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Journal of Management Research and Analysis

Journal homepage: <https://www.jmra.in/>

Original Research Article

Assessment and patients perception of the impact of accreditation on the quality of public healthcare delivery in primary and secondary healthcare settings

Sherry P Mathew^{1,*}, Vishnu Sunil²¹Dept. of Hospital Administration, Vydehi Institute of Medical Sciences and Research Centre, Bengaluru, Karnataka, India²Dept. of Hospital Administration, Kasturba Medical College, Manipal, Karnataka, India

ARTICLE INFO

Article history:

Received 23-08-2021

Accepted 28-08-2021

Available online 09-10-2021

Keywords:

Accreditation

Healthcare

Hospitals

Certified hospitals

ABSTRACT

Introduction: Accreditation is a crucial component that stresses patient safety and service quality. The goal of this study was to fill in the gaps by evaluating the impact of accreditation in primary and secondary public health care settings.

Materials and Methods: A survey questionnaire was used to perform this cross-sectional study from July 2017 to July 2018. The study used a positivist paradigm, examining quantitative indicators before and after the certification procedure to determine the influence of accreditation.

Due to the fact that the data were not normally distributed, the variables were measured on an ordinal scale, the observations from both groups were independent of one another, and the distribution of the variable was similar in each group, the Kruskal–Wallis test was used to determine statistical significance.

Results: The mean score for components spanning structural, procedural, and outcome domains has been calculated for certified and non-accredited hospitals. Certified hospitals have higher median values for all structures in primary health-care facilities than non-accredited hospitals. Most of the constructs have a lower or equal median value in accredited secondary care facilities than in non-accredited facilities.

Conclusion: Accreditation has the potential to have a positive impact on the entire facility. Nonetheless, authorities must see accreditation as a way of holistic and continual reform if they are to ensure the intended outcome from this lengthy and costly procedure.

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1. Introduction

Accreditation has been defined by the World Health Organization as a comprehensive evaluation of the key systems that make up a health & care establishment and is an increasingly projected method for enhancing quality at the health & care delivery level.^{1,2} Developing countries such as India and many Asian countries have started aggressively promoting accreditation in the past decade.^{3,4} Hospital accreditation was started by The American College of Surgeons 100 years ago, and since then the number of hospital accreditation programs has expanded rapidly.

The World Health Organization identified 36 nationwide healthcare accreditation programs in 2000.⁵ Accreditation is an essential part of healthcare systems in more than 70 countries and is often provided by external and independent review, assessment or audit.⁶ The systematic evaluation of healthcare services is a way to obtain regulatory peer review on the organizational maturity and reliability.⁷ The benefits of accreditation are embodied mainly in its cost containment, in being a useful measure for quality evaluation, an effective means of management, and a quality indicator for marketing.⁸ Accreditation is considered a key component and prioritizes patient safety and quality of service. In addition, accreditation is useful for improving

* Corresponding author.

E-mail address: drsherryathew@gmail.com (S. P Mathew).

risk management, providing patient safety culture in hospitals; controlling costs, making management effective, and building initiative in term of patient safety from organizations that participate in accreditation. Achieving accreditation is a strong statement to show the public about the organization's efforts to provide the highest quality service.^{8,9} Literature affirms that hospital accreditation and patient satisfaction are both quality measures for health care services. Previous studies conducted to explore the association between hospital accreditation score and patient satisfaction revealed contradictory results. The truth of the statement of "hospital accreditation will ensure good quality health service" is doubtful. It shows the need to provide evidence that accreditation procedures can surely improve health services, thus increasing patient satisfaction.¹⁰ Considering the previous studies and their inconsistent results, there is a need to assess the overall effectiveness of accreditation on quality. Further, there is a dearth of studies assessing the impact of accreditation while having a comparison group and from patients' perspective. Most importantly, the impact of accreditation programs in secondary health & care settings lacks evidence in the literature. Against this backdrop, this study aimed to fill these gaps by assessing the impact of accreditation in primary and secondary public health care settings in Karnataka while having a comparison group and from the patients' perspective. The study results will have implications at the policy level and service provider level to restructure the implementation process of accreditation.

