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Knowledge, Perceptions, and Attitudes of Healthcare Professionals Towards Accreditation, Quality Standards, and Job Performance in Saudi Arabia

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***Abstract*: Background: Investigations are required regarding accreditation, quality standards, and job performance among healthcare professionals in Saudi Arabia. Aim: To assess the perceptions of medical and administrative staff of Saudi Arabia regarding the accreditation and quality standards and their association with job performance. Methods: We searched the Scopus, PubMed, Web of Science (WOS), and ProQuest till April 2024. We identified a total of 1832 records of which 23 were included for the systematic review. The analysis was conducted using the functionality provided in the meta package of the R software for statistical computing version 4.2.1. Results: Participation in accreditation was encouraged by 79.67% on average, while Central Board for Accreditation of Healthcare Institutions (CBAHI) accreditation was perceived as beneficial on institutional performance by a mean value of 85.27%, while 87.76% agreed that there were significantly positive impact of quality outcomes required for accreditation. Although positive perception were detected, the barriers towards optimal patients safety masked these perception leading to a pooled mean agreement value of 55.73%. However, notable heterogeneity was evident among pooled estimates. Conclusion: High level of agreement towards accreditation and quality standards was commonly reported among target population. Factors to improve job performance and patient safety included supportive leadership, flexible communication channels, and addressing staff shortages.**

***Keywords*: Accreditation, Patient Safety, Job performance, Quality standards.**

1. Introduction

The quality of health care service can be identified as the consistent fulfillment of the patients' needs by utilizing both effective and efficient service regarding health care. The quality of the health care service has multiple characteristics like safety, satisfying the patients' expectations and needs. There are six dimensions of quality: Effectiveness, Efficiency, Accessibility, Patient-centeredness, Equitability, and Safety [1].

Quality measurement is fundamental for improving and assessing the internal quality as well as informing health policies and having a reasonable justification for the choices of the patients. Quality measurement has three types of measures that are commonly utilized to evaluate the quality of health care in hospitals: Structural measures, Process indicators, and Outcome indicators [2].

Evaluating the connection between both outcome and process indicators from one side and the structural measures from the other side can be very delicate sometimes. But we must keep in mind that an increase in health care resources does not automatically mean that it will lead to an immediate improvement in processes or a reduction in mortality. [2].

The aim of process indicators is to evaluate the quality of clinical procedures and processes as well as enabling the answer to such questions like: does the average patient is able to receive the best care we can provide according to our current assess of knowledge? Which implies that by achieving the best health care processes it can lead to better health [2].

It has been emphasized by both national and international organizations on the constant monitorization of the patient health care perception to improve the quality of health care. Evaluation of the satisfaction of the patient is one of the most important ways to monitor the quality of health care [3].

The demands of monitorization and evaluation of patient satisfaction have increased substantially due to the ever so increasing demands on healthcare quality and its improvement as it is a fundamental pillar in the evolving and improvement of the policies of patient satisfaction monetarization. Creating a sort of competitive advantage for the facilities of healthcare is made possible by knowing the possibilities of elevating health satisfaction which increases the quality of health care. The increase in patient satisfaction enables a respectable building of trust between the patients and the healthcare providers. It also helps in the gradual building of bonds of loyalty and the elevation of the medical staff satisfaction with their work. Said reasons made patient satisfaction become a significant pillar of the health care quality system [4].

The patient's perception of quality is often different from the

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perception of health care providers. For example, the health care providers can be satisfied with the quality of the service they provide which represents their perception, but on the other hand the patient might not be as satisfied which means that the patient may have a different perception of quality than the medical staff perception. The targets of modern healthcare systems can be recognized by effective tools represented by the insight and perception of the health care providers and the constant patient feedback [5].

The objective of the study was to assess the perceptions of medical and administrative staff of Saudi Arabia regarding the accreditation and quality standards and their association with job performance.

2. Methods

A. Data Sources, and Search Terms

We followed a systematic approach to search the following electronic databases: Scopus, PubMed, Web of Science (WOS), and ProQuest till April 2024. An extensive manual search was conducted throughout the study period to check for any overlooked studies. No search limits or filters were applied. We used the following keywords in our search: Knowledge, Perception, Opinions, KAP, Awareness, Quality standards, Quality measures, Quality control, Job performance, Patient safety, Evidence based medicine, Saudi Arabia, Medical staff, Doctors, Physicians, medical care providers, Nurses, Administrative staff, Health care professionals, Cross-sectional.

