Research Article

Examining the Influence of Joint Commission International (JCI) Accreditation Surveys on Medication Safety Practices: A Cross-Sectional Study from Mediclinic Welcare Hospital in Dubai, UAE

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A B S T R A C T

The Joint Commission International (JCI) Accreditation is recognized for its role in ensuring healthcare quality and patient safety. However, there is insufficient research investigating the specific effects of JCI surveys on medication safety practices. This study aimed to evaluate the impact of JCI surveys on medication safety practices at Mediclinic Welcare Hospital (MWEL) located in Dubai, United Arab Emirates (UAE). A cross-sectional survey was used to collect data from healthcare providers (HCPs) at MWEL who had previously participated in at least one JCI survey. The study instrument included structured questions to assess HCPs experiences, perceptions, and recommendations regarding the impact of JCI surveys on various aspects of healthcare delivery, including medication safety practices. The final sample consisted of 176 HCPs, and most respondents strongly agreed that repeated JCI surveys positively influenced medication safety practices and culture. The study findings consistently indicated a positive perception among HCPs regarding the impact of hospital accreditation on medication management and use safety culture, medication-related outcome measures, and overall efficiencies. This study contributed to the existing knowledge regarding the impact of JCI assessments on medication safety practices among HCPs with diverse demographics and backgrounds. The study recommends improving medication safety practices in healthcare organizations and guides future research efforts. The findings of this study shed light on the effectiveness of JCI surveys in promoting medication safety practices within MWEL and identify the factors that may impact this relationship.

Keywords: Healthcare accreditation, Quality improvement, Medication safety practices, Patient safety measures, Healthcare professionals

1. Introduction

Quality evaluation in healthcare is gaining global attention from governments, providers, and consumers alike[1-3]. The coronavirus disease 2019 (COVID-19) pandemic has severely strained global health and social systems and resources[4,5]. Pandemic-related disruptions to quality activities may compromise the future readiness of health systems[6]. Investing in healthcare quality measurement is vital for fostering resilient, patient-centered, and sustainable healthcare systems[7-9]. High-quality and safe healthcare systems yield improved health outcomes and generate confidence and economic benefits[7]. Ensuring quality patient care is a top priority for physicians and healthcare facilities, driven by the goal of achieving standardized quality and patient safety[10-12]. However, measuring healthcare quality attributes such as safety, timeliness, consistency, and accuracy is challenging beyond subjective assessments by the custome[10].

The United Arab Emirates (UAE) Vision 2021 National Agenda aims to establish a globally benchmarked healthcare system[13]. This involved accrediting all public and private

hospitals according to domestic and international quality standards for medical services and personnel[14]. The UAE has advanced to the 28th position (up from 34th in 2015) for healthcare in the Legatum Prosperity Index, a global measure of prosperity indicators across 149 countries[15].

Accreditation initiatives incorporate complex quality and safety measures that are flexibly and dynamically implemented to account for diverse contextual factors within healthcare systems. Recognizing the role and investigating contributing factors, such as positive perceptions among healthcare professionals, has the potential to enhance the effectiveness of accreditation program implementation[16]. Successful accreditation organizations often align with healthcare regulations, government commitment to quality, and initiatives for healthcare improvement, creating a supportive environment[17,18].

Joint Commission International (JCI) Accreditation is an external peer review process that assesses a healthcare organization's adherence to predefined performance standards. JCIA has established accreditation standards for hospitals, encompassing medication safety requirements[19,20]. According to Joint Commission International[21], over 928 hospitals and healthcare facilities across more than 70 countries worldwide, excluding the USA, have effectively implemented JCI accreditation standards in their organizations. The UAE features numerous JCI-accredited healthcare organizations, including hospitals and clinics. Mediclinic Welcare Hospital (MWEL) in Dubai has received five accreditation records from JCI, spanning from 25 June 2010 to 2 September 2025[21].

Medication safety is vital to patient care in healthcare systems, as medication errors impose substantial financial and patient harm burdens[22-27]. Standard policies and reporting systems need to be established to implement medication safety practices in hospitals. These measures enhance healthcare professional's awareness of medication errors and foster a culture of safety and error reporting within healthcare facilities[28,29]. Developing countries need a comprehensive national-level initiative in hospitals to improve the safe utilization of medications. This initiative should encompass accreditation, certification, research support, regulation, and education[30].

An early study conducted in Saudi Arabia by Aljadhey, et al.[31] revealed that several hospitals in the country did not implement core practices to ensure medication safety. Another study by Abdulrahman, et al.[32] reported that Khartoum State in Sudan hospitals did not implement basic medication safety practices.

Prescribers, pharmacists, and nursing staff are crucial healthcare professionals (HCPs) who contribute significantly to ensuring the safe practices of medication throughout its use[33-35]. Since nurses constitute the majority of staff in hospital settings, their active engagement and involvement in the accreditation process are pivotal for successfully implementing essential medication safety standards[36]. Accreditation, both during and after the assessment process, can influence nurses' perception of patient safety culture. This includes fostering consistency and excellence in patient care, promoting quality improvements in medication error reporting, and reducing medication administration errors[37-39].

