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ORIGINAL ARTICLE

Experiences of Trauma Center Nursing Managers from the Accreditation Process: A Qualitative Study

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Abstract

Introduction: Accreditation is a systematic evaluation process of health services that evaluates health organizations based on approved standards to determine their quality. A qualitative study exploring the experiences of trauma center nursing managers regarding the accreditation program can help in better evaluation. The purpose of this study was to explain the experiences of trauma center nursing managers concerning the hospital accreditation process.

Methods: This research applied the content analysis method to explain the experiences of trauma center nursing managers in hospital accreditation. We used Lincoln and Guba's approach for data analysis. Sampling was done purposefully from November 2021 to January 2022 by voluntary nursing administrators. Finally, sixteen interviews were held with 14 participants.

Results: After analyzing the interviews, 398 main codes, 5 main categories, and 13 sub-categories were extracted as a hospital accreditation process. The five main categories included a low balance of cooperation in the treatment team, accreditation standards issues, immaturity of treatment systems, management issues in accreditation, and bias in the evaluation.

Conclusion: The results show that trauma centers need to make significant changes in the use of accreditation as a quality certificate tool. It seems necessary to plan for management processes, evaluation, standards, and structure and infrastructure issues.

Key words: Accreditation, Nurse Administrators, Qualitative Research, Trauma Center

Introduction

Quality improvement is a major goal in healthcare system reform, requiring the attention and resources of healthcare managers to ensure high-quality patient care (1). Accreditation is a systematic evaluation process of health service centers that evaluates health organizations based on approved standards to determine organizational quality (2). Given the fundamental role of accreditation in health service quality and patient safety, it is used for the evaluation and monitoring of the medical system (3, 4). Accreditation provides helpful feedback to develop quality, safety, and effectiveness in future planning (5-7). In the twentieth century, accreditation was designed and

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started by the Health Accreditation Council of America (8).

Recently, there has been a significant increase in the tendency of countries to the implementation of accreditation programs, with many countries establishing national hospital accreditation programs tailored to their national conditions (9). Numerous countries have implemented accreditation and achieved different results. Others have implemented accreditation without real evidence to prove that accreditation is the most proper method for improving health services (10). In Iran, since 1962, hospitals have been evaluated annually in terms of structural and resource standards. In 1997, standards were revised and expanded. The accreditation programs started in 2012, typically focusing on structural and process-related criteria (11).

The benefits of implementing the accreditation program include increased public trust, improved quality of health services, enhanced patient safety, reduced medical errors, improved hospital performance, increased participation, higher satisfaction among physicians and nurses, and the advancement of organizational communications (12-15). To evaluate accreditation programs, we can utilize methods for measuring performance indicators before and after the implementation, as well as examining the views and opinions of stakeholders about the program (16). The results of the research are different in this field. Yousefinezhadi et al. identified challenges such as poor hospital managers' engagement, lack of physicians' engagement, insufficient resources, multiple accreditation standards, and low motivation levels (5). Bastani et al. highlighted issues related to macro and policymaking, evaluators, structure and process, the executive, and accreditation criteria (17). Vali et al. noted issues including insufficient attention to the patient, inaccurate documentation, absence of proper executive policy, multiple problems with accreditation, and human resource challenges (18).

Given inconsistent results, limited evidence (3, 7), and the importance of implementing the accreditation program despite its problems and challenges (7), we decided to study the experiences of the nursing managers concerning the accreditation program. By using a qualitative study, we aim to investigate the various dimensions of the phenomenon to uncover, describe, and explain it, enabling a deeper understanding of the subject. Additionally, the experiences of trauma center nursing administrators regarding the accreditation program can help better evaluation. It seems that explaining the experiences of nursing administrators in a qualitative study can show different dimensions of feelings, experiences, ideas, and views of administrators engaged in the accreditation program. Therefore, the present study was designed and conducted with a qualitative approach to explain the experiences of trauma center nursing managers in the hospital accreditation process.