(Perception OR Knowledge) AND (Quality OR "Quality standards" OR "Job performance" OR "Quality measures") AND ("Saudi arabia").

B. Selection Criteria

We included recently published (2013-2024) cross-sectional studies evaluating perception or knowledge or attitudes of health care providers (Doctors - Nurses or administrative staff) towards any quality parameter (health outcomes, clinical processes, patient safety, efficient use of health care resources, care coordination, accreditation etc.), in Saudi hospitals. Studies evaluating the quality parameters from the patients' perspectives were not included.

C. Study selection, Data Extraction, and Outcomes

Following searching the mentioned databases, the results were exported, and duplicates were removed. Subsequently, titles and abstracts underwent screening using Rayyan software. [6] Papers found to be relevant after the initial title and abstract screening underwent a more comprehensive full-text screening, adhering to our predetermined eligibility criteria. Microsoft Excel spreadsheets were used to extract data from the final included studies.

D. Quality Assessment

Risk of bias (ROB) assessment was conducted over all the included studies. Publication quality was assessed using the Newcastle-Ottawa Scale (NOS) [7].

E. Data Synthesis

Consistent data were reported when multiple studies used the same questionnaire in assessment of the quality-related outcomes. Agreement of study participants towards each item in the questionnaire was presented in mean and standard deviation (SD). Hence, we were able to pool the mean agreement level on various aspects related to the scope of our study. Findings were always reported as mean and SD hence no conversions to mean and SD were required. For quantitative synthesis, a meta-analysis of studies was conducted via a random effects model and the pooled mean was estimated using the inverse variance method. The pooled overall mean agreement was set as the effect size. The I2 statistic was utilized as an estimation of the between-study heterogeneity, with >50% representing substantial heterogeneity and >75% representing considerable heterogeneity. Potential publication bias among the included studies couldn't be assessed via a funnel plot as the number of trials analyzed was <10 [8]. The analysis was conducted using the functionality provided in the meta package of the R software for statistical computing version 4.2.1. [9], [10].

3. Results

We identified a total of 1832 records that were potentially relevant to the parameters of concern in the current meta-analysis. Figure 1 shows a flow diagram of the selection process. After removal of duplicate records, a sum of 35 reports of the remaining 732 records were assessed for eligibility. Of these 35 studies, only 23 studies met our inclusion criteria. Table 1 summarizes the characteristics of the included studies.

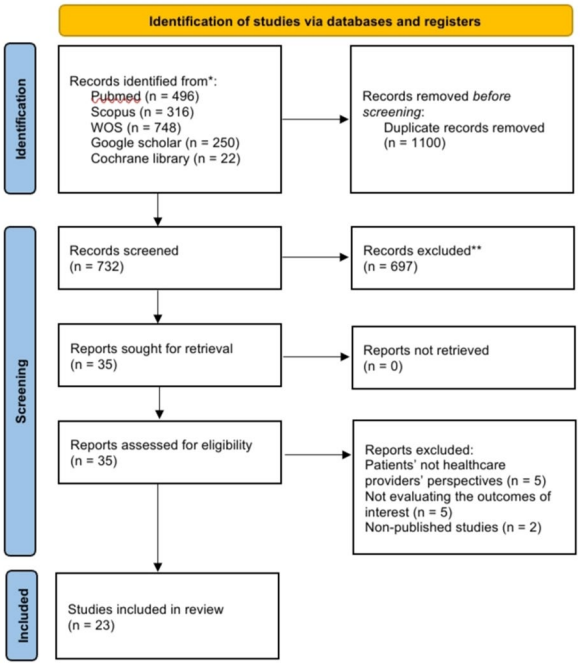

Fig. 1. PRISMA flow diagram

Table 1
Summary of the included studies (only studies with N > 100)

Study ID	Location	Population and Sample size	Study question	Conclusion
Kabrah et al., 2024	Twenty governmental CBAHI-accredited hospitals - SA	Physicians (23.9%), Nurses (41.5%), Dentists (4.9%), Pharmacists (3.3%). N: 364	Perceptions, Attitudes, and Barriers towards the Use of CBAHI Standards among Saudi Healthcare Providers	Accepted perceptions and attitudes toward using CBAHI standards among Saudi healthcare providers.
Algahtani et al., 2017	King Abdulaziz Medical City in Jeddah - SA	Nurses (54.16%), Physicians (18.42%), Pharmacists (6.5%), Technologists (5%). N: 901	Perceptions of health professionals on the impact of JCI accreditation and implementation of change towards the delivery of quality patient care	Accreditation positively impacted hospital processes, fostering change that improved patient care and health service delivery
A Qurashi e al., 2022	Hospitals across Kingdom of Saudi Arabia	Radiologists and radiographers. N: 335	Perceptions of Accreditation Programmes in Clinical Radiology Departments	Saudi radiologists and radiographers showed strong agreement or agreement towards hospital accreditation programmes domains' criteria
Mahrous et al., 2013	Taibah University - SA	Physicians (31.5%), Dentists (27.2%), Nurses (17.4%), Pharmacists (11.4%). N: 184	Assessing quality perceptions of academic health care professionals	Insufficient agreement was found among health professionals on 10 core quality concepts, "quality is tangible and therefore measurable" (29.3%).
Alomari et al., 2015	Governmental small size-hospitals located in different cities of Saudi Arabia	Physicians (37.7%), Nurses (28.3%), Administrators (18.8%). N: 195	Current situations in small size hospitals regarding knowledge of staff, their attitude and practice of quality standards	Participants have low knowledge but high attitude toward quality; job title affects attitude. Staff resistance was the most common barrier
Hussein et al., 2014	University-affiliated hospital in Saudi Arabia	Physicians (40%), Nurses (60%). N: 124	Relationship between nurses' and physicians' perceptions of organizational health and quality of patient care	Participants perceived better organizational hospital health correlated positively with patient care quality predictors (r = 0.26).
Alasqah et al., 2022	Public and private hospitals in Al-Qassim - SA	Nurses (100%). N: 497	Perceptions of quality improvement among nurses working in Saudi Arabia.	Saudi nurses' quality improvement nursing attitudes are found to be moderate.
Alharbi et al., 2022	King Khalid General Hospital- Hafr Al-Batin - SA	Nurses (100%). N: 160	Impact of the internal service quality on the nurses' job performance	Internal service quality and job performance are highly correlated and strongly Influence each other
Alkhatib et al., 2021	King Abdullah Medical City-Makkah - SA	Nurses (100%). N: 262	Nurses' Knowledge, Perception, and Attitude towards Evidence-Based Practice	The majority of the studied nurses had the knowledge and negative attitude regarding evidence-based practice.
Alyami et al., 2023	Najran, Saudi Arabia	Nurses (41.3%), Physician (32.9%), Pharmacists (4.5%), Radiology service staff (4.5%), Others (16.6%). N: 307	Healthcare Professionals' Perception Regarding Patient Rights and Safety	Participants showed strong support for patients' rights and readiness to disclose medical errors.
El-Jardali et al., 2014	Large teaching hospital in Riyadh - SA	Nurses (50.1%), Technicians (12%), Physicians (8.7%), Unit assistants, clerks or secretaries (6.2%), Others (23%). N: 2,572	Explore the association between patient safety culture predictors and outcomes	Lowest scores: Non-punitive response to error (26.8%), Staffing (35.1%), and Communication Openness (42.9%)
Aljaffary et al., 2022	Four cities located in Eastern Province of Saudi Arabia	Nurses (26.8%), Medical (24.8%), Other Clinical Position (18.7%), Managerial (11.3%). Support Services (18.4%). N: 310	Health-care workers' perceptions of patient safety culture (PSC) at primary health-care centers (PHCs)	Teamwork scored the highest positive response (68.8%) while Number of Events and non-punitive Response to Error scored the lowest at 10.6% and 30.7%, respectively
Alshammari et al., 2019	Four major hospitals in Hail Region, Saudi Arabia	Nurses (84.7%), Physicians (7%), Administrators/ managers (8.23%). N: 225	Healthcare professionals' perceptions toward patient safety culture	Among the patient safety aspects, patient safety grade received the highest mean value, whereas handoffs and transitions received the least consensus.
Ferrer et al., 2018	30 different hospitals in the Kingdom of Saudi Arabia	Doctors (40.3%), Nurses (36.08%), Allied health professionals (15.2%), non-clinical staff (8.4%). N: 417	Identify the elements that contribute most to the culture of quality in patient safety	The paper highlights the importance of fostering a culture of patient safety in hospitals, emphasizing open communication, error documentation, and feedback.
AlMaani et al., 2021	Primary Health-care Centers- Al-Ahsa, Saudi Arabia	Nurses (35.4%), Technologist/technician (21.5%), and other HCPs. N: 288	Explore the safety culture attitude toward patient safety to improve the quality and patient safety in primary health-care centers.	Improvements are needed, especially in the field of communication and stress recognition with regard to safety culture
Algethami et al., 2024	King Abdullah Medical City (KSMC)	Nurses (58.6%), Doctors (15.8%), Technician (7.4%), Others (18.2%). N: 350	Assessing the patient safety culture	62% positive responses at KAMC versus 70% in the global database

Allebdi et al., 2020	primary health care centers in Jeddah, SA	Physicians (100%). N: 119	Assess the level of job satisfaction and factors contributing to dissatisfaction of Saudi physicians	Dissatisfaction is high regarding contingent rewards (83.2%) and fringe benefits (76.5%)
Al-Takroni et al., 2018	Al-Qassim hospitals and primary health care centers	Nurses (100%). N: 1037	Job satisfaction among nurses	The majority of the nurses participating in the study are averagely satisfied in their job

Of the included studies, three studies used the same questionnaire to assess the perceptions, attitudes, and barriers towards institutional adoption of accreditation quality standards. Here we review each of these studies and report the pooled mean agreement per domains assessed within these studies. Kabrah et. al. aimed to "investigates the perceptions and attitudes of healthcare providers in Saudi Arabia regarding the Central Board for Accreditation of Healthcare Institutions (CBAHI) standards". Perceptions were positive towards accreditation quality standards. For example, regarding the questions about encouraging participation of the CBAHI accreditation, with a mean level of agreement of 73.14% while 84.38% perceived the accreditation as beneficial [11].

Another study with similar objectives was conducted by Algahtani et. al. Participation in the CBAHI accreditation process was agreed upon and encouraged by a mean value of 97.06%. As for the benefits of CBAHI accreditation on institutional performance, the mean agreement level was 97.93%. And lastly, there was a mean agreement level of 95.80% regarding the benefits of quality outcomes required for obtaining CBAHI accreditation [12]. A similar study by Al-Qurashi et. al. also reported that, for each of the three domains mentioned above, the reported mean agreement values were 68.75%, 73.5%, and 89% respectively [13].

Pooled mean agreement values for each of the three domains considered here are represented in Figures 2-3. By means of the random effects model, the mean overall agreement was estimated as 84.02% (Figure 2). As for domain-specific values, participation in accreditation was encouraged by 79.67% on average, while CBAHI accreditation was perceived as beneficial on institutional performance by a mean value of 85.27%, while 87.76% (Figure 3) agreed that there were significantly positive impact of quality outcomes required for accreditation.

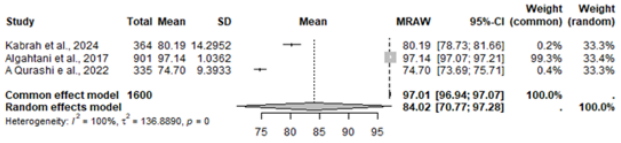

Fig. 2. Forest plot of pooled mean agreement regarding overall benefits towards accreditation

Notably, the limited number of studies reporting findings in a consistent manner had a negative impact on the statistical power of the analysis and the accuracy of the pooled results. There was substantial heterogeneity and too wide confidence intervals on each analysis. Hence, the estimated outcomes obtained here should be interpreted with highest caution and not to be generalized upon the target population with ease.

Another parameter that was reported in a consistent manner among 3 studies was perceptions and barriers regarding the patient safety.