2. Materials and Methods

This cross sectional study was conducted from July 2017 to July 2018 using a survey questionnaire. The study utilized a positivist paradigm as it measured the impact of accreditation by comparing the quantitative variables before and after the accreditation process. The study was planned to compare the two types of hospital settings (accredited and nonaccredited) to understand accreditation impact District Hospitals(DHs), General Hospitals(GHs), Women and Children (W and C) hospitals, and the Sub district hospital provide secondary care.¹¹ The Community Health Centers(CHCs) represent the primary care hospitals along with Primary Health Centers(PHCs).¹¹ Samples were selected randomly from the Karnataka region. Informed consent was obtained from every participant before the start of the study. Participants of the study were in & patients admitted to medical wards at public hospitals. Being primary care facilities, Primary Health Centers (PHCs) were excluded from the study because of the lack of an adequate number of in patients. The questionnaire included 60 items in two sections. The first section sought demographic information on age, gender, educational level, marital status, employment status, and the reason for hospital selection. The second section measured patient's views on health

& care delivery on a point scale (1 = strongly agree to 5 = strongly disagree) using ten constructs adapting previous critical studies and models in the area.^{12–15} They are Physical Facility(PF-14items), Admission Services(AS-2 items), Patient Centeredness(PC-7 items), Accessibility of Medical Care(AM-5 items), Financial Matters(FM-5 items), Professionalism(P-4 items), Staff Services(SS-4 items), Medical Quality (MQ-4 items), Diagnostic Services(DS-2 items) and Patient Satisfaction(PS-5 items). The five dimensions of the SERVQUAL model(Tangibility, Reliability, Responsiveness, Assurance, and Empathy)¹⁶ and Structure & Process & Outcome (SPO) model of Donabedian¹⁵ are imbedded in the chosen constructs. The overarching constructs were subdivided into structural, procedural, and outcome dimensions according to the Donabedian model, which states that quality enhancement in structural and procedural aspects consequently results in PS (outcome). In this study, structure includes (the context in which care is delivered) infrastructure, medicine availability, staff, financial factors and equipment; process includes (the transactions between patients and health care providers) patient centeredness and relationship dimensions; and outcome includes (the effect of healthcare) PS.^{15,16} The validity of the questionnaire was evaluated based on content validity and experts' opinion. Cronbach's Alpha value was higher than the guideline value of IBM SPSS Statistics version 22 (IBM Corp., New York, USA) was used for the data analysis. As the variables under different constructs have been measured in the Likert scale, the averages have been presented using the median value. Statistical significance is calculated by using Kruskal–Wallis test because the data were not normally distributed, the variables being tested was measured in ordinal scale, the observations from both groups were independent of one another and the distribution of the variable in each group was similar. This test is conducted to assess for significant differences on continuous dependent variables (10 constructs overarching SPO domains) by a categorical independent variable (with two groups — accredited and nonaccredited hospitals).

3. Results

The average score for constructs overarching structural, procedural, and outcome domains for accredited and nonaccredited hospitals have been measured in median. As shown in Table 2 , the median value of all constructs in primary health-care facilities are higher in accredited hospitals than the nonaccredited. However, in accredited secondary care facilities, most of the constructs show a lower or equal median value than the nonaccredited.

Table 3 Shows that, for constructs overarching structure domain, there are statistically significant differences in scores between nonaccredited and accredited primary health-care institutions, which is found absent in secondary

Table 1: Selection of subjects (in & patients) from accredited and nonaccredited facilities of different categories

Hospital type	Accredited hospitals (NABH + cash)			Hospital type	Nonaccredited hospitals		
	Total number of beds	Strata size (%)	Sample size		Total number of beds	Strata size (%)	Sample size
CHC ^D	6667	15	165	CHC	6667	15	171
GH ^E	7020	20	268	GH	7020	20	269
THQH/TH ^E	8653	15	220	THQH/TH	8653	15	217
W and C ^E	5762	15	158	W and C	5762	15	146
Total			811	Total			803
Total				Total			1614

Primary healthcare facility, [‡]Secondary healthcare facility. CHC: Community health center, GH: General hospital, THQH: Taluk Head Quarters Hospital, TH: Taluk hospital, NABH: National Accreditation Board for Hospitals, W and C: Women and children

Table 2: Median score for various constructs at accredited and nonaccredited facilities of different categories

Facility type	Accreditation type	Constructs-structure domain					Constructs-process domain				Outcom domain
		PF	SS	FM	DS	AM	AS	PC	MQ		
CHC [‡]	Nonaccredited	4.25	5.00	4.34	3.43	5.00	4.38	5.00	5.00	5.21	5.21
	Accredited	5.31	5.71	4.53	5.00	6.00	5.00	5.81	5.70	6.00	5.75
THs/THQs [‡]	Nonaccredited	5.03	5.00	4.81	4.43	5.51	3.72	5.21	5.00	5.43	5.41
	Accredited	5.13	5.00	4.32	5.00	5.00	5.00	5.40	5.00	5.41	5.20
GHs [‡]	Nonaccredited	5.00	5.21	5.21	5.00	5.00	5.00	5.41	5.21	5.70	5.18
	Accredited	5.01	5.21	4.45	5.00	5.00	5.00	5.21	5.21	5.31	5.18
W and C [‡]	Nonaccredited	5.01	5.21	5.00	5.00	5.00	4.71	5.38	5.70	5.32	5.61
	Accredited	4.90	5.00	4.75	5.00	5.53	5.00	5.51	5.00	5.23	5.00

