, competence, and experience) of those medical staff permitted to provide patient care without supervision"	100	100	100	50	
10	"The organization has a standardized objective, evidence-based procedure to authorize all medical staff members to admit and to treat patients and to provide other clinical services consistent with their qualifications"	25	100	100	25	
11	"The organization uses an ongoing standardized process to evaluate the quality and safety of the patient services provided by each medical staff member"	50	75	75	62.5	
12	"The organization has an effective process to gather, to verify, and to evaluate the nursing staff 's credentials (license, education, training, and experience)"	50	100	100	75	
13	"The organization has a standardized procedure to identify job responsibilities and to make clinical work assignments based on the nursing staff member's credentials and any regulatory requirements"	50	75	75	75	
14	"The organization has a standardized procedure for nursing staff participation in the organization's quality improvement activities, including evaluating individual performance when indicated"	25	50	50	50	
15	"The organization has a standardized procedure to gather, to verify, and to evaluate other health professional staff members' credentials (license, education, training, and experience)"	50	100	100	50	
16	"The organization has a standardized procedure to identify job responsibilities and to make clinical work assignments based on other health professional staff members' credentials and any regulatory requirements"	50	75	75	50	
17	"The organization has an effective process for other health professional staff members' participation in the organization's quality improvement activities"	25	25	25	50	
	Mean	**50.7**	**76.5**	**80.6**	**62.9**	**0.04**

Beheshti hospital was prepared more than the other three hospitals in PCI, QPS, and FMS by 78%, 66% and 66%, respectively, whereas Zahra hospital revealed the best preparation in GLD, MCI and SQE indices by 80%, 78% and 81%, respectively. Shariati hospital demonstrated the worst preparation in all

indices as follow: PCI (70%), QPS (51%), FMS (50%), GLD (60%), MCI (54%) and SQE (51%). There was no significant difference in various indices but SQE (P=0.04) among the four hospitals

DISCUSSION

All fields of "Health Care Organization Management Standards" of JCI accreditation system were applied in this study to compare the four hospitals. The study demonstrated that the overall patterns of prevention and control of infections, quality improvement and patient safety, facility management and safety governance, leadership and direction, and management of communication and information were not significantly different among the four hospitals although slight dissimilarities were observed. Health care requirements, health resources and diversity of the health care services might explain some of the recorded differences (Braun, 2008). Out of the four evaluated hospitals, Zahra and Shariati are teaching general hospitals whereas Beheshti hospital is a teaching women's hospital. Examples of indices with recorded slight differences among the four hospitals were as follow: having "a standardized objective, evidence-based procedure to authorize all medical staff members to admit and to treat patients and to provide other clinical services consistent with their qualifications", "using a defined process to ensure that clinical staff knowledge and skills are consistent with patient needs", using a defined process for the identification and analysis of near-miss events", maintaining "a written plan describing the processes to manage risks to patients, families, visitors, and staff" and having "qualified individuals oversee the planning and implementation of the program to manage the risks in the care environment".

Overall, none of the four evaluated hospitals was completely prepared in all of the seven fields of the evaluated management standards. The current study was definitely one step forward towards hospital accreditation in Iran. There were only two published studies in Pubmed on health care accreditation carried out in Iran; one on medical universities and the other on laboratory quality (Mossalaeie, 2009; Yousefy, 2009).

Nothing has been published about the effects of such accreditation programs on progress of quality of health care services in our country. In other parts of the world, the evidence has not been very persuasive that the process of accreditation advances the qualities of health care services. This could be due to the complexity and multidimensionality of the issue (Bell *et al.*, 1999; Seeorn, 2005; Hinchcliff *et al.*, 2012; Greenfield *et al.*, 2008).

South African research evaluated the impact of accreditation on quality of care in hospital and showed no improvement in teamwork and participations of nurses after accreditation. A review of similar studies demonstrated the least changes in medical staff subsequent to accreditation (Duckett, 1983). Further studies are needed to assess the short and long term impacts of such accreditation programs on improvement of quality of health care services in Iran.

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