Methods

We applied content analysis to study the experiences of trauma center nursing managers regarding hospital accreditation. Qualitative content analysis is one of the various qualitative methods currently available for analyzing data and interpreting its significance as a research process (19). Sampling was done purposefully from November 2021 to January 2022 by trauma center nursing administrators. Participants were considered to have the largest variety of ages, genders, and work experience. The participants were nursing administrators who were working in a trauma center in Birjand, Iran. The inclusion criteria were at least 5 years of work experience, two years of management experience, and an agreement to participate in the study. Participants were interviewed in a quiet and private environment where they were comfortable.

The data collection process was performed by the first author through managing semi-structured interviews. Interviews with nursing administrators were conducted for approximately 45-65 minutes (about 55 minutes). First, demographic information, including age, gender, job title, degree of education, and work experience, was recorded. The interview began with the main questions: "Please describe your experience of the accreditation program at your hospital," " How are accreditation programs conducted in your hospital?" "What indicators are assessed in the accreditation program?" and "How are personnel assessed? Please describe your experiences." We used probing questions, such as "Can you explain this sentence?" and "What does this sentence mean?" Data collection continued until all categories were fully developed and no new categories were produced from the data. All interviews were recorded. In total, 16 interviews were done with 14 participants.

Data analysis began directly after the first interview and continued with the process of data collection. The data analysis was conducted using the qualitative content analysis method developed by Elo and Kyngäs (19, 20). Two researchers listened to the interviews several times and made a written reproduction of them. Afterward, interview transcripts were studied repeatedly to

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acquire a general and correct understanding of the data. Then, the sentences that highlighted key aspects of the outcomes of hospital accreditation were selected as the units of analysis, leading to the identification of meaningful units. In the next step, the meaning units were abstracted and labeled as a code. These codes were continuously compared, and condensed codes were further abstracted and labeled as sub-categories, which were then organized into broader categories based on similar contexts.

Lincoln and Guba suggested four criteria for setting data trustworthiness. These criteria include credibility, dependability, conformability, and transferability. To verify the credibility of this study, researchers ensured that those participating in the research were carefully identified and represented accurately, dedicating approximately four months to data collection. Dependability relates to the stability of data over time and under various conditions. The research team assured dependability by peer checking and external expert checking to audit the interview process, coding, and analysis. Conformability, which pertains to objectivity, was achieved by conducting member checks, confirming the codes with participants, and reviewing the interviews multiple times. Transferability was established through member checks and by sampling with the greatest diversity. The study context was thoroughly described to enable readers to decide about using the results in another setting (19, 21, 22). Eventually, the categories extracted from the study were given to two nursing administrators who were external to the study. They verified that our findings were similar to their experiences.

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Results

Five participants were female (36%), and nine participants were male (64%). Eight participants had a bachelor's degree in nursing (57%), and seven participants were supervisors (50%). The average work experience of the participants was 18.25±4.60 years, and their average management experience was about 13.14±5.21 years (Table 1). After analyzing the interviews, 398 main codes, 5 main categories, and 13 sub-categories were extracted (Table 2). The findings of this study were characterized into five main categories: low balance of cooperation in the treatment team, accreditation standard issues, immaturity of treatment systems, management issues in accreditation, and bias in the evaluation.

1. Low balance cooperation in the treatment team

Cooperation in the treatment team is a multi-dimensional and complex concept, the realization of which requires the development of different abilities in the team. In the interview with the participants, the following sub-categories were obtained: lack of an empathetic team and insufficient motivation in the treatment team.

1.1. Lack of empathy in the treatment team refers to the lack of effective cooperation among the treatment team members.

"...The accreditation program needs comprehensive participation, but the staff of other units do not have the necessary cooperation in the implementation of this program, and some of them resist implementation" (P 6).

"...Doctors' participation in the accreditation program is low. They do not know much about the accreditation program and do not have enough time. It is better to have empathetic participation together" (P 12).