The JCI Accreditation has emerged as a vital tool for evaluating and improving healthcare quality, including medication safety[40-42]. A study by[43] found that accreditation considerably affects various patient safety aspects, such as medication safety. Previous evidence indicated that accreditation

programs can have a positive impact on healthcare organizations, despite the difficulty in measuring and maintaining all outcomes, including medication management[20,44-46]. Therefore, a range of research methods is necessary to determine the long-term effects of accreditation programs[47] accurately. A study by Baksh, et al.[48] on the long-term evaluation of accreditation demonstrated that staff perception of performance was at its highest during the first cycle and gradually declined with each subsequent survey.

Accreditation can promote the establishment of structures and processes that aid patient safety and clinical organization; however, its impact on delivering evidence-based patient care remains unclear[49,50]. Brubakk, et al.[51] conducted a systematic review that indicated that accreditation is expanding globally; however, due to insufficient evidence, no definitive conclusions could be drawn regarding its effectiveness. A scoping study by[52] indicated that accreditation programs generally improve multiple dimensions of hospital performance in the Middle East. However, some variations were noted across different countries and categories of impact. A study conducted by Abduljawad and Kattan[53] reported that hospitals within the Gulf Co-operation Council (GCC) that adopted JCI accreditation experienced positive shifts in their culture. This accreditation was a basis for increased initiatives to enhance patient safety and quality[54]. A study in the UAE by Seraidi, et al.[55] indicated that healthcare center nurses perceived an enhancement in patient care quality after implementing accreditation measures in primary healthcare centers. An additional study from the UAE by Devkaran, et al.[56] showed that accreditation could maintain enhancements throughout three accreditation cycles, reflecting that institutions should integrate approaches that guarantee care enhancements persist beyond the accreditation timeframe. JCI accreditation provides several benefits for medication management, such as enhanced risk management, decreased medication errors, and improved patient outcomes[20,57]. JCI offers a framework for evaluating medication systems, identifying areas of risk, and fostering continuous quality improvement (CQI) of practices while ensuring compliance with standards[58-60].

Implementing medication management accreditation standards and pharmacist interventions can reduce medication error rates and improve patient outcomes[34,61-63]. Based on a literature review, hospital accreditation has the most significant impact on the quality of management, followed by the quality of outcomes and employee involvement; however, limited information is available regarding the impact of repeated JCI accreditation surveys on medication safety practices and the perceived benefits associated with them[64].

HCPs hold varied perceptions of JCI accreditation and its impact on medication management. Some studies indicated improvements in quality, safety, patient outcomes, and a high level of satisfaction with JCI accreditation[40,65,66]; other studies have demonstrated that accreditation weakly correlates with HCPs overall perceptions of patient safety[67]. Factors such as experience, clarity of standards, and the presence of quality management staff may influence these attitudes[68].

Although there is existing literature on accreditation, limited research has been conducted on the perceptions and impact of Accreditation on healthcare organizations in the UAE[69]. Therefore, the current study aimed to evaluate the HCPs perceptions of the impact of multiple JCI accreditation surveys on medication safety practices. The study results could contribute to the quality and patient safety literature in healthcare settings in the UAE, among other countries worldwide.

2. Methods

2.1. Study design and methods appropriateness

A cross-sectional descriptive research design was employed to conduct a survey among HCPs at MWEL, a JCI-accredited hospital in Dubai, UAE. The study sample consisted of 176 healthcare providers who met the inclusion criteria and had participated in at least one JCI accreditation survey. The questionnaire was tailored from the tool used by El-Jardali, et al.[70], Algahtani, et al.[71], and Rana and Tyagi[72], then shaped based on the study purposes, the review of existing literature and expert opinions in hospital administration and healthcare quality team to examine the impact of five hospital JCIA surveys and to gather data that can be analyzed to answer the research questions.

For content validity, the questionnaire was circulated among three experts, each of whom independently rated each item on the questionnaire based on a binary rating scale (1 = satisfactory, 2 = unsatisfactory) on a validation form. Then, we calculated the item-level content validity index (I-CVI) to accept the questionnaire based on the threshold results. Additionally, the validated questionnaire was pilot-tested among five volunteers from the target population of HCPs to identify any issues they encountered while completing the questionnaire and gather their suggestions. The feedback received was utilized to enhance the final version of the questionnaire. Reliability analysis for the 22-item questionnaire was completed using Cronbach's alpha measure[73].

The online questionnaire was then administered using Google Forms. To ensure that each participant provides only one answer, the questionnaire was made accessible through a hospital email account. This approach is aimed at preventing multiple responses from the same participant, which can compromise the validity of the sample size.

