

National Quality Assurance Standards Certification: An Impact Assessment Study in India

By

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Abstract

Background: Globally, a growing number of countries, both developed and developing, are adopting a system of healthcare assessment to get hospital accreditation. The accreditation is based on a systematic assessment of health care facilities against accepted predetermined standards by an authorized body, either government or nongovernment.

Objectives: The study aims to assess the perceived impact of NQAS accreditation on quality of care through healthcare staffs' perception. This paper also explores the impact of hospital accreditation through performance outcome.

Methods: The study followed a cross-sectional survey design to collect data from staff of the selected healthcare facilities across Karnataka, Maharashtra and Chhattisgarh, which have been successfully passed the accreditation under NQAS. A total of 295 healthcare staff from 8 hospitals – three District Hospitals (DHs), one Community Health Centre (CHCs) and four Primary Health Centres (PHCs) – were recruited for the study.

Results: The high score for the variable 'Quality Result' indicates that the staff perceived an improvement in quality comparing before and after the NQAS accreditation process. In terms of Benefits of NQAS accreditation subscale, the mean score of 4.48 (SD, 0.42) indicates that staff perceived improved team work and productivity in the hospital as an outcome of NQAS accreditation. Reward and Recognition had the lowest agreement score (mean, 4.30; SD, 0.59), while the Staff Involvement in the NQAS accreditation subscale (mean, 4.55; SD, 0.38) had the highest agreement score. Significant differences were observed specially between PHCs and CHCs in addition to PHCs and DHs. The scales and subscales followed a general trend of having the lowest score for CHCs, slightly higher for DHs and highest for PHCs.

Conclusion: The results indicate several advantages of NQAS accreditation, such as public hospital are competitively similar to private hospitals and, having sense of pride and satisfaction among staffs, and also study participants perceived NQAS accreditation is a good tool for improving quality of healthcare. In order to make accreditation an effective regulatory instrument, there is a need to assess quality based on patient outcome indicators. This can be done by strengthening the current accreditation programme to be more outcomes oriented.

Key words: NQAS, Accreditation, hospitals, Quality Improvements, Quality of Care, India.

Introduction

Globally, a growing number of countries, both developed and developing, are adopting a system of healthcare assessment to get hospital accreditation (Greenfield and Braithwaite, 2008). The accreditation is based on a systematic assessment of health care facilities against accepted predetermined standards by an authorized body, either government or nongovernment. Though, accreditation is mainly dealt with quality management, but its effect on improving service is debatable. It is being argued that accreditation standards helps to improve quality in health care and strengthen patient safety (The Joint Commission, 2016; Nicklin, 2015; Institute for Kvalitet og Akkreditering I, 2009); and they are designed to encourage continuous quality improvement efforts within the accredited institute (Rooney and vanOstenberg, 1999). Though, the accreditation process is believed beneficial and many countries in developing world are considering accreditation programme, but the research studies to assess its impact are scanty (Buetow and Wellingham, 2003). India was also one among developing countries to develop and implement a national accreditation programme (MoHFW, 2013), since its implementation in 2013, little is known on its impact on quality of care in Indian hospitals. Hence, present study aims to assess its impact on quality services through the lens of health care professionals, as well as performance outcome.

National Quality Assurance Standards (NQAS)

Ministry of Health & Family welfare (MoHFW), Government of India, to improve the quality of Health care services at public health facilities, implemented a comprehensive accreditation process. MoHFW with the support of its flagship programme, National Health Mission (NHM), launched a National Quality Assurance Standards (NQAS) in 2013. NQAS have been developed keeping in the specific requirements for public health facilities which have been derived by global best practices. NQAS are currently available for District Hospitals, CHCs, PHCs and Urban PHCs. Standards are primarily meant for providers to assess their own quality for improvement through pre defined standards and to bring up their facilities for certification. The NQAS are broadly arranged under 8 "Areas of Concern" – Service Provision, Patient Rights, Inputs, Support Services, Clinical Care, Infection Control, Quality Management and Outcome. These standards are ISQua¹ (International Society for Quality in Health Care) accredited and

¹ ISQas is an international body which grants approval to Accreditation Bodies in the area of healthcare as mark of equivalence of accreditation programme of member countries.

meets global benchmarks in terms of comprehensiveness, objectivity, evidence and firmness of development (MoHFW, 2013).