Table 1: Demographic information of participants

Participants	Gender	Experience (years)	Management experience	Degree of education	Job title
P1	F	24	20	Master of Nursing	Supervisor
P2	M	20	15	Bachelor of Nursing	Head nurse
P3	M	21	10	Master of Nursing	Head nurse
P4	F	24	16	Bachelor of Nursing	Supervisor
P5	M	15	6	Bachelor of Nursing	Head nurse
P6	F	24	20	Bachelor of Nursing	Head nurse
P7	M	11	6	Master of Nursing	Head nurse
P8	M	23	14	Bachelor of Nursing	Supervisor
P9	F	23	21	Master of Nursing	Head nurse
P10	M	21	19	Bachelor of Nursing	Supervisor
P11	M	11	5	Bachelor of Nursing	Supervisor
P12	F	22	9	Master of Nursing	Supervisor
P13	M	14	10	Master of Nursing	Head nurse
P14	M	22	13	Bachelor of Nursing	Supervisor

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Table 2: Categories and sub-categories

categories	Sub-categories
1- Low balance cooperation in the treatment team	*1-1. Lack of an empathetic team* *1-2. Insufficient motivation in the treatment team*
2- Issues with accreditation standards	*2-1. Basic standards and indexes* *2-2. Challenge of multiple indexes* *2-3. Lack of localized indices*
3- Immaturity of the treatment systems	*3-1. Low proportion of accreditation indicators and the structure of medical centers* *3-2. Low proportion of accreditation indicators and resources of medical centers* *3-3. The gap between theory and practice*
4- Management issues in accreditation	*4-1. Managerial instability* *4-2. Change in administrators' attitudes*
5- Bias in evaluation	*5-1. Prejudice in evaluation* *5-2. Lobbying in evaluation* *5-3. Personalized evaluation*

1.2. Insufficient motivation in the treatment team

Motivation is a multi-dimensional phenomenon. The majority of participants believed that there was not enough motivation to do the work.

"…The reason is that staff participation is low because they do not have enough motivation to do the job, no differences are seen, our payments are not on time, and the staff is not satisfied enough" (P 7).

2. Issues with accreditation standards

Accreditation standards are proper clinical guidelines for nurses; however, nursing managers believe that these metrics are overly simplistic and present various challenges. The second category in this study includes the following sub-categories: basic standards and indexes, the challenge of multiple standards and indexes, and the lack of localized indices.

2.1. Basic standards and indexes

"…The standards and indexes provided to hospitals were very crude. I think many of them were not even applicable, which means they needed to be revised, and it was early to carry out them…" (P 8).

"…The standards and indexes had many problems and were just on paper. Standards and indicators should focus on the clinical process… " (P 9).

2.2. Challenge of multiple standards and indexes

"…There are too many standards and indexes, and it is difficult to read all of them. They first had to select the most widely used standards and offer them to hospitals..." (P 6).

"…The standards and indexes are constantly changing, the staff are confused, this is a terrible condition, and it is better to keep limited standards and indexes, and make extensive improvements to make them more practical…" (P 2).

2.3. Lack of localized indices

"…We got the full accreditation program from another place and implemented it in our hospitals. They had to localize it to fit our healthcare system as much as possible, and then we would carry it…" (P 4).

"…In every country, with every culture and every facility, a unique program must be implemented to make the results more tangible and accessible, something that has not happened in our country…" (P 5).

3. Immaturity of treatment systems

This category concept included three sub-categories and five condensed codes. The three sub-categories were the low proportion of accreditation indicators and the structure of medical centers, the low proportion between accreditation indicators and resources of medical centers, and the gap between theory and practice.

3.1. Low proportion of accreditation indicators and the structure of medical centers

This sub-category mentioned issues such as infrastructure and service access.

"…It is necessary to carry out any program first to have the necessary infrastructure for that program. In some of our hospitals, the principles of design and infrastructure have not existed, and I believe we must first have the proper infrastructure..." (P 12).