Primary healthcare facility, [‡]Secondary healthcare facility. (n=Nonaccredited-312; Accredited-309). CHC: Community health center, THs: Taluk hospitals, THQ: Taluk head quarters, GHs: General hospitals, PF: Physical facility, SS: Staff service, FM: Financial matter, DS: Diagnostic service, AM: Accessibility of medical, AS: Admission service, PC: Patient centeredness, MQ: Medical quality, PS: Patient satisfaction, P: Professionalism, W and C: Women and children

Table 3: Comparison of Structure and Outcome Domains at different categories of facilities by Kruskal & Wallis test

Facility type	Statistic	Constructs & structure domain				Constructs outcome domain
		PF	FM	SS	DS	PS
CHC ^D	χ^2 (1)	50.381	5.991	11.521	47.380	18.496
	Significant*	0.000	0.029	0.001	0.000	0.000
THQH/THQ ^E	χ^2 (1)	5.961	0.090	2.631	14.433	0.001
	Significant*	0.028	0.761	0.203	0.000	0.979
GH ^E	χ^2 (1)	3.430	9.031	2.510	2.320	0.306
	Significant*	0.120	0.008	0.218	0.255	0.588
W and C ^E	χ^2 (1)	3.318	0.570	5.551	6.040	11.968
	Significant*	0.129	0.455	0.035	0.001	0.001

*Significant at the 0.05 level; (n=Nonaccredited-312; accredited-309), ^DPrimary healthcare facility, ^ESecondary healthcare facility. CHC: Community health centers, THQH: Taluk Head Quarters Hospital, THQ: Taluk Head Quarter, GH: General hospital, PF: Physical facility, FM: Financial matter, SS: Staff service, DS: Diagnostic service, PS: Patient satisfaction, W and C: Women and children

health-care institutions. Hence, it can be assumed that accreditation has caused the structural improvements of primary health-care institutions only.

Table 3 also shows that a significant difference in scores for outcome domain (PS) is found between accredited and nonaccredited primary hospitals (χ^2 (1) = 18.496, P = 0.000 with a mean rank of 43.31^{x2} for nonaccredited and 89.61 for accredited). Contrastingly, no significant difference in scores is found between accredited and

nonaccredited secondary hospitals (THQH/THQ (χ^2 (1)= 0.019, P = 0.898 with a mean rank of 85.50^{x2} for nonaccredited and 85.03 for accredited and GH (χ^2 (1) = 0.306, P = 0.588 with a mean rank of 108.21^{x2} for nonaccredited and 103.73 for accredited) even though there is a statistically significant difference in scores for W and C hospitals (χ^2 (1)= 11.968, P = 0.001 with a mean rank of

68.11^{x2} for nonaccredited and 47.91 for accredited). Considering the overall scores, it can be assumed that

Table 4: Kruskal & Wallis test for significance for process domain at different categories of facilities

Facility type	Statistic	AS	PC	AM	P	MQ
CHC ^D	χ^2 (1)	9.071	45.748	19.810	13.709	3.939
	Significant*	0.005	0.000	0.000	0.000	0.089
THQH/THQ ^E	χ^2 (1)	0.059	3.249	14.63	6.028	0.033
	Significant*	0.819	0.073	0.000	0.028	0.873
GH ^E	χ^2 (1)	0.099	0.896	0.004	2.856	0.496
	Significant*	0.765	0.349	0.929	0.183	0.488
W and C ^E	χ^2 (1)	9.042	2.099	2.338	10.078	4.968
	Significant*	0.008	0.292	0.250	0.004	0.049

*Significant at the 0.05 level; (n=Nonaccredited-312; accredited-309),^DPrimary healthcare facility, ^ESecondary healthcare facility. AS: Admission services, PC: Patient centeredness, AM: Accessibility of medical, MQ: Medical quality, P: Professionalism, W and C: Women and children, CHC: Community health centers, THQH: Taluk Head Quarters Hospital, THQ: Taluk Head Quarter, GH: General hospital

accreditation has impacted in PS only in primary health-care facilities.