Measurement variables in this study were constructed using a seven-point Likert scale (ranging from 1 = Strongly Disagree to 7 = Strongly Agree). The questionnaire, along with demographic information, comprised 22 items that were categorized into two main domains: a) Planning for medication system change, attitudes towards attaining and sustaining JCI medication management standards, and opinions on the impact of JCI on safe medication processes; and b) Sustaining safe medication practices post-accreditation.

The research target population included medication management staff at MWEL, with a total number of potential participants comprising 320 employed staff involved in medication management, including senior management staff, physicians, nursing staff, and pharmacists, as per the MWEL Human Resource database from February 2023.

2.2. Ethical considerations

Measures were implemented to ensure complete confidentiality and privacy of the obtained information and the respondents. Information designated as confidential was treated as such and used solely for the study's intended purpose. Safety precautions were in place to minimize potential risks to the research and participants' responses.

Informed consent was requested at the beginning of the survey and made mandatory before submitting responses. This study adhered to the guidelines outlined in the Declaration of Helsinki. A detailed research proposal was submitted for approval from the organization and regulatory bodies. Ethical permission was granted by the MWEL Research and Ethics Committee (REC) [No. MCME.CR.276.MWEL.2022], issued on 5 October 2021. In addition, the study was approved by the Dubai Scientific and Research Ethics Committee (DSREC) at Dubai Health Authority (DHA) [No. DSREC-01/2023_11], issued on 21 February 2022.

2.3. Sample size calculation and data collection

The primary data for this study was obtained through questionnaires distributed to healthcare professionals at MWEL via their official work email. The questionnaire period lasted for 15 days, from 28/02/2023 to 14/03/2023. The sample size was determined based on the current number (320) of healthcare staff involved in medication management, including senior management, physicians, nursing staff, and pharmacists, obtained from official hospital sources. With an estimated sample size of approximately 5% of the total, considering a margin of error of 5.0% (with a 95% confidence interval), the required sample size was calculated to be 175 healthcare staff using the Check Market sample size calculator[74].

The sampling technique involved sharing the survey with healthcare staff through their official email accounts. Inclusion criteria consisted of staff involved in medication management at MWEL. Exclusion criteria included technicians, administrative staff, other allied health personnel, and contracted staff such as housekeeping, catering, and security.

2.4. Data analysis

Descriptive statistics, including measures such as mean and standard deviations, were employed to depict the characteristics of the study variables, thereby offering insights into the safety culture in each question and domain.

Statistical analyses were conducted using IBM Statistical Package for Social Sciences (SPSS) for Windows, Version 29.0, developed by IBM Corp. Data sorting, cleaning, transformation (coding), summarization, normalization, validation, and storage processes were carried out using Microsoft Excel 2021. The data from the Excel file was imported into the SPSS software for further analysis.

3. Results

3.1. Study Sample

The final sample consisted of 176 respondents, **Table 1**. Among them, the majority were nurses (n = 107, 60.8%), followed by physicians (n = 44, 25.0%), pharmacists (n = 15, 8.5%), and the management team (n = 10, 5.7%, **Figure 1**). Regarding age distribution, the largest group of participants fell within the 35-44 years category (n = 65, 36.9%, **Figure 2**). Concerning ethnicity, the majority identified as Asian (n = 138, 78.4%), followed by Arab (n = 30, 17.0%), European (n = 4, 2.3%), and African (n = 4, 2.3%, **Figure 3**). The gender distribution was predominantly female (n = 139, 79%, **Figure 4**). Regarding educational level, the largest group held a bachelor's degree (n = 98, 55.7%, **Figure 5**). Work experience varied among participants, with the largest group having over 15-years of experience (n = 82, 46.6%, **Figure 6**). The number of participations in JCI Accreditation cycles also varied, with the largest group having undergone the survey five times (n = 37, 21.0%, **Figure 7**).

Table 1: Descriptive statistics for the characteristics of the respondents ($N = 176$).

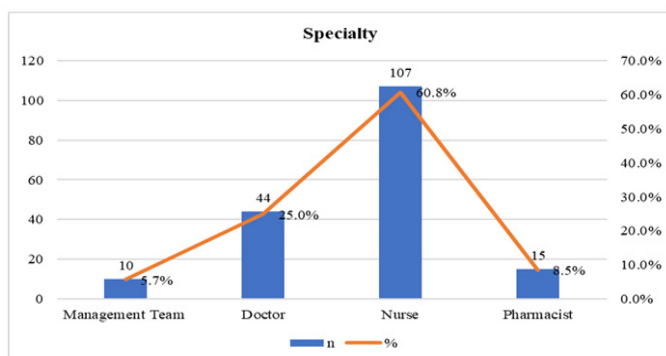| Variable	Number	Percent (%)
Specialty		
Management Team	10	5.7
Physician	44	25
Nurse	107	60.8
Pharmacist	15	8.5
Age (Years)		
25-34	39	22.2
35-44	65	36.9
45-54	56	31.8
55-64	13	7.4
Above 65	3	1.7
Ethnicity		
Asian	138	78.4
Arab	30	17
African	4	2.3
European	4	2.3
Sex		
Male	37	21
Female	139	79
Educational Level		
Diploma	31	17.6
Bachelor's	98	55.7
Master's	40	22.7
Ph.D./Doctorate	7	4
Work Experience Duration		
Less than 2 years	6	3.4
2-5 years	8	4.5
6-10 years	31	17.6
11-15 years	49	27.8
More than 15 years	82	46.6
Number of JCI Survey Participation		
One	34	19.3
Two	23	13.1
Three	43	24.4
Four	39	22.2
Five	37	21