Objectives

1. To assess the perceived impact of hospital accreditation on quality of care through health care staffs' perception.
2. To determine the impact of hospital accreditation on performance outcome.

Methodology

Ethical consideration

The study was approved by the Ministry of Health and Family Welfare (MoHFW) Government of India, under the Annual Work Plan (AWP) of Population Research Centres (PRCs). Further, official communications through the NHM (National Health Mission) mission Director and State Programme Managers (SPM), with the District Health Officers (DHO) and District Surgeon (DS) was made through formal letter mentioning Ministry of Health & Family Welfare (MoHFW) Government of India's approval letter to take up the study.

Moreover, in all the selected health facilities during the data collection, having finished informing the purpose and objective of the study, the researchers obtained oral consent from the study participants. Participants were also informed that their participation was on voluntary bases, and the information obtained from them was kept confidential and will be used only for the research purpose.

Study Area

The present study was conducted in total eight health facilities across Karnataka, Maharashtra and Chhattisgarh. It is to be noted here that, with the directions of Ministry of Health and Family Welfare (MoHFW), Government of India, the data collection was done among the districts which have been allotted by the MoHFW to Population Research Centre (PRC), Dharwad for monitoring and evaluation of National Health Mission (NHM) Programme Implementation Plan (PIP) during 2019-20. Hence, the health facilities which have been certified under NQAS were covered in these Districts, among these three DHs, one CHC and four PHCs have been covered.

Study design

The study followed a cross-sectional survey design to collect data from staff of the selected healthcare facilities across Karnataka, Maharashtra and Chhattisgarh, which have been successfully passed the accreditation under NQAS.

Furthermore, to see the impact of accreditation on performance outcome, the retrospective service delivery data of two years before and after the accreditation have been collected to assess the impact of the NQAS accreditation from selected healthcare facilities.

Data Collection and tools

Multiple strategies have been adopted to achieve the study objectives. First, discussion has been held with the persons in-charge in the NQAS implementation at the health facility to understand his/her experience in implementation of NQAS and its certification. The data collection occurred through individual interviews, recorded and guided by the statements: “Tell me about the NQAS certification system implemented in this public hospital”. For this a semi-structured interview guide designed based on knowledge extracted from published literature was used to capture the perception on NQAS. This interview guide covers themes of quality management, effect of NQAS, etc. To capture broad experiences of NQAS and how its accreditation had affected their work, the study recruited head of the facility or a person who headed the implementation process of the NQAS.

Second, to understand the effect of NQAS, the perception of staffs in the selected healthcare facilities were gathered through pre-designed self-administered interview questionnaire. The instruments to evaluate the effect of accreditation on quality health care and patient safety were scanty in the available literature. And there is no such instrument that can be used universally. Hence, a suitable scale that was developed in previous studies, preferably Shortell *et al* (1995) and Pomey *et al* (2004) was used by modifying to fit local culture with no changes in content. Hence, the NQAS implementation and accreditation experience of the staff is capture through a score on five-point Likert scale, total nine scales and sub scales were used from the above said literature to rate the score.

Third, to assess the impact of the NQAS accreditation, the retrospective service delivery data of outcome indicators for two years before and two year after the accreditation have been collected

from selected healthcare facilities. The data collection for the study was conducted at different points of time along with NHM-PIP monitoring studies during December, 2019 to February, 2020.

Selection of respondent

The targeted respondents for this study was staff of selected healthcare facilities who are actively involved in hospitals' core activity of providing healthcare services, and are more likely to feel the impact of accreditation on quality. In each facility, especially, in DHs and SDHs different departments have been covered to employee respondent. The sample was selected both from clinical and non-clinical staff, who are actively involved in providing healthcare services.

Moreover, for sample selection the criteria of being active in the hospital since the initiation of NQAS implementation and/or at least present at last audit of external evaluation for NQAS certification were used. The sample was non-probabilistic and established for convenience. Finally, the sample consisted of 195 respondents: 45 Specialist/Doctors, 133 Paramedical staff and 17 other staff including administrative staffs. Further, staff member who were present during our field visit was invited individually to participate in the study after briefing the objectives of the study and giving oral informed consent. All the study participants were assured about the confidentiality and anonymity.