Table 4 Shows that there are statistically significant differences in scores between nonaccredited and accredited primary health-care institutions except the MQ construct, overarching process domain. In contrast, no statistically significant difference in scores was found in secondary health-care institutions. When we consider the overall scores of secondary health-care facilities, it can be assumed that accreditation has impacted the process domain of primary health-care institutions only, even though W and C hospitals shows an impact of accreditation in three constructs.

4. Discussion

Accreditation impacts all Structure, Process and Outcome domains of health & care delivery at the primary healthcare facilities, and this result is significant. Accreditation is a useful mean to achieve best possible standards in health care and develop the processes and outcomes related to a health system.⁸

Despite the remarkable achievement in primary care facilities, secondary care facilities fail to show considerable impact of accreditation. This outcome is debatable when satisfaction is “an expression of the patients” overall judgment¹⁴ on “how well” the services provided and reflects patients’ perceptions,¹⁷ particularly when accreditation is expected to be a catalyst to quality enhancement and satisfaction. It is to be noted that W and C hospitals, being the next referral point of CHCs, could trigger PS and shows an average impact on some constructs under and structure and process domain. This is perhaps due to the increased facilities available for the pregnant women at these centers, the specific processes of care received by them and the quality of communication.¹⁸ Further, Montagu et al.,^{19,20} found that poorer and less educated women are more likely to deliver in lower level sites and their satisfaction depends on the successful delivery of a baby, and they will have lower expectations which can be met easily.

The study revealed that, overall accreditation has an effect in structural aspects than the interpersonal domain. The service characteristics of the health & care aspect are often misconstrued, and consequently, the accreditation effort will be concentrated on improving tangible dimensions. This may be due to the misconception of the implementing agency that the patients will be content if the physical infrastructure is made appealing.

Although the relationship between hospital size and quality results as an outcome of accreditation has not been explored much, we believe that our findings merit further research. In the Lebanese context, larger hospitals have been implementing quality improvement initiatives (such as International Standards Organization, etc.) even before implementing the national accreditation program. In fact, they have been delivering services of a certain standard of quality for a long-time. Thus, they may have had narrower room for improvement. Another explanation related to our finding on hospital size has to do with the accreditation standards themselves. It might be that accreditation standards were made more tailored to fit small- and medium-sized hospitals since the priority for the Ministry of Public Health is to improve service delivery in poor performing hospitals (mostly small- and medium-sized hospitals). This might explain why results in large-sized hospitals were not better than small- and medium-sized hospitals. In other words, the differential improvement in quality as a result of accreditation was small in large-sized hospitals. As for the majority of small- and medium-sized hospitals, the concept of quality improvement and accreditation was new. That is probably why improvements that have been brought to those hospitals as a result of accreditation were more significant.

Accredited hospitals had a much higher perception of patient safety and frequency of incident reporting than non-accredited hospitals.⁴ It is in line with a previous study conducted by El Jardali (2010)⁴ that respondents who worked in an accredited hospital were more likely to report incidents, have an increase in patient safety perceptions, and feel the quality of service increased with

accreditation. The improvement in the implementation of patient safety culture could be caused by training and learning about patient safety during the accreditation process and hospital staff for example nurses feel the positive benefits of accreditation and carry out tasks by implementing standards (Wanderlei and Montagna, 2018; Yildiz and Kaya, 2014). There is consistent evidence that shows that general accreditation programs improve the process of care provided by healthcare services. There is considerable evidence to show that general accreditation programs improve clinical outcomes of a wide spectrum of clinical conditions.

5. Conclusion

There is a need to educate healthcare professionals about the potential benefits of accreditation to resolve any skeptical attitude of healthcare professionals towards accreditation. Accreditation can produce a positive repercussion in the hospital as a whole. Nonetheless, if to guarantee an expected outcome from this long and expensive process, the authorities must consider accreditation as a means of holistic and continuous transformation. Structure and process domains are the two sides of a coin and eventually contribute to PS. In order to create an increased public acknowledgement, the authorities have to intensify their monitoring and supervisory roles with an unwavering urge for excellence while implementing accreditation. To honestly assess the impact of accreditation, future research may include more data from the same strata making the comparisons more valid and representative.

6. Source of Funding

None.

7. Conflict of Interest

None.

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Author biography

Sherry P Mathew, Assistant Professor

Vishnu Sunil, Assistant Professor

Cite this article: P Mathew S, Sunil V. Assessment and patients perception of the impact of accreditation on the quality of public healthcare delivery in primary and secondary healthcare settings. *J Manag Res Anal* 2021;8(3):112-116.