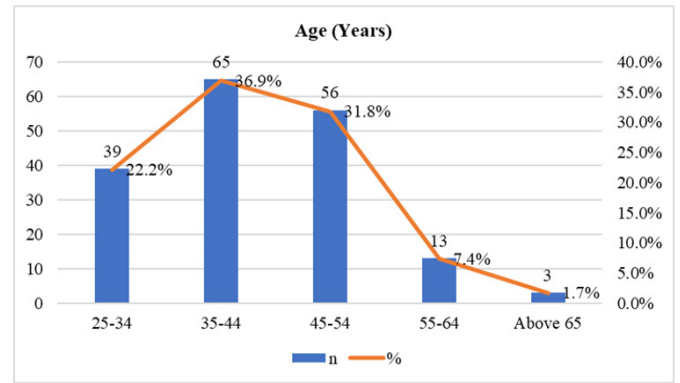**Figure 1:** Distribution of respondents by specialty.

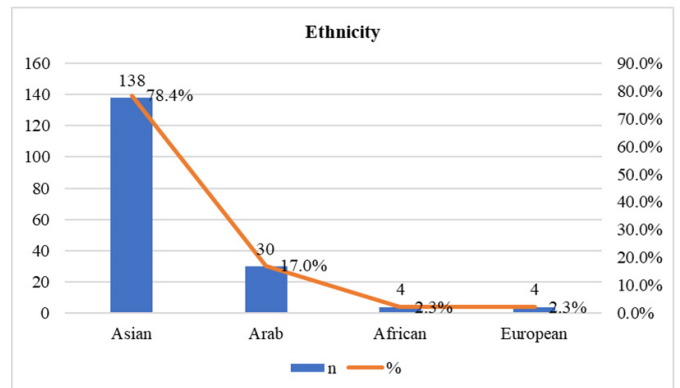**Figure 2:** Distribution of respondents by age (Years).

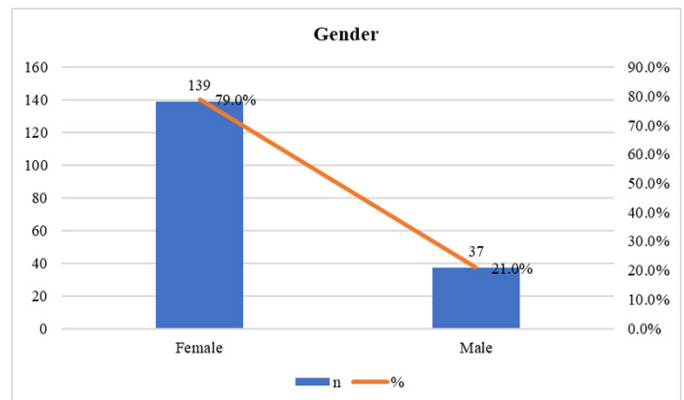**Figure 3:** Distribution of respondents by ethnicity.

Figure 4: Distribution of respondents by gender.

Figure 5: Distribution of respondents by educational level.

3.2. Validity of the survey instrument

The calculated item-level content validity index (I-CVI) values for both sections exceeded the 0.90 threshold, indicating that the questionnaire items were relevant and effectively represented the intended constructs they aimed to measure. Furthermore, the reliability test using Cronbach's alpha for the 22-item questionnaire demonstrated high internal consistency and reliability. The Cronbach's alpha coefficient for the scale

was 0.957, surpassing the commonly accepted threshold of 0.700.

Figure 6: Distribution of respondents by years of work experience

Figure 7: Distribution of respondents by number of JCI participations.