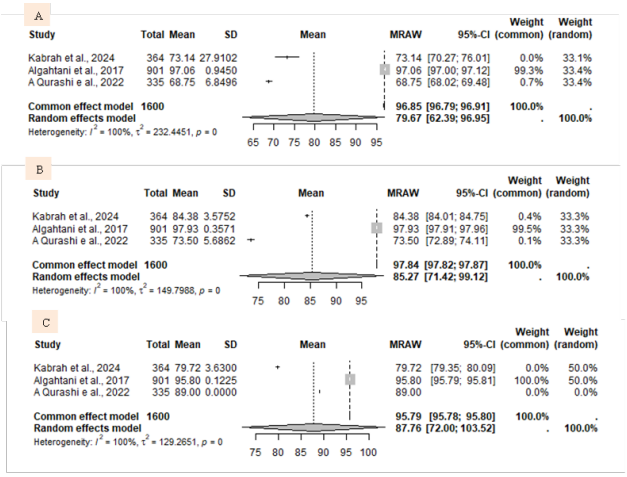

Fig. 3. Forest plot of pooled mean agreement regarding: A) attitudes towards participation in the CBAHI accreditation, B) perceived benefits of CBAHI accreditation, and C) perceived benefits of quality outcomes of CBAHI accreditation

El-Jardali et. al. revealed strengths in organizational learning, continuous improvement, and teamwork within units. However, areas requiring improvement included staffing levels, a non-punitive response to errors, and open communication [14].

In a similar study, Aljaffary et al. reported that the overall positive response rate concerning patient safety culture was 43.5%. Teamwork emerged as the category with the highest positive response rate (68.8%). Conversely, the areas with the lowest positive response rates were related to the number of reported events (10.6%) and a non-punitive response to errors (30.7%). This study also recommends improvements in event reporting and open communication regarding errors [15]. Algethami et. al. also reported a generally positive attitude towards patient safety culture (62% positive responses). However, this was significantly lower the global standard of 70% [16].

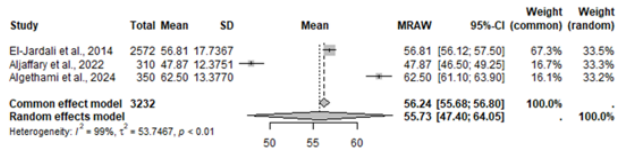

Fig. 4. Forest plot of pooled mean agreement regarding benefits of patient safety

In order to summarize patients safety findings from these papers, the mean agreement level of questionnaire items was calculated and pooled as in Figure 4. Although positive perception were detected, the barriers towards optimal patients safety masked these perception leading to a pooled mean agreement value of 55.73%. While the overall patient safety score is alarmingly low, notable heterogeneity is also seen which limits our interpretation of these findings.

4. Discussion

The pooled estimations of mean agreement on perceptions and attitudes towards accreditation, quality standards, and patient safety were all of limited value due to exceedingly high heterogeneity and limited statistical power. However, of the included 23 studies, only 6 were mentioned in the results section as they reported certain outcomes in a manner consistent enough to allow for pooling. Here we systematically review other included studies.

A. Quality and Accreditation

Mahrous assessed faculty members' perceptions of healthcare quality. There was a surprising lack of consensus among the healthcare professionals on several core quality concepts. While agreement existed on many aspects, there was significant disagreement on 10 fundamental concepts. Notably, this disagreement included whether quality should prioritize patients and the measurability of quality itself. Authors highlighted a potential lack of shared understanding regarding core healthcare quality concepts among academic health professionals in Saudi Arabia. To address this, the authors recommend implementing relevant training programs to improve understanding and potentially lead to advancements in healthcare delivery [17]. These findings may be be complementary to the notably low pooled patient safety score in the current study.

Hussein reported that, as perceived by intensive care HCPs in Saudi Arabia, teamwork emerged as the factor with the highest ratings when evaluating the quality of care provided. Interestingly, this factor did not show a statistically significant correlation with any measure of patient care quality. A weak, but positive correlation was also found between overall perceptions of organizational health and quality of care [18].

Alasqah et al. investigated quality improvement attitudes among Saudi nurses. A moderate overall level of quality improvement attitudes among the participating nurses was detected. Interestingly, the study identified factors associated with more positive attitudes. These factors included being female, married, older, and working fewer hours per week [19].

Almoajel et. al. reports an overall positive perception of care quality, with an average score of 4.26 on a scale where higher scores indicate stronger agreement. However, the psychological/psychiatric aspects of care received the lowest score (3.7), suggesting a need for improvement in this area. Furthermore, participants generally agreed (mean score 4.62) that they delivered high-quality healthcare [20].

Alomari et. al. conducted a descriptive cross-sectional study assessed HCPs knowledge, attitude, and practice regarding quality standards in small Saudi public hospitals. The median scores for knowledge and attitude towards quality standards were 48% and 80%, respectively. This suggests a positive attitude but somewhat limited knowledge base among the healthcare providers. An interesting finding was the positive correlation between knowledge of quality standards and practices related to their implementation [21]. Another cross-sectional study conducted by Al-Hadaisan et. al. recommended an overall improvement of quality management [22].

Mansour et. al revealed five interconnected themes about experiences with JCI accreditation: motivations for change, change implementation plans, the change process itself, sustaining changes after accreditation, and patient-related issues. Participants expressed positive views on the motivations for change, the planning stages, and managing patient concerns. However, their perspectives were less positive regarding the actual process of implementing changes and ensuring their long-term sustainability after accreditation [23].

Hussein et. al. 2022 conducted semi-structured interviews with fifteen hospital directors across Saudi Arabia to explore their attitudes towards accreditation and standard implementation methods. The study reports a generally favorable perception of accreditation among hospital directors, particularly those with more experience or prior exposure to the process. Several factors contributed to this positive view, including clear and well-defined standards, readily available quality professionals, and a strong alignment between accreditation standards and the hospitals' own goals. These factors facilitated directors' understanding of the accreditation process (coherence) and their ability to engage their teams in the implementation process (participation). This team engagement, in turn, led to concrete actions to integrate the standards into daily operations [24].

Alkhatib et. al reported that, while a majority of nurses they included demonstrated adequate knowledge of evidence-based practice (EBP), their overall attitudes towards it were negative. There was a statistically significant positive correlation between nurses' knowledge and their educational qualifications as well as years of experience [25].

Alatawi et. al reported that there was a range of factors impacting the overall hospital efficiency across various aspects, encompassing the community, individual facilities, and the broader healthcare system. Notably, the study identified ineffective hospital management practices as a significant barrier. This included a lack of strategic planning and clear goals, weak leadership, and the absence of a system for monitoring performance [26].

B. Patient Safety

Alyami et. al. investigated healthcare providers' perspectives on patient rights and safety. Authors reported a high level of agreement (between 88.4% and 90%) with statements regarding patient rights, suggesting strong support for patient-centered care. Additionally, a large majority (between 74.9% and 86.1%) demonstrated a good understanding of medical errors and a willingness to disclose them. However, the study identified varying opinions on assigning blame for errors, the necessity of reporting them, and who should be responsible for disclosure. Interestingly, a positive correlation was found between a healthcare provider's support for patient rights and their overall patient safety attitude [27].

AlMaani reported a generally positive outlook on patient safety culture. This was reflected in the average job satisfaction score of 80% and an overall safety climate score of 68% [28]. Within the same scope Alshammari et. al reported that handoffs and transitions during care delivery scored the lowest among

various patient safety aspects. Interestingly, the study identified positive correlations between hospital work experience and several improved patient safety dimensions, including communication and the frequency of reported events [29].

Ferrer et. al. recommended implementing two key policies that can improve patient safety in the Saudi context. Firstly, establishing a clear communication protocol is essential to ensure transparency, particularly when addressing identified errors. Secondly, fostering a non-punitive environment for error reporting is crucial. This will empower staff to learn from mistakes and proactively implement corrective measures to prevent future occurrences, without the fear of repercussions for acknowledging shortcomings [30].

C. Performance and Job Satisfaction

Alharbi et. al. were concerned about the determinants of job performance among nurses. Nurses who perceived higher internal service quality at the hospital also reported significantly stronger job performance. Nurses mostly favored supportive leadership, adequate staffing levels, effective communication channels, and access to necessary resources [31].

Allebdi and Ibrahim reported that less than half of their sample was feeling satisfied with their jobs. Interestingly, the nature of the work itself emerged as the most satisfying aspect, with 63% of respondents expressing satisfaction in this area. Conversely, financial incentives, including contingent rewards and fringe benefits, displayed the lowest satisfaction rates, at 25.2% and 16.5% respectively [32].

Al-Takroni et. al. concluded that nurses in their study reported an average level of job satisfaction overall. The questionnaire assessed various factors influencing job satisfaction. Notably, dissatisfaction with workload, weekly time off, and yearly allowances was identified among the nurses [33].

D. Conclusion

High level of agreement towards accreditation and quality standards was commonly reported among target population. Factors to improve job performance and patient safety included supportive leadership, flexible communication channels, and addressing staff shortages.

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