Analysis Plan

Post transcribed, all reports of the qualitative interviews were repeatedly read, with common arguments highlighted and treated, always keeping with the original meaning of the words. In presenting the results, excerpts/extracts/verbatim of the reports were edited to eliminate grammatical errors without, however, incurring in changes in the original content (i.e., the reports). In addition, whenever necessary, we added further compounded-terms in brackets to facilitate the understanding of the speeches by the reader.

For quantitative cross sectional data collected from self-administered interview questionnaires have been entered using Microsoft Excel sheet and then converted into SPSS file. The data was analyzed using SPSS 20 and analyses were carried out at the 0.05 significance level. Data analysis steps are detailed below. First, to describe the characteristics of the respondent, univariate statistics were performed. Second, mean scores were computed for every scale and

subscale based on the number of available items. Further, to compare mean scores for each scale and subscale across health facilities statistical analysis was performed using Welch's ANOVA. Welch's analysis of variance is an excellent analysis that one can use all the time for One-way analysis of variance. Welch's ANOVA is preferred against traditional ANOVA test, because it helps to get out of a tricky situation with an assumption. It completely wipes away the need to worry about the assumption of homogeneous variances (). Similarly, to identify significant differences between specific groups, we performed a pair-wise comparisons post hoc test. For that the Games-Howell comparison method was used as a multi-comparison technique. Difference were considered significant when $P \leq 0.05$.

Result

With the intention to capture the effect of NQAS accreditation, discussion has been held with the person in-charge for the NQAS implementation at the health facility level. Hence, in total we interviewed 8 professionals from selected healthcare facilities. In the analysis of the interviews, the following thematic categories were perceived: 1) Benefits of NQAS certification; 2) NQAS certified hospitals like private corporate hospitals; and 3) Pride/Satisfaction for working in the NQAS certified hospital.

Benefits of NQAS certification

According to speeches of the participants it reflects that the NQAS certification has brought lot of improvement in public health facilities in terms of managerial and medical care areas. In this regard the respondents mentioned that the NQAS certification has provided the opportunity of getting an upgraded health care service in public healthcare facilities to its users, which is the result of the competent leadership in planned implementation of the NQAS and the commitment of its employees.

Regarding the roles and responsibilities of staff in the NQAS certified hospital, it is noted that the responsibility exercised by facility in-charge and employees are referred to as competent and commitment, for having achieved the NQAS accreditation, respectively. It can be noted in the excerpt:

.....our first meeting [NQAS related] was started at 9pm and last till 2 am. Then I learnt that this team is very interested in this NQAS and we can achieve our goal [accreditation certificate] (Interviewee 1).

.....having this type of privilege [accreditation certificate] is very important for staff of a public hospital.....it gives respect among other staff and shows the ability of the hospital team work.....and also it shows the competent and commitment of our staff [...] (Interviewee 1).

Another aspect emphasized by the interviewees in this research refers to the interest and team spirit among the staff, which sets it above other health facilities in choosing to implement the NQAS procedure. In the following report, this spirit is clearly evident:

I see that our staffs are very interested, cooperative and committed to do anything assigned to them. In other hospital this type of environment is not there. Hence, here always innovative things happen [...] the other hospitals are stagnant (Interviewee 6).

Among the benefits reported by the participants of being part of the NQAS certification, it has brought a proper work flow, and improved services that support effective, fast, and needed diagnosis to meet the demand of the patients:

Now the waiting time is decreased a lot after here [NQAS certified hospital], earlier patient needs to wait hours together, but now it's fast. So, it's quick thing now to get services here. It is different from other public hospital. So, I find it very rewarding (Interviewee 8).

The cleanliness and equipments of the hospitals are also clearly marked by the respondents regarding the comfort of the accommodation:

[.....] As a Women Hospital it is very much equipped for the mother and child services, the SNCU in the hospital is very well equipped, so, that even compete with Medical colleges and corporate hospitals. Hence, in this hospital [NQAS certified hospital] anyone can feel the difference of having quality and comfort (Interviewee 6).

Though, the other excerpts refer to general aspects, participants also associate the existence of quality and technology with the NQAS certification:

I think it is the accreditation which made it possible that today we have many thing in our hospital, rain water harvesting, herbal garden, TV, camera, etc. [...]

[...] it [NQAS certified hospital] is very well equipped, and provides quality services with hygiene, even though a public hospital [...] (Interviewee 2).

NQAS certified hospitals like private corporate hospitals

Usually it is perceived that the conditions of the public hospitals in the India is poor and needs much improvement. Through these measures government wants to improve these conditions, so that users who have poor economic background could enjoy quality care like no less than private hospitals. This is evident in the following speeches of respondents.

[...] some of our patients think it [NQAS certified hospital] is a private hospital and we say them: not, it is public hospital [...] (Interviewee 2).

My neighbors tell that 'your hospital is so good, very clean; we will not go to private hospital anymore [...], patient will come here even from Medical college and they say 'you do whatever you do, we will not go there. So, that's very good (Interviewee 6).

Another speech emanating from the participants of this study, which shows the similarities of the NQAS certified public hospital to a private hospital, as follows:

I think patients have changed their view towards it [NQAS certified hospital], now-a-day they perceive our hospital is better than any private hospital [...]..... It's a very delight to hear this from the people [...] (Interviewee 7).

Pride/Satisfaction for working in the NQAS certified hospital

Moreover, in addition to the above discussed advantages of NQAS accreditation, the pride and/or satisfaction of the being part of a public hospital certified by NQAS, can be noted in the speeches of the study participants.

Being a certified institution in a vast networking of public hospitals in India, where the condition of public healthcare facilities are perceived poor, certainly provide a very pride and satisfactory feeling for staff. This is clearly evident from following reports:

After successfully going through the process [NQAS certification] and receiving award it makes us [Staff working in NQAS certified hospital] more confident and brings a good image among healthcare staff fraternity (Interviewee 5).

One another staff stated:

.....it is wonderful feeling [working in an accredited public hospital]. Then, it's [NQAS certification] gives an identification for our work and commitment (Interviewee 4).

In addition to pride and satisfaction staff reported a sense of desire to reach new stages/level:

.....we have done this [NQAS certification]. And we are ready to do anything now for Quality improvement (Interviewee 1).

The above reports indicates that the NQAS accreditation process demands hard work and dedication of staff from every hierarchy, but it is also evident from the speeches of the participants that the resulting feelings of satisfaction makes it possible to achieve.

Analysis of cross-sectional quantitative data

Descriptive analysis

Table 1 presents the profile of the study participants, as it is observed in the table, most of the study participants were being between 30 and 44 years of age (58%), similarly, little less than three-fourths are in the age group of less than 45 years. The majority of the sampled respondents were female (64%). Moreover, as educational qualification is concerned, the vast majority of the study participants held a Diploma course (41%), followed by Bachelors degree (26%). Whereas, another 16% of the study participants were held a masters degree and, remaining were passed pre-university or less.

Furthermore, most of the respondents were in the working category of paramedical staff (68%), further, 23% Specialist/Doctors were participated in the study and, around 9 per cent other staffs, including administrative staff, were participated. Majority of the respondents were participated from DHs (75%), followed by CHCs (8%) and PHCs (16%).

Table 1: Profile of the study participants

Background characteristics	N	%
Age		
Less than 30 Years	27	13.8
30-34 Years	30	15.4
35-44 Years	84	43.1
45-54 Years	41	21.0
55 and above	12	6.2
Missing	1	0.5
Gender		
Male	68	34.9
Female	125	64.1
Missing	2	1.0
Education qualification		
Masters degree	31	15.9
Bachelors degree	51	26.2
Diploma	80	41.0
<=Pre-university	30	15.4
Missing	3	1.5
Designation		
Specialist/Doctors	45	23.1
Paramedics	133	68.2
Others	17	8.7
Missing	0	0.0
Participants across NQAS accreditation health facilities		
DHs	147	75.4
CHCs	16	8.2
PHCs	32	16.4
Missing	0	0.0
Total	195	100

Note: PHCs = primary health centres; CHCs = community health centres; DHs = district hospitals; NQAS = national quality assurance standards.

The NQAS implementation and accreditation experience of the staff is capture through a score on five-point Likert scale, total nine scales and sub scales were used to rate the score. The scores based on these scales are presented in the Table 2 and Figure 1. As observed in the table, the

score on the scale that measures Quality result was 4.43 (SD, 0.37). This indicates that the staff perceived an improvement of Quality Result in the hospitals as an outcome of NQAS accreditation.

Moreover, in terms of Benefits of NQAS accreditation subscale, the mean score of 4.48 (SD, 0.42) indicates that staff perceived improved team work and productivity in the hospital as an outcome of NQAS accreditation. Reward and Recognition had the lowest agreement score (mean, 4.30; SD, 0.59), while the Staff Involvement in the NQAS accreditation subscale (mean, 4.55; SD, 0.38) had the highest agreement score.

Table 2: Distribution of the score of study variables basis of NQAS implementation and accreditation experience of the staff

	Overall Mean (SD)	Confidence Interval (95%)	Mean (SD) for PHCs	Mean (SD) for CHCs	Mean (SD) for DHs	P-value
Quality results ^{a,b}	4.43 (0.37)	4.38-4.48	4.64 (0.22)	4.14 (0.28)	4.42 (0.38)	<0.001
Leadership, commitment and support ^a	4.51 (0.39)	4.45-4.56	4.80 (0.23)	4.24 (0.31)	4.47 (0.40)	<0.001
Strategic quality planning ^a	4.47 (0.37)	4.42-4.52	4.67 (0.23)	4.25 (0.33)	4.45 (0.37)	<0.001
Education and training ^a	4.54 (0.49)	4.47-4.61	4.84 (0.30)	4.44 (0.51)	4.48 (0.50)	<0.001
Reward and recognition ^{a,b}	4.30 (0.59)	4.22-4.39	4.56 (0.46)	3.85 (0.47)	4.29 (0.59)	<0.001
Quality management ^a	4.44 (0.44)	4.38-4.51	4.70 (0.29)	4.23 (0.41)	4.41 (0.45)	<0.001
Use of Data ^a	4.34 (0.45)	4.28-4.41	4.59 (0.34)	4.20 (0.29)	4.31 (0.46)	0.002
Staff involvement in NQAS accreditation	4.55 (0.38)	4.49-4.60	4.68 (0.31)	4.38 (0.44)	4.53 (0.38)	0.026
Benefits of NQAS accreditation ^b	4.48 (0.42)	4.42-4.54	4.65 (0.30)	4.20 (0.37)	4.47 (0.43)	0.002

Note: ^a= Significant difference between PHCs and DHs; ^b= significant difference between CHCs and DHs; SD = standard deviation; PHCs = primary health centres; CHCs = community health centres; DHs = district hospitals; NQAS = national quality assurance standards.

The mean score for all scales and subscales were significantly different across hospital, with the exceptions of the scale on Use of Date, Staff Involvement in NQAS accreditation and Benefits of NQAS accreditation. Significant differences were observed specially between PHCs and CHCs in addition to PHCs and DHs. The scales and subscales followed a general trend of having the lowest score for CHCs, slightly higher for DHs and highest for PHCs (Table 2 and Figure 1).

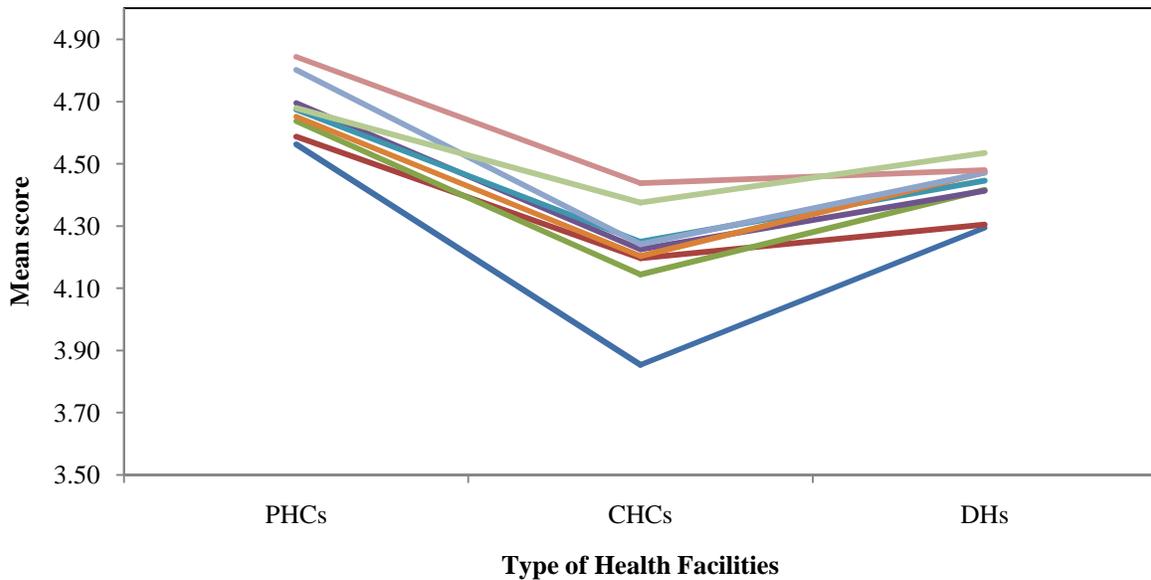


Figure 1: Distribution of the scores of study variables on the basis of NQAS implementation and accreditation experience of the staff.

Note: The figure depicts mean score for all scales and subscales on the basis of NQAS implementation and accreditation experience of the staff capture through a score on five-point Likert scale. The scales and subscales followed a general trend of having the lowest score for CHCs, slightly higher for DHs and highest for PHCs.

PHCs = primary health centres; CHCs = community health centres; DHs = district hospitals.

Outcome indicators

In the third strategy for understanding the effect of the NQAS accreditation, the analysis based on service delivery data was done and presented below. The data is presented for the two years before and two years after NQAS certification. The performance of the lower level healthcare facilities (i.e., PHCs) is presented in the Figure 2A, which clearly shows the positive impact with the NQAS certification on the performance of the healthcare facilities. In all four of the PHCs the OPD have gradually increased year-by-year, indicating positive effect of NQAS accreditation. Whereas, it is not that much clear in the case of DHs; it should be noted here that the discussion with the staff revealed that due to developing peripheral hospitals in terms of

quality and availability of Doctors and other resources, the decrease in the number of OPD was observed in these DHs.

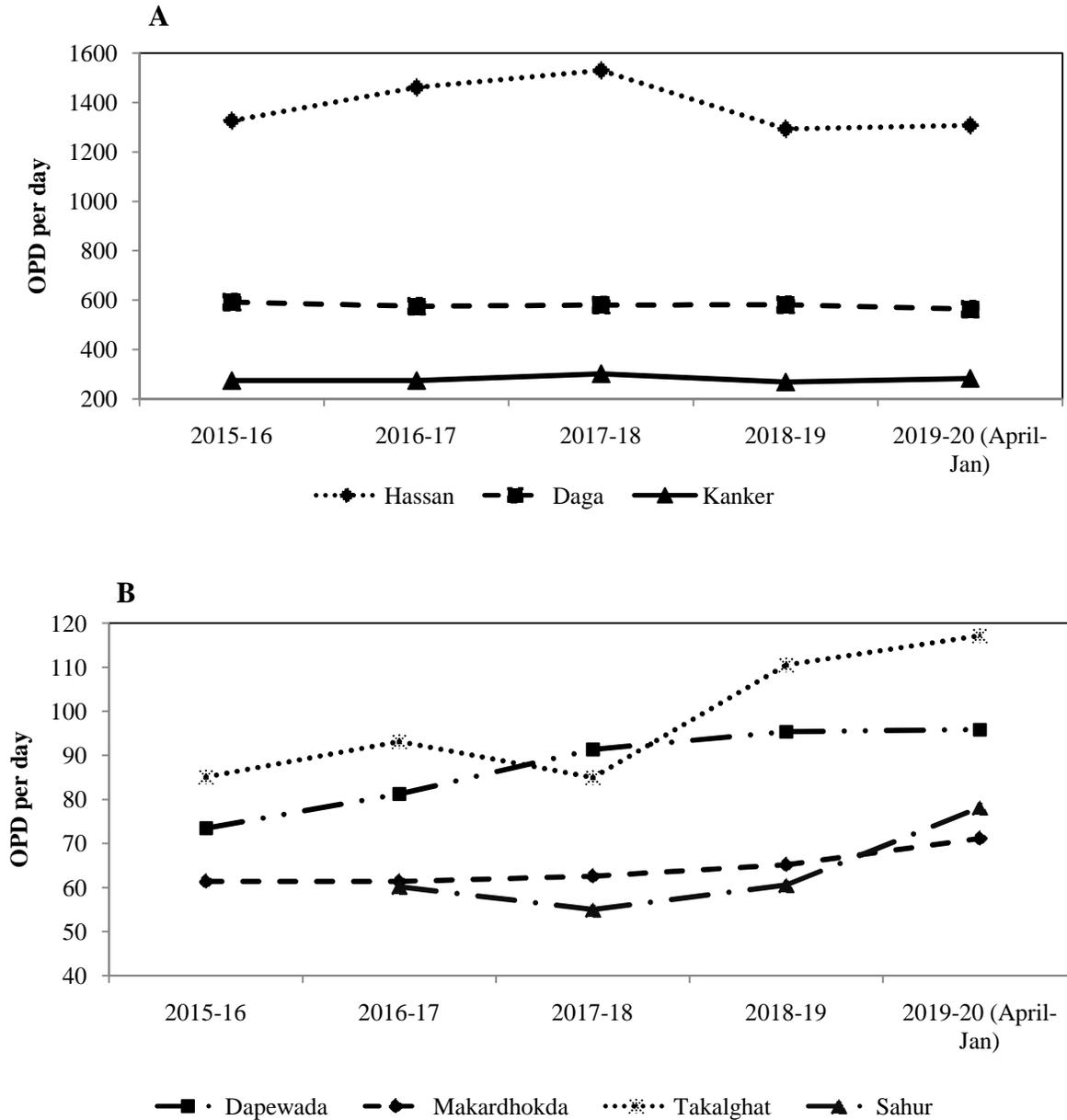


Figure 2: Distribution of the OPD per day performance before and after the NQAS certification.

Note: The figure A & B presents the OPD per day in DHs and PHCs, respectively. It shows that in all four of the PHCs the OPD have gradually increased year-by-year, indicating positive effect of NQAS accreditation. Whereas, it is not that much clear in the case of DHs; it should be noted here that due to developing peripheral hospitals the decrease is observed in the Daga women hospital's OPDs. The figure present the trend of the OPD well before of the certification and after the certification to understand the impact of the NQAS certification in these healthcare facilities.

The figure 3A & 3B presents the distribution of night deliveries conducted in DHs and PHCs, respectively. It shows that in all of the PHCs, except Takalghat PHC, deliveries conducted in the night have gradually increased year-by-year since 2017/18. Whereas, it is not that much clear, and showing stagnant in the case of DHs.

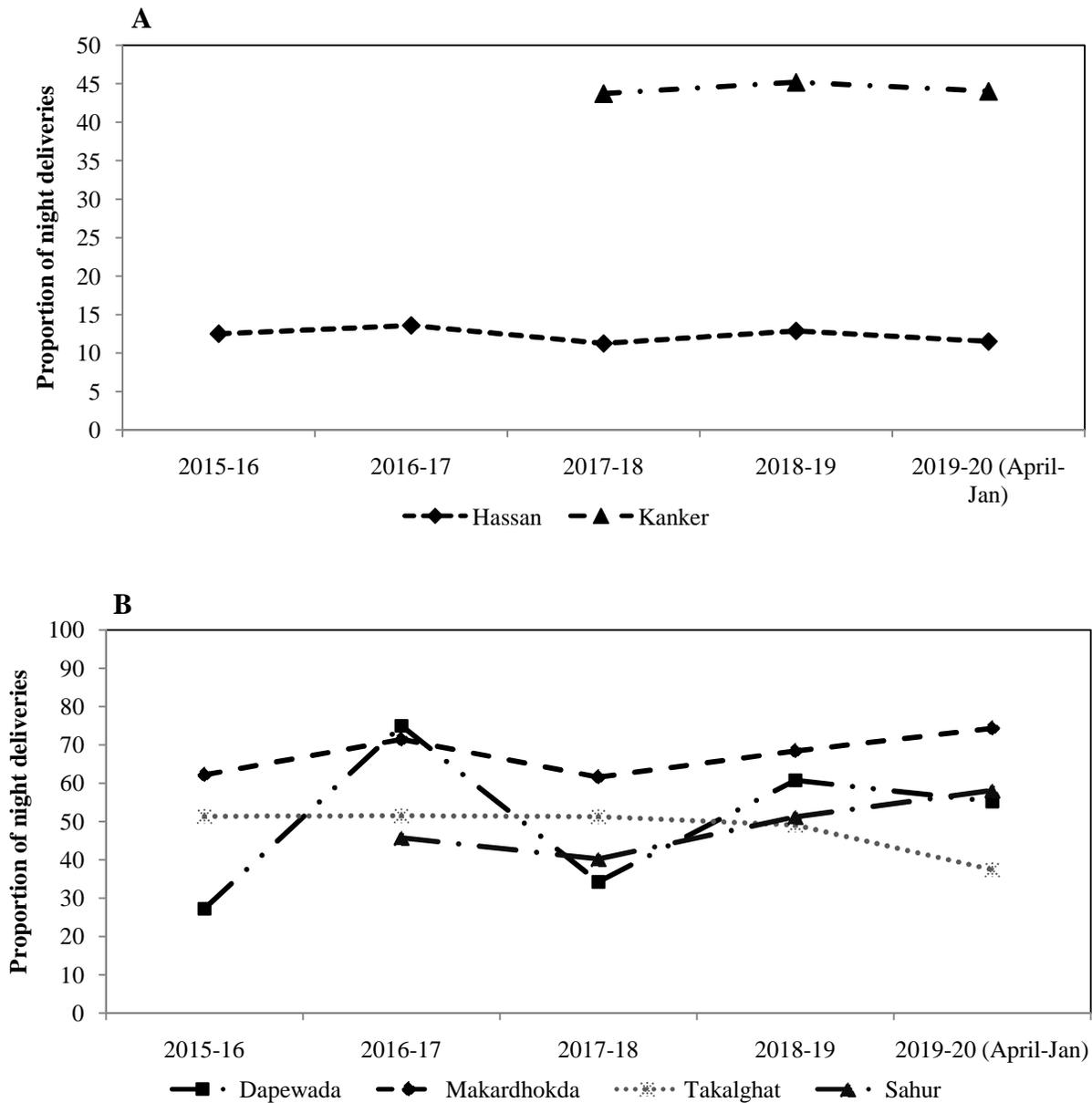


Figure 3: Distribution of proportion of night deliveries conducted in the health facilities, 2015-20.

Note: The figure A & B presents the distribution of night deliveries conducted in DHs and PHCs, respectively. It shows that in all of the PHCs, except Takalghat PHC, deliveries conducted in the night have gradually increased year-by-year since 2017/18. Whereas, it is not that much clear, and showing stagnant in the case of DHs.

Limitations

One important limitation among others was selecting only those hospitals that successfully passed through NQAS accreditation certificates. One might argue that results generated from hospitals that underwent NQAS certification process may not be generalized to hospitals that have not undergone accreditation at all. Therefore, we suggest further studies with different methodological approaches, such as seeking to measure/compare with non-accreditation hospital, for among other things, the financial resources management, the satisfaction of service users to the accreditation in the field of public healthcare services.

Conclusion and recommendations

The result of the study, from statements/speeches generated through discussion by those interviewed, indicates several advantages of NQAS accreditation, such as public hospital are competitively similar to private hospitals and, having sense of pride and satisfaction among staffs. This indicates that the NQAS accreditation has the potential to be consolidated as a system for quality management in the public healthcare hospitals. The purposes and clearly defined methods making it possible for government organizations to encourage the development of professional skills, time management, increased structure, efficient management of care and appreciation among workers.

Further, the result of scores generated through the self-administered interviews shows that the NQAS accreditation has a positive association with quality improvements in public hospital. According to study participants NQAS accreditation is a good tool for improving quality of healthcare. Moreover, study finding may be helpful for policy makers and hospital managers who are currently working to further strengthen the accreditation programme and its implementation. In order to make accreditation an effective regulatory instrument, there is a need to assess quality based on patient outcome indicators. This can be done by strengthening the current accreditation programme to be more outcomes oriented.

As the present study assess the impact of NQAS certification through healthcare staff's perception and less concentration is given to outcome indicators, hence, it is noted and recommended here that there is a need to assess quality based on patient outcome indicators. We hope this study will promote discussion on management of public hospital quality, through an

external evaluation, and also provide subsidies for the decision-making of managers and professionals working in public healthcare hospitals, which seek to be certified by NQAS accreditation.

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