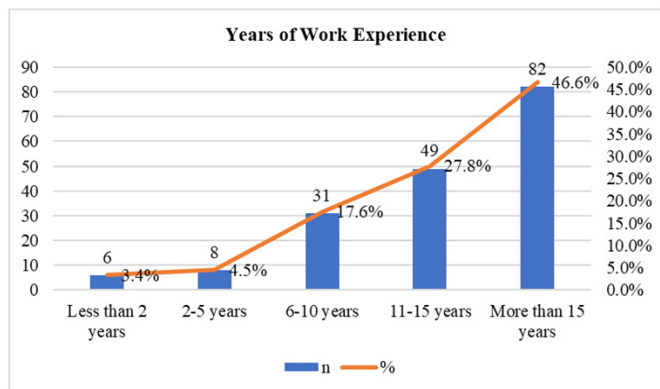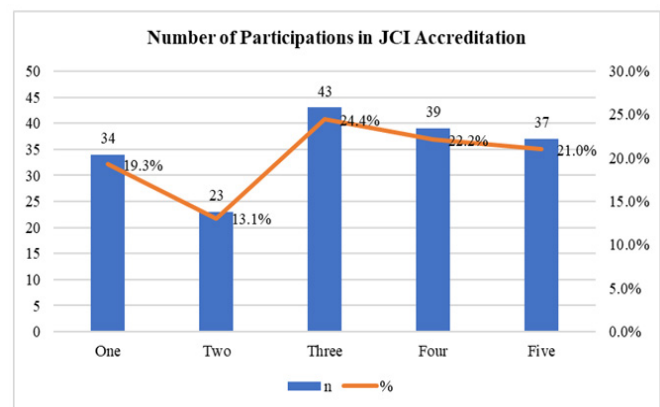**Attitudes of Participants Towards JCI Medication Management Standards and Impact on Safe Medication Use.**

The responses from various HCPs groups in the questionnaire were generally positive in both sections. The mean values for section 2 questions were 6.32 ± 0.76, while for section 3, the mean values were 6.33 ± 0.80, indicating an agreement with the content (**Table 2**).

In the attitudes section of the questionnaire, participants' responses were analyzed to assess their perceptions of obtaining and maintaining JCI medication management standards and the impact of JCI on safe medication use processes. The mean $\pm$ SD values for each question are presented in (**Table 2**).

Participants generally expressed positive attitudes toward the hospital's improvements in the quality of the medication system over the past JCI accreditation cycles (Q1, mean $\pm$ SD = 6.29 ± 0.94). They also acknowledged the implementation of essential cost-effectiveness initiatives while preparing for the last JCI survey, even in the challenging COVID-19 era (Q2, mean $\pm$ SD = 6.24 ± 0.77). The use of advanced quality measures and tools in the medication system during JCI accreditation preparations was also perceived positively (Q3, mean $\pm$ SD = 6.28 ± 0.85).

Table 2: Attitudes towards obtaining and maintaining JCI medication management standards and opinions on the impact of JCI on safe medication use processes and on maintaining safe medication practices post-accreditation.

Question				
Part 1: Attitudes toward obtaining and maintaining JCI medication management standards and opinions on the impact of JCI on safe medication use processes	**Response**	**N**	**%**	**Mean ± SD**
Q1: Over the past JCI accreditation cycles, the hospital has shown steady, measurable improvements in the quality of the medication system	Strongly disagree	1	0.60%	0.94 ± 6.29
	Disagree	2	1.10%	
	Neutral	5	2.80%	
	Somewhat agree	10	5.70%	
	Agree	74	42.00%	
	Strongly agree	84	47.70%	
Q2: During the preparation for the last JCI survey, important medication cost-effectiveness initiatives were implemented despite the challenging COVID-19 era	Somewhat disagree	1	0.60%	0.77 ± 6.24
	Neutral	5	2.80%	
	Somewhat agree	14	8.00%	
	Agree	86	48.90%	
	Strongly agree	70	39.80%	
Q3: Advanced quality measures and tools were used in the medication system during the preparations for JCI accreditation Medication Management & Use (MMU) Standards	Disagree	2	1.10%	0.85 ± 6.28
	Neutral	6	3.40%	
	Somewhat agree	7	4.00%	
	Agree	85	48.30%	
	Strongly agree	76	43.20%	
Q4: Accreditation contributes to the development of collaboration with all stakeholders in the medication system, including leadership and healthcare practitioners	Somewhat disagree	2	1.10%	0.74 ± 6.26
	Neutral	5	2.80%	
	Somewhat agree	4	2.30%	
	Agree	100	56.80%	
	Strongly agree	65	36.90%	