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"...In some of our hospitals, there is a long distance between different wards, and this causes many problems. For example, in our hospital, the operating room is very far from the wards, and it is difficult to deliver the patient to the operating room..." (P 14).

3.2. Low proportion between accreditation indicators and resources of medical centers

This sub-category mentioned issues such as insufficient facilities, lack of staff, and lack of budget.

"...If we want to carry out the accreditation program properly, we must have enough facilities because the accreditation program requires sufficient facilities and equal to the accreditation..." (P 7).

"...A nurse is responsible for caring for several patients during the shift, and now that accreditation has been added, they can no longer afford to work, and sometimes stay out of shift time to do their retarded work..." (P 7).

"...In the determination of hospital grading, hospitals that have insufficient facilities and do not get the proper grade should be supported so that they can achieve a higher level of quality for the next stage..." (P 9).

3.3. Gap between theory and practice

The gap between theory and practice is always one of the subjects discussed in the nursing community, and it was also discussed in our study as a third sub-category.

"...There is a big gap between what we have in theory and what we have done in practice. If the education is not along with the practice, it will be difficult to reach the goals, and we must always fill this gap..." (P 10).

"...We do not have basic education at university. Do we have an accredited educational unit in our university? Have we accredited educational classes for students and let them know about the program from the beginning? Education is important, but what is done in practice is different from the theory we learned..." (P 8).

4. Management issues in accreditation

The management issues included the following sub-categories: managerial instability and change in the attitude of administrators.

4.1. Managerial instability

"...Our administrators change before they learn the accreditation, and the next manager comes, and this cycle continues. It is better to decrease these changes to get better results..." (P 14).

"...In the discussion of accreditation management, whether in the nursing part or other parts, we do not have enough power, management is not stable, and management changes cause much damage to different parts" (P 11).

4.2. Change in the attitude of administrators

"...At the beginning of the accreditation, the administrators' views were more theoretical than practical, and more attention addressed to the discussion of standards, indexes, and documentation, and the practice was not given much attention..." (P 6).

"...Hospital officials were confused at the beginning of the accreditation because the accreditation program was new and difficult to carry out, but over time, managers' views changed from theory to practice. Practice is more important now..." (P 8).

5. Bias in the evaluation

We had multiple codes divided into the following three sub-categories: prejudice in evaluation, lobbying in evaluation, and personalized evaluation.

5.1. Prejudice in evaluation

"...Our evaluators are different in their assessments. Each time, they may be different from the previous one, and in some cases, they will be on guard against the staff, and the staff may be embarrassed. This flawed trend causes the staff to become heartbroken..." (P 3).

5.2. Lobbying in evaluation

"...In some cases, the evaluation is not real. The evaluator comes, and because they know someone, they may give a higher score so that their budget does not decrease..." (P 6).

"...The evaluation grading gives unrealistic criteria, and some unrelated equivalents were involved. We will not succeed until we move forward with this ideology..." (P 4).

5.3. Personalized evaluation

"...Evaluators have different evaluation methods, and their opinion is different. They do not have a uniform procedure, and sometimes they judge based on personal tastes..." (P 12).

"...Evaluation is important, but I think this section has not received much attention. Our evaluators take the standards and indexes into their hands and judge only based on those standards and indexes. They do not pay much attention to the practice. It is better to check the practice imperceptibly so that the result of the evaluation will be real..." (P 14).

Discussion

While there are conflicting findings regarding the impact of accreditation on improving the quality of healthcare services, accreditation continues to be accepted internationally as a quality assurance tool to

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support the most appropriate practices in the assessment of healthcare quality outcomes (7). The hospital accreditation process performed in our study revealed that the level of cooperation and motivation among treatment teams was low, standards and indexes were very basic and non-native, infrastructures were inadequate, access to all wards was limited, and the facilities were inadequate.

The first category of our study was low-balance cooperation in the treatment team. In this regard, Yousefinezhadi (2017) also reported weak hospital managers' commitment, a lack of physicians' engagement, insufficient resources, an excessive number of accreditation standards and criteria, and little motivation (5). In our study, this was reflected in the low motivation and non-participation of some nurses and physicians. In a qualitative study, Gharibi (2023) identified the main challenges of implementing the accreditation program as "organizational culture," "motivational mechanisms," "staff workload," "training system," "information systems," and "macro-executive infrastructure" (23), which is consistent with our study result.

The second category of our study was issues with accreditation standards. In this regard, Karimi (2013) focused on choosing an appropriate model, keeping stakeholders informed about the need for accreditation, creating appropriate information systems, clarifying information, and implementing organizational measures to achieve successful implementation. He showed that certification can be achieved by changing general attitudes. This can also have a positive impact on achieving hospital goals and improving service quality (24).

The third category identified in our study was the immaturity of the treatment systems. We emphasized the importance of paying attention to infrastructures, facilities, and proper budget allocation. In the infrastructure section, it is necessary to make appropriate changes to provide appropriate facilities and achieve a better result. Our study showed that improved results can be achieved with proper management, adequate education, infrastructure development, real evaluations, and practical standards and indexes. In this regard, Soren et al. (2018) reported that accreditation programs affect work time management, documentation practices, patient time allocation, the enhancement of organizational structures, improved performance of hospitals post-accreditation, and a greater emphasis on service (15).

The fourth category of our study was management issues. In this regard, Vali (2020) cited problems with accreditation programs, such as a difficult and time-consuming model, less attention to the patient, incorrect documentation, absence of proper executive policy, and human resources problems (18), which are consistent with the management issue and issues with accreditation standards in our study.

The fifth category of our study was bias in evaluation. In our study, bias in evaluation included prejudice in evaluation, lobbying in evaluation, and personalized evaluation. Several participants referred to the lobbying in evaluation, highlighting it as a significant risk that could create numerous challenges in assessing the accreditation of Iranian hospitals. It is suggested that evaluations should focus on realism to achieve more accurate outcomes.

In this regard, Hakak (2017) argues that accreditation is not just a top-down communication and requires proper supervision by the Ministry of Health. Additionally, traditional management practices, the lack of strong beliefs among senior administrators, and personalized evaluation can reduce the credibility of documentation (25). Accreditation programs, if performed correctly, can improve the structure and infrastructure and the quality of service delivery; this importance was confirmed in our study as well.

Coordination with the participants was challenging in some cases. The lack of sufficient motivation among some nursing managers for interviewing was another limitation of this research.

Conclusions

The results indicate that the accreditation process for trauma centers requires substantial changes to effectively utilize accreditation as a tool for quality certification. It appears essential to develop plans addressing management processes, evaluations, standards, and indicators, as well as structural and infrastructural issues. Given the diversity of hospitals and varying conditions in each country, there is a clear need for comprehensive research on accreditation.

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Conflict of Interest

The authors declare no conflict of interest.

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References

1. Masci V, Pratici L, Francesconi A, Lanza G, Zangrandi A. Quality accreditation's impact on effective leadership in healthcare organizations. International Journal of Healthcare Management. 2024:1-9.
2. ABBASI S, Tavakoli N, Moslehi M. Readiness of hospitals with quality management systems based on Joint Commission on accreditation standards.2012: 502-512.
3. Brubakk K, Vist GE, Bukholm G, Barach P, Tjomsland O. A systematic review of hospital accreditation: the challenges of measuring complex intervention effects. BMC Health Serv Res. 2015;15:1-10.
4. Siegfried A, Heffernan M, Kennedy M, Meit M. Quality improvement and performance management benefits of public health accreditation: national evaluation findings. J Public Health Manag Pract . 2018;24:S3-S9.
5. Yousefinezhadi T, Mosadeghrad AM, Mohammad A, Ramezani M, Sari AA. An analysis of hospital accreditation policy in Iran. Iran J Public Health. 2017;46(10):1347-1358.
6. Hapsari Y, Sjaaf AC, editors. Effect of hospital accreditation on patient safety culture and satisfaction: a systematic review. The International Conference on Public Health Proceeding; 2023;4(2):547-555.
7. Alhawajreh MJ, Paterson AS, Jackson WJ. Impact of hospital accreditation on quality improvement in healthcare: A systematic review. PloS one. 2023;18 (12):e0294180.
8. Raeisi A, Asefzadeh S, Yarmohammadian M. A Comrarative Study on Accreditation Models in Eurolje and the USA.2007.
9. Mosadeghrad AM. Hospital accreditation: The good, the bad, and the ugly. International Journal of Healthcare Management. 2021 Oct 2;14(4):1597-601.
10. Jha AK. Accreditation, quality, and making hospital care better. Jama. 2018;320(23):2410-2411.
11. Mosadeghrad AM, Akbari-sari A, Yousefinezhadi T. Evaluation of hospital accreditation standards. Razi Journal of Medical Sciences. 2017;23(153):43-54.
12. Mosadeghrad A, Shakibaei E. Hospital accreditation implementation prerequisites. 2017.
13. Azami S, Tabrizi J, Abdollahi L, Yari Fard K, Kabiri N, Valizadeh S, et al. Knowledge and attitude of top managers toward accreditation in Tabriz and Ardabil teaching hospitals. Journal of Health. 2012;3(2):7-15.
14. Moradi R, Nemati A, Bahman ZN, Shokri A, Mohammadi M, Soltantajiyan A. Effect of accreditation on the health services delivering in university hospitals of Isfahan. 2015:67-76.
15. Bogh SB, Blom A, Raben DC, Braithwaite J, Thude B, Hollnagel E, et al. Hospital accreditation: staff experiences and perceptions. Int J Health Care Qual Assur. 2018:31(5):420-427.
16. Buetow S, Wellingham J. Accreditation of general practices: challenges and lessons. Qual Saf Health Care. 2003;12(2):129-35.
17. Bastani P, Bordbar N, Golestanmanesh F, Kavosi Z, Pourmohammadi K, Kashefian-Naeeini S, et al. Hospital Accreditation: A Solution for Iranian Challenges or a Challenge for the Hospitals? World Medical & Health Policy. 2021;13(2):250-257.
18. Vali L, Mehrolhasani MH, Mirzaei S, Oroomiei N. Challenges of implementing the accreditation model in military and university hospitals in Iran: a qualitative study. BMC Health Serv Res. 2020;20(1):1-9.
19. Elo S, Kääriäinen M, Kanste O, Pölkki T, Utriainen K, Kyngäs H. Qualitative content analysis: A focus on trustworthiness. SAGE open. 2014;4(1):2158244014522633.
20. Elo S, Kyngäs H. The qualitative content analysis process. J Adv Nurs. 2008;62(1):107-15.
21. Schwandt TA, Lincoln YS, Guba EG. Judging interpretations: But is it rigorous? Trustworthiness and authenticity in naturalistic evaluation. New Dir Eval. 2007;114:11-25.
22. Guba EG. Criteria for assessing the trustworthiness of naturalistic inquiries. ECTJ. 1981;29(2):75-91.
23. Gharibi F, Moshiri E, Tavani ME, Dalal K. Challenges of implementing an effective primary health care accreditation program: a qualitative study in Iran. BMC Prim Care. 2023;24(1):270.
24. Saeed K, Kamal G, Ayan K, Najmeh B, Azad S. Impact of hospitals accreditation on service delivery from the perspective views of experts: A qualitative study. Payavard Salamat. 2013;7(4).
25. Hakkak M, Hozni SA, Shahsiah N, Akhlaghi T. Design of hospital accreditation model: A qualitative study. Manage Strat Health Syst. 2017;2(3):201-214.

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