APPLICATION OF THE ENVIRONMENTAL HEALTH STANDARDS AS A PRE-REQUISITE FOR THE ACCREDITATION OF THE HEALTH CARE INSTITUTIONS

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ABSTRACT

Accreditation in health care is an integrated process that includes a set of steps by which the health institution is assessed to see if it meets a set of criteria and grounds associated with quality. The quality system in the field of health care is very private and the most important feature of this privacy is that, it deals with humans whether they are service providers or beneficiaries of this service, so many international organizations have started in establishing rules for the accreditation systems of health-care institutions, focusing primarily on the patient benefiting from the service, as well as the technical, administrative and technological aspects of the service delivery systems healthcare. The aim of this study is to investigate the impact of hospital accreditation on the quality of health services delivery, from the point of view of the health service providers and recipients of the service. This study is investigated the physicians, nurses, others and health perceptions of the impact of accreditation on quality of health services.

The researcher has used the Descriptive Statistics (SPSS) statistical analysis software; proper statistical tests had been used for this study, which provides quantitative description of the individuals' persuasions, attitudes and opinions as well as percentages, arithmetic means, and standard deviation for hypothesis testing. This study relies on the survey (accreditation instruments tool) as an essential tool for hospitals that successfully passed accreditation

foundation level. The survey tool composed of two parts: the first part is related to the demographic characteristics of the study sample, and the second part is related to the impact of the accreditation system on improving and developing the qualitative level of healthcare services in the hospital. The responses have been categorized into five levels on a Likert scale, starting from 1 (strongly agree) to 5 (strongly disagree).

The study identifies the methods of achieving TQM through the application of the accreditation criteria in one of the hospital of the Egyptian Ministry of Health. The study surveyed 500 clients of the health care services recipients and 400 service providers. A total of (400) questionnaires were distributed to the service providers, (560) for the service recipients and (500) questionnaires were retrieved from the service recipients and (360) and staff. The results of this study have shown that health accreditation leads to the improvement of the quality of the provided healthcare services, from the point of view of both recipients of the health service and health providing services. Accreditations are necessary to be applied to health care organizations and systems and are designed to support and sustain improvement of patient care and environmental safety.

Keywords: Accreditation, Quality improvement, Key Performance Indicators (KPIs). Socio-demographic characteristics, Environmental health

INTRODUCTION

Hospital accreditation has been defined as "A self-assessment and external peer assessment process used by health care organizations to accurately assess their level of performance in relation to established standards and to implement ways to continuously improvement" (Nandraj *et.al.*, 2001). Accreditation/certification programs are appropriate for health organizations as the patient centered, and focus on care and patient's treatment (Zarkin, Dunlap & Homsi, 2006). The ISQua International Principles have been developed for the assessment and accreditation of the health and social care standards of external evaluation organizations, including accreditation, certification, inspection and standards setting

organizations (Greenfield, 2018). A lot of Studies were performed on Patients, and fellow health care organizations recognized as a symbol as a testament to commitment to providing the highest quality of health care and represents the apex of patient safety and quality of care (Shaw & Kalo , 2002). The process of accreditation is designed to create a culture of safety and quality within an organization that strives to continually improve patient care processes and results (Goldstein, 2009).

This study assessed the process of TQM implementation of Total Quality Management for the organization future development. Key Performance Indicators (KPIs) or Key Success Indicators (KSIs) help the organization identify and measure its progress and measuring its progress towards its objectives and goals (Williams, 2006).

The PDCA (Plan-Do-Check-Act) cycle is one of the most commonly used tools for structuring the work of an organization nowadays, and it has found its way to numerous different industries and fields of work. It's also a field that relies on continuous improvement and a constant reevaluation of the practices applied in day to day work, meaning that a system like the PDCA cycle (Al-Qahtani1, 2011). Study recommends address the deficiencies and pave the way towards international accreditation and support work in the way it is done.

AIM OF THE STUDY

The aim of this study was to investigate the impact of hospital accreditation on the quality of delivery of health services, from the point of view of health service providers and services recipients.

SUBJECTS AND METHODS

This study investigated the perceptions of both employees and health recipients toward the impact of Hospital's Accreditation on healthcare in public hospital. The research period is for the academic year 2011-2015 and limited to a government hospital in Cairo. The study was composed of two parts: the first part is related to the demographic characteristics of the study sample, and the second part is related to the impact of the accreditation system on improving and developing the qualitative level of healthcare services in hospitals. The responses have been categorized into five levels on a Likert scale, starting from 1 (strongly agree) to 5 (strongly disagree). Statistic Package for Social Sciences (SPSS) analysis software (V. 23) has also been used for this study, as well as the proper statistical tests such as repetitions, percentages, arithmetic means, and standard deviation for hypotheses testing. The results of this study have shown that health accreditation leads to the improvement of the quality of the provided healthcare services; also there is a need to assess quality based on patient and staff perceptions through KPIs. The respondents reported high positive impact of hospital's Accreditation on patient safety with overall score 4.17 out of 5 points in rating scale and most of their answers were between agree to strong agree.

A cross sectional study was conducted at non-accredited hospital. A descriptive cross sectional survey study, in which face to face, structured interviews were conducted from 2011 to Oct. 2015. Using two sets of interviewing questionnaires shaped to include: staff and Patients; who are delivering and receiving services, a questionnaire was used to assess patients'

and staff's perceptions of the quality of health care provided. After taking official permission letters from authorized to conducting study, the researchers distribute and surveyed (500) clients of the health care services recipients and (360) service providers. A total of (400) questionnaires were distributed to the service providers, (560) for the service recipients, and (500) questionnaires were retrieved from the service recipients and (360) from staff. The Respondents' Rights and Research Ethics had been respected and considered during all study phases. The research instrument was self-administered questionnaires designed in manner to determine health perception on the impact of hospital accreditation. Questionnaire used in this study consisted of two parts; the first part covered demographic data of participated staff and health recipients; the second part composed of eight dimensions about impact of hospital accreditation and dimension consist of items, c compare the current process and compliance with the expectations standards and current performances.

The study sample included hospital staff from doctors, nurses, technicians, administrators, service recipients and patients. Besides the study accredited as stated in the accreditation criteria for hospitals (foundation level), ISQUA 2009 on total quality management. The assessment will provide information that can be used in determining what actions are necessary to eliminate the gaps between organization's current process and the process desired to achieve accreditation. The standards focus on organization activities required to ensure that clinical and managerial systems and processes are designed, coordinated, and monitored to facilitate the delivery of effective patient care services. The study results would encourage

public healthcare institute to become accredited by national accreditation foundation level to achieve higher standard of quality and safe environmental healthcare services.

RESULTS

Confirmed the varying importance of some socio-demographic variables on patient perception of healthcare quality, patient satisfaction, by using the Statistical Package of Social Sciences (SPSS), tools and statistical methods including mean, frequencies and percentages. The study findings indicate that participants, displayed high level of awareness toward the importance implementation of TQM. The study indicates that there is a significant correlation between the accreditation standards and awareness of the importance implementation of TQM.

TESTING RELIABILITY AND VALIDITY

Table (1): The reliability and validity of questionnaires dimensions

Variables	Cronbach's Alpha	r
The patient rights and responsibility and the ethics and morals of the organization	0.930	0.984(**)
Nursing care	0.984	0.983(**)
Information Management and Medical Record	0.989	0.991(**)
Patient access and assessment	0.974	0.983(**)
Continuous quality improvement	0.991	0.978(**)
Training and health education	0.976	0.973(**)
Occupational health of patients and their families	0.898	0.963(**)
The medical team	0.969	0.981(**)
Public affairs	0.873	0.966(**)
Department of Medicine management	0.988	0.953(**)
Environmental safety of patients & their families	0.957	0.941(**)
Health services for medical investigations	0.966	0.904(**)
Access to health services and admission	0.901	0.932(**)

The above table illustrated, the reliability coefficients of the dimensions of survey were high values where reliability coefficient values were between (0.829 – 0.997) that indicate the values of reliability coefficients to the validity of survey for the application and the reliability of the results.

Table (2): The reliability and validity of questionnaires dimensions

Variables	Cronbach's Alpha	r
General criteria for safety and safety of the patient and his family	0.501	0.564(**)
Procurement and medication selection	0.541	0.079(*)
Drug Administration	0.853	0.474(**)
Rights and duties of the patient	0.960	0.808(**)
Patient access to service	0.984	0.843(**)
Safety of Drug Administration	0.971	0.851(**)
Sterilization and laundry	0.973	0.820(**)
Infection control, surveillance and prevention	0.989	0.831(**)
Planning and implementation activities	0.919	0.669(**)
Emergency / Disaster Management	0.962	0.502(**)
Hazardous materials and waste	0.946	0.896(**)
Environmental safety and facility shelter	0.983	0.840(**)
Confidentiality and security of information	0.970	0.831(**)
Performance improvement	0.951	0.901(**)

The above table illustrated that, the reliability coefficients of the dimensions of survey were high values where reliability coefficient values ranged between (0.501 – 0.999) that indicate the values of reliability coefficients to the validity of survey for the application and the reliability of the results, the correlation coefficient values are statistically significant at (0.05), which confirms the validity of survey 's dimensions and Pearson correlation coefficient values ranged between (0.079 - 0.901).

DESCRIPTIVE STATISTICS

Table (3): The demographic data of (Health Recipients)

The demographic data	Variables	No	%
Educational level	Sub secondary	429	85.80
	Secondary	41	8.20
	University	27	5.40
	post-graduate	3	0.60
	Total	500	100.0
Relative Relation	Patient	71	14.20
	Mother	317	63.40
	Father	73	14.60
	Total	500	100.0
Benefactor (sponsor)	Companies	83	16.60
	Civilian	6	1.20
	State expenditure	411	82.20
	Total	500	100.0
Length of stay in the hospital	1 - 5 days	308	61.60
	6– 10 days	83	16.60
	11 – 15 days	7	1.40
	Total	500	100.0
Reason for admission to the hospital	Surgical intervention	183	36.60
	Medication-and treatment	317	63.40
	Total	500	100.0
Number of admissions to the same hospital (Frequency) & same reason	First time	427	85.40
	Readmission	73	14.60
	Total	500	100.0

The demographic data of recipient: (85.8%) of participants were sub secondary (429), and the most frequent number of Beneficiary were (State expenditure) with no (411) percentage (82.2%), while the most frequent number of Reason for admission to the hospital were (Medication and treatment) with no (317) with percentage (63.4%), while the length of stay in

the hospital were (1-5 days) with No (308) with percentage (61.6%), and the most frequent number of number of admissions to the same hospital were (427) with percentage (85.4%).

Table (4): The demographic data of Staff

Demographic data	Variables	No	Percentage
Gender	Male	177	49.2%
	Female	183	50.8%
	Total	360	100.0%
Age	20- 24 year	189	52.5%
	25- 29 year	100	27.8%
	30- 34 year	37	10.3%
	35- 39 year	13	3.6%
	Total	360	100.0%
Educational level	Sub secondary	31	8.6%
	Secondary	179	49.7%
	University	119	33.1%
	post-graduate	31	8.6%
	Total	360	100.0%
Occupation	Physician	41	11.4%
	Nurse	145	40.3%
	Technician	13	3.6%
	Administrator	153	42.5%
	Public relations	3	0.8%
	Total	360	100.0%
Experience	0- 5 years	137	38.1%
	6- 10 years	56	15.6%
	11- 15 years	52	14.4%
	16- 20 years	33	9.2%
	21- 25 years	43	11.9%
	26- 30 years	11	3.1%
	More than 30 years	28	7.8%
	Total	360	100.0%
Training courses	Training course	11	3.1%
	No training course	349	96.9 %

Table (4) the staff demographic data: Most respondents were female and their percentage were (67.8%), and the majority of the respondents were (20–24) years old representing (52.5%) percent of respondents, and (49.7%) percent of participants were (179) were secondary school, the majority of participants (145) of 40.3%, were working as nursing staff, and (38.1%) percent of participants (137) were working for more than 4 years, 3.1% percent of the respondents with (training course) were (11) participants.

TESTING HYPOTHESIS

Table (5): health quality improvement scores between (Providersrecipients):

Variable	1st survey	2nd survey	t-value	p-value
	Mean ± SD	Mean ± SD		
Health quality improvement	14.0±2.98	15.79±2.84	4.234	0.027*

Table (5) there is statistically significant difference between health quality improvement of the 2nd survey compared to 1st survey, through achievement and application of health quality improvement (p-values 0.05). At which 1stMean=14.0, 2nd time, Mean= 15.79and t-reported = 4.234

Table (6): table shows the achievement of TQM of the facility.

Variable	1st time	2nd time	t-value	p-value
	Mean ± SD	Mean±SD		
achieved health accreditation	16.27±2.71	17.79±2.78	4.211	0.028*

Table (6) shows that there was a significant higher TQM score of the facility of 2nd time compared to 1st time, with p-value=0.028*, at which 1st time Mean=16.27& 2nd time Mean= 17.79 and t-reported= 4.211.

Table (7): The scores of (providers /recipients) for health accreditation.

Variable	Providers Mean±SD	Recipients Mean±SD	t-value	p-value
hospital accreditation & quality of health services (providers / health recipients)	19.29±2.64	17.95±2.88	3.878	0.009*

Table (7) have shown above, there was a statically significant higher score of the health providers compared to health recipients with p-values ranged between (0.009*) at which providers Mean=19.29 & recipients Mean = 17.95 and t reported = 3.878

Table (8): The scores of re-evaluation of the study among (providers/recipients)

Hospital access	Recipients Mean±SD	Providers Mean±SD	t-value	p-value
statistical difference when re evaluation of the study after three months	24.17±5.33	27.02±5.79	5.882	0.017*

Table (8) shows that there was a significant high score of the health providers compared to recipients concerning to re evaluation of the study, with p-value = 0.017* at which providers - Mean=27.02, recipients Mean= 24.17 and t-reported = 5.882.

DISCUSSION

In the past decade, the quality movement that has been embraced by the service and manufacturing sectors has spilled into the health care sector. The term accreditation means the systematic assessment of hospitals against accepted standards. (Luce JM, 2002). This study evaluates how the

accreditation process helps introduce organizational changes that enhance the quality and safety of health care. One way to improve quality and safety in healthcare organizations (HCOs) is through accreditation.

(Dilley *et al*., 2012 and Joly *et al*., 2012) Previous studies suggest that public health agencies that implement organization QI activities will observe improvement in health outcomes (Bak P, 2014), receiving health accreditation leads to the improvement of the quality of the provided healthcare services.

26 studies about impact of accreditation programs on healthcare services showed significant positive impact in structure, processes and clinical outcomes in different subspecialties of medicines (Alkhenizan 2011). The results of (Mazmanian *et al*., 1993) study have shown that receiving health accreditation leads to the improvement of the quality of the provided healthcare services, reduce risks, adverse effects, and consistently improve healthcare procedures. (Cohen *et al*., 2010) Accreditation had high gain in reducing risks in health organizations (Sophie, 2010). 1048 Lebanese nurses indicated high score about improvement of quality during and after accreditation processes (El-Jardali *et al*., 2008). Appling accreditation programs lead to significant decrease in infant mortality Rates (Lorch, *et al*., 2008). another study is aimed to investigate the Physicians, Nurses and social workers perceptions of the impact of accreditation on quality of health services in Mecca region hospitals Saudi Arabia, the results of (Kholoud M. Aburahmeh, 2016) study have shown that receiving health accreditation leads to the improvement of the quality of the provided healthcare services.

Socio demographic variables showing positive association with patient satisfaction Include: age; Education; health status; Race; Marital status; and

social class (Naidu, 2009), found that older patients consistently tend to report higher levels of satisfaction than do younger ones do (Calnan, *et al*., 1994; Cleary & McNeil, 1988; Cleary *et al*., 1989; Ware & Berwick, 1990). found that men tended to be more satisfied than women and women tended to complain more often than men do. (Priporas, *et al*. 2008), found that males and young patient tend to rate satisfaction a little higher than females and older patients. (Tucker, 2002) Previous studies, patient age was found to be the most frequent predictor of satisfaction of all the socio-demographic factors considered (Calnan *et al*., 1994). Older patients tend to be higher in rank, more educated, and married. While in this study majority of the respondents were (20–24) years old and representing (52.5%),and secondary school their percentage were 49.7% of participants and the largest percent of participant 145, of 40.3% were working as nursing staff. 38.1% of participants (137) were working for more than 4 years, the youthful and females are willing to change more than elderly and males.

These study findings indicated that employees and health recipients display high level of awareness toward the importance implementation of TQM, and confirm the varying importance of some socio-demographic variables on patient perception of healthcare quality and patient satisfaction also establishing a more pleasant working environment conducive to strengthening the improvement.

RECOMMENDATIONS

1- The study recommended the continuous support and commitment of top management in implementing TQM principles; beside they should encourage employee participation through team.

2- Healthcare policy makers and the management of institutions should focus on the aspects of job rewards and practicing environment in order to decrease the risk of dissatisfaction in staff and increase their work happiness and sense of belonging so that they can provide better medical services to patients.

However, further improvements and enhancements should be made in healthcare and its related services.

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استخدام معايير الصحة البيئية كمتطلب لإعتماد مؤسسات الرعاية الصحية

[٢]

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المستخلص

شهد القطاع الصحي في الآونة الأخيرة إهتماما كبيرا وعلى جميع المستويات ،حيث أصبح موضوع "جودة الخدمة الصحية " محل إهتمام متزايد، سعيا من المؤسسات الإستشفائية بتقديم خدماتها الصحية بجودة عالية لتحقيق أقصى رضا ممكن للمريض و كذلك للعاملين مقدمى الخدمة الصحية.ويهدف هذا البحث إلى دراسة واقع جودة الخدمات الصحية في مستشفى حكومي ومدى رضا المريض و مقدمى الخدمة، بالإعتماد على أبعاد جودة الخدمات الصحية. تعتبر هذه الدراسة هامة لكونها تتناول المنظومة الصحية التى ترتبط بصحة وبناء إنسان مكتمل الصحة الجسمية والعقلية والإجتماعية إضافة إلي انعكاس ذلك على الإقتصاد الوطني، و بسبب شمولية تأثير خدمتها على كافة أفراد المجتمع.

هدفت هذه الدراسة على التحقق من إدراك تأثير إعتماد المستشفيات على جودة تقديم الخدمات الصحية، من وجهة نظر مقدمي الخدمات الصحية والمستفيدين من الخدمة الصحية، حيث المريض محور تقديم الخدمة الصحية، و يستمد هذا البحث أهميته من أهمية قطاع الصحة في المجتمع، كونه يهتم بأغلى عنصر من عناصر الإنتاج والمتمثلة في الإنسان، بالإضافة إلى أنه يتزامن مع جهود الدولة في تطوير جودة الخدمات المقدمة و النظام الصحي بكل ما يتضمن من ملفات.

وقد اتبع الباحث المنهج الوصفي الإحصائي الذي يقدم وصفا كميا لاتجاهات ومواقف وآراء الأفراد من خلال دراسة عينة منهم، معتمدا على الاستبانة (أداة الإعتماد) كأداة رئيسية للدراسة للمستشفيات الحاصلة على الإعتماد الصحي، تكونت أداة الدراسة من جزئين الجزء الأول يتعلق بالخصائص الديموغرافية لعينة الدراسة، والجزء الثاني يتعلق بتأثير نظام الاعتماد على تحسين وتطوير المستوى النوعي للخدمات الصحية في المستشفى ويتكون من ثمانية متغيرات، تم تصنيف الردود إلى خمس نقاط حسب مقياس ليكرث، بدءا من (١) أوافق بشده إلى (٥) أعارض بشدة وتم استخدام البرنامج الإحصائي للعلوم الاجتماعية (SPSS).

أظهرت نتائج هذه الدراسة ان فى حصول المستشفيات على الاعتماد الصحي يؤدى الى تحسين جودة الخدمات الصحية المقدمة من وجهة نظر مقدمى الخدمة الصحية و متلقى الخدمة الطبية، كما

أظهرت الحاجة الى توصيات و مقترحات كان من بينها ضرورة إستمرار دعم الإدارة العليا ومتابعتها تطبيق مبادئ إدارة الجودة الشاملة و تفعيل عنصر المشاركة وفرق العمل و التثقيف و التدريب المستمر، وترسيخ مفهوم الجودة فى ثقافاتهم التنظيمية، شملت الدراسة تقصى آراء (٥٠٠) فرد من مرافقى متلقى الخدمة و (٣٦٠) فرد من مقدمي الخدمة. و قد وزعت (٤٠٠) إستبانة لمقدمى الخدمة، (٥٦٠) لمرافقى متلقى الخدمة، استرد منهم (٥٠٠) إستبانة لمرافقى متلقى الخدمة ،(٣٦٠) إستبانة لمقدمى الخدمة بعد استبعاد التالف منها (٤٠) إستبانة. أظهرت نتائج هذه الدراسة أن تلقي الاعتماد الصحي يؤدي إلى تحسين جودة خدمات الرعاية الصحية المقدمة، من وجهة نظر كل من المتلقين و المستفيدين من الخدمات الصحية و يتم تطبيق الاعتمادات على مؤسسات وأنظمة الرعاية الصحية، وهي مصممة لدعم والحفاظ على تحسين رعاية المرضى والسلامة البيئية.

الكلمات المفتاحية: الاعتماد، تحسين الجودة، مؤشرات الأداء الرئيسية، الخصائص الاجتماعية والديموغرافية، الصحة البيئية