Q5: The Pharmacy and Senior Leadership Team (SLT) provided evident governance in maintaining an environment that supports safe medication practices	Somewhat disagree	1	0.60%	0.79 ± 6.27
	Neutral	6	3.40%	
	Somewhat agree	13	7.40%	
	Agree	80	45.50%	
	Strongly agree	76	43.20%	
Q6: Accreditation is a valuable tool for implementing positive medication safety system changes in the hospital	Disagree	2	1.10%	0.81 ± 6.41
	Somewhat disagree	1	0.60%	
	Neutral	2	1.10%	
	Somewhat agree	4	2.30%	
	Agree	76	43.20%	
	Strongly agree	91	51.70%	
Q7: Effective use of JCI medication management standards allowed the hospital to comply with applicable laws and regulations	Neutral	3	1.70%	0.63 ± 6.40
	Somewhat agree	5	2.80%	
	Agree	87	49.40%	
	Strongly agree	81	46.00%	
Q8: The JCI requirement for an effective hospital Antimicrobial Stewardship Program (ASP) helped facilitate the appropriate use of antimicrobials, thus improving the quality and safety of patient care	Somewhat disagree	1	0.60%	0.70 ± 6.33
	Neutral	4	2.30%	
	Somewhat agree	6	3.40%	
	Agree	90	51.10%	
	Strongly agree	75	42.60%	
Q9: The hospital developed and implemented an effective process to improve the safety of high-alert medications according to the medication best practices identified by the Institute for Safe Medication Practices (ISMP) and the Joint Commission Interna-(tional (JCI	Somewhat disagree	1	0.60%	0.67 ± 6.38
	Neutral	3	1.70%	
	Somewhat agree	4	2.30%	
	Agree	89	50.60%	
	Strongly agree	79	44.90%	
Q10: The hospital identified safe prescribing, ordering, and transcribing practices. Also trained staff on safe prescribing, ordering, and transcribing	Somewhat disagree	1	0.60%	0.68 ± 6.28
	Neutral	2	1.10%	
	Somewhat agree	10	5.70%	
	Agree	96	54.50%	
	Strongly agree	67	38.10%	
Q11: Medications are prepared and dispensed in clean, uncluttered, safe, and separate areas with appropriate cleanliness measures	Strongly disagree	1	0.60%	0.86 ± 6.29
	Disagree	1	0.60%	
	Somewhat disagree	1	0.60%	
	Neutral	2	1.10%	
	Somewhat agree	9	5.10%	
	Agree	86	48.90%	
	Strongly agree	76	43.20%	
Q12: Medication prescriptions or orders are reviewed for appropriateness before dispensing and administration	Disagree	1	0.60%	0.82 ± 6.30
	Somewhat disagree	1	0.60%	
	Neutral	5	2.80%	
	Somewhat agree	9	5.10%	
	Agree	81	46.00%	
	Strongly agree	79	44.90%	
Q13: Appropriate clinical pharmacist intervention is critical to ensuring patient safety when medications are part of the patient treatment plan	Somewhat disagree	1	0.60%	0.68 ± 6.36
	Neutral	2	1.10%	
	Somewhat agree	8	4.50%	
	Agree	86	48.90%	
	Strongly agree	79	44.90%	
Q14: The hospital has identified staff authorized to administer medications by job description or the privileging process	Strongly disagree	1	0.60%	0.74 ± 6.37
	Neutral	2	1.10%	
	Somewhat agree	6	3.40%	
	Agree	87	49.40%	
	Strongly agree	80	45.50%	

Question	Response	n	%	Mean ± SD
Q15: Medication effects and adverse effects on patients are monitored and documented	Somewhat disagree	1	0.60%	0.75 ± 6.32
	Neutral	3	1.70%	
	Somewhat agree	15	8.50%	
	Agree	77	43.80%	
	Strongly agree	80	45.50%	
Q16: The hospital established and implemented an effective process for reporting and acting on medication errors and near misses over the years. Staff is encouraged to report all medication events and near misses without fear of blame	Disagree	1	0.60%	0.80 ± 6.35
	Somewhat disagree	2	1.10%	
	Neutral	2	1.10%	
	Somewhat agree	8	4.50%	
	Agree	79	44.90%	
	Strongly agree	84	47.70%	
Average of Part 1				**0.76 ± 6.32**
Questions				
Part 2: Maintaining safe medication practices post-accreditation				
Q17: Managers are as equally involved as staff in maintaining safe medication practices post-accreditation; the team is motivated and has common medication safety values	Somewhat disagree	1	0.60%	0.82 ± 6.30
	Neutral	9	5.10%	
	Somewhat agree	8	4.50%	
	Agree	77	43.80%	
	Strongly agree	81	46.00%	
Q18: The hospital should create a quality system that supports implementing sustainable medication system changes based on accreditation recommendations and that accreditation is not seen as a one-off activity	Strongly disagree	1	0.60%	0.86 ± 6.26
	Somewhat disagree	1	0.60%	
	Neutral	7	4.00%	
	Somewhat agree	6	3.40%	
	Agree	87	49.40%	
	Strongly agree	74	42.00%	
Q19: The JCI medication safety standards should be part of the hospital's yearly strategic Plan	Disagree	2	1.10%	0.81 ± 6.38
	Neutral	3	1.70%	
	Somewhat agree	8	4.50%	
	Agree	75	42.60%	
	Strongly agree	88	50.00%	
Q20: Performing annual mock accreditations and frequent medication system gap audits are crucial to maintaining standards	Disagree	1	0.60%	0.74 ± 6.35
	Neutral	3	1.70%	
	Somewhat agree	9	5.10%	
	Agree	83	47.20%	
	Strongly agree	80	45.50%	
Q21: Maintaining, monitoring, and evaluating medication management essential performance indicators (KPIs) and empowering quality teams are crucial to sustaining quality	Disagree	1	0.60%	0.66 ± 6.41
	Neutral	1	0.60%	
	Somewhat agree	4	2.30%	
	Agree	87	49.40%	
	Strongly agree	83	47.20%	
Q22: Staff should receive further education and training on identifying and acting on medication events and near misses	Strongly disagree	1	0.60%	0.87 ± 6.28
	Disagree	1	0.60%	
	Neutral	6	3.40%	
	Somewhat agree	6	3.40%	
	Agree	85	48.30%	
	Strongly agree	77	43.80%	
Average of part 2				**0.80 ± 6.33**

The participants recognized the contribution of accreditation in fostering collaboration with stakeholders, including leadership and HCPs (Q4, mean ± SD = 6.26 ± 0.74). They acknowledged the evident governance the Pharmacy and Senior Leadership Team (SLT) provided in maintaining an environment that supports safe medication practices (Q5, mean ± SD = 6.27 ± 0.79). Accreditation was a valuable tool for implementing positive medication safety system changes in the hospital (Q6, mean ± SD = 6.41 ± 0.81). Moreover, effective use of JCI medication management standards was perceived as instrumental in complying with applicable laws and regulations (Q7, mean ± SD = 6.40 ± 0.63).

The participants recognized the positive impact of JCI requirements for an effective hospital Antimicrobial Stewardship Program (ASP) on the appropriate use of antimicrobials, leading to improved quality and safety of patient care (Q8, mean ± SD = 6.33 ± 0.70). They also acknowledged the hospital's effective processes for improving the safety of high-alert medications (Q9, mean ± SD = 6.38 ± 0.67). Identifying safe prescribing, ordering, and transcribing practices, along with staff training in these areas, was well perceived (Q10, mean ± SD = 6.28 ± 0.68).

Participants expressed agreement that medications were prepared and dispensed in clean, safe areas with appropriate cleanliness measures (Q11, mean ± SD = 6.29 ± 0.86). They also acknowledged the review of medication prescriptions or orders for appropriateness before dispensing and administration (Q12, mean ± SD = 6.30 ± 0.82). The critical role of appropriate clinical pharmacist intervention in ensuring patient safety was recognized (Q13, mean ± SD = 6.36 ± 0.68). Staff authorization to administer medications and the monitoring and documentation of medication effects on patients were perceived positively (Q14, mean ± SD = 6.37 ± 0.74; Q15, mean ± SD = 6.32 ± 0.75). Furthermore, establishing an effective process for reporting and acting on medication errors and near misses, with a blame-free reporting culture, was acknowledged (Q16, mean ± SD = 6.35 ± 0.80).

In the section on maintaining safe medication practices post-accreditation, participants' responses were analyzed to assess their perceptions. The mean ± SD values for each question are presented in (**Table 2**).

Participants recognized the equal involvement of managers and staff in maintaining safe medication practices post-accreditation and the presence of a motivated team with common medication safety values (Q17, mean ± SD = 6.30 ± 0.82). They agreed that the hospital should create a quality system that supports implementing sustainable medication system changes based on accreditation recommendations and that accreditation should not be seen as a one-off activity (Q18, mean ± SD = 6.26 ± 0.86). The integration of JCI medication safety standards into the hospital's yearly strategic plan was perceived positively (Q19, mean ± SD = 6.38 ± 0.81). Performing annual mock accreditations and frequent medication system gap audits to maintain standards was acknowledged (Q20, mean ± SD = 6.35 ± 0.74). Participants recognized the importance of maintaining, monitoring, and evaluating medication management essential performance indicators (KPIs) and empowering quality teams to sustain quality (Q21, mean ± SD = 6.41 ± 0.66). Additionally, they agreed that staff should receive further education and training on identifying and acting on medication events and near misses (Q22, mean ± SD = 6.28 ± 0.87).

Linear regression analysis examining the relationship between section 1 (HCPs attitudes and opinions) and section 2 (maintenance of safe medication practices post-accreditation).

The coefficient of determination (R^2) was 0.602, indicating that the predictor variables can explain 60.2% of the variability in section 2. The analysis suggested that HCP attitudes and opinions (section 1) significantly contribute to the maintenance of safe medication practices post-accreditation (Section 2), as indicated by the high standardized coefficient and low p-value (**Table 3**).

Table 3: Linear regression analysis shows the relationship between healthcare professionals' attitudes and opinions (section 1) and the maintenance of safe medication practices post-accreditation (section 2).

Model		Unstandardized Coefficients	Std. Error	Standardized Coefficients	t	p-value
1	Constant	0.894	0.336		2.66	0.009
	Section 1	0.86	0.053	0.776	16.234	0.001>
Model Summary						
Model	R	R^2	Adjusted R^2	Std. Error of the Estimate		
1	0.776[a]	0.602	0.6	0.40314		

[a]Predictors: (Constant), Section 1

4. Discussion

The current cross-sectional study examined HCPs perceptions of medication safety practices across five JCI accreditation surveys at MWEL in Dubai, the UAE. This research represents the first investigation to establish a relationship between hospital accreditation status and the perception of medication safety practices over multiple JCI accreditation cycles.

The primary study findings demonstrated generally positive attitudes towards obtaining and maintaining JCI medication management standards and the impact of JCI on safe medication use processes. The study results also pointed to the significant role of HCPs attitudes and opinions in maintaining safe medication practices post-accreditation.

Specifically, nearly half of the participants strongly agreed that the hospital had consistently improved the quality of its medication system over the past JCI accreditation cycles. This signifies the hospital's commitment to continuous enhancement and dedication to meeting the high standards JCI sets. These improvements may have resulted from rigorous self-assessment, evidence-based practice implementation, and ongoing quality improvement initiatives. Participants acknowledged the implementation of essential cost-effectiveness initiatives while preparing for the last JCI survey, even amidst the challenges posed by the COVID-19 era. This finding highlights the hospital's ability to adapt and prioritize efficient resource utilization while maintaining the highest level of medication safety. It demonstrates the organization's agility in aligning with JCI standards and embracing innovative practices to optimize patient care[75-77].

Question 6 showed the participants' strong agreement that JCI accreditation is a valuable tool for implementing positive changes in the medication safety system. This suggests that HCPs recognize the pivotal role of JCI accreditation in driving cultural transformation, fostering patient safety, and embedding best practices in the hospital's environment. The accreditation process promotes a proactive, patient-centered approach to medication safety, ultimately improving clinical outcomes[78].

Participants also acknowledged the significant contribution of JCI requirements for an effective hospital Antimicrobial

Stewardship Program (ASP). This finding highlights the hospital's commitment to combatting antimicrobial resistance and optimizing antimicrobial therapy by implementing evidence-based practices and effective stewardship. By adhering to JCI standards, the hospital ensures that patients receive appropriate antimicrobial treatment, minimizing the risk of adverse events and promoting patient care's overall quality and safety[79,80].

Participants strongly agreed that the hospital has established an effective process for reporting and acting on medication errors and near misses while fostering a blame-free reporting culture. This underscores the positive impact of JCI accreditation in cultivating a safety-conscious environment where HCPs feel comfortable reporting incidents and near misses without fear of retribution. By encouraging transparency and learning from errors, the hospital can continuously improve its medication safety practices and prevent similar occurrences in the future[81]. This finding highlights the positive impact of JCI accreditation on fostering a culture of safety and openness in addressing medication errors and near misses within the hospital. The positive perceptions expressed by the participants signify the hospital's successful integration of JCI standards into its operations, ultimately benefiting patients and contributing to the overall quality of healthcare delivery.

In the second section about safe medication use, the study revealed that respondents strongly agreed on the equal involvement of managers and staff in maintaining safe medication practices post-accreditation. The respondents also emphasized the presence of staff motivation and shared medication safety values. These findings highlight the significance of managerial involvement and staff motivation in sustaining medication safety practices following the accreditation process[82].

Half of the participants strongly agreed that the JCI medication safety standards should be part of the hospital's yearly strategic plan. This result stresses the need to continuously integrate JCI standards into the hospital's strategic planning to ensure that medication safety practices are maintained and improved over time.

Findings from the study revealed that 45.5% of respondents strongly agreed that conducting annual mock accreditations and frequent medication system gap audits are crucial for maintaining standards (Q20). This underscores the importance of ongoing monitoring and evaluation of medication safety practices to ensure compliance with JCI standards and sustain the high level of medication safety achieved during accreditation. Similarly, 47.2% of respondents strongly agreed that regularly maintaining, monitoring, and evaluating medication management essential performance indicators (KPIs) and empowering quality teams are crucial for sustaining quality (Q21). This highlights healthcare professionals' recognition of the significance of assessing medication management KPIs and empowering quality teams to enhance medication safety practices post-accreditation. Furthermore, 43.8% of respondents strongly agreed that staff should undergo continuous education and training on identifying and addressing medication events and near misses (Q22), emphasizing the essential role of staff education and training in maintaining medication safety standards and fostering a culture of learning and improvement within the hospital.

The descriptive statistics analysis conducted on the data from Mediclinic Welcare Hospital demonstrates a high level of agreement among healthcare professionals regarding the significance of maintaining safe medication practices post-JCI Accreditation. The mean score for Positive Perception indicates a strong positive impact of JCI accreditation on medication safety practices, with a value of 6.4029 out of 7. Moreover, the analysis of the Number of JCI Participations reveals that ongoing efforts are being made, as evidenced by a mean number of participations of 3.13 out of 5. These findings underscore the importance of continuous monitoring, evaluation, education, and training to sustain the elevated standards established by JCI accreditation[83].

The linear regression analysis revealed a statistically significant positive relationship between healthcare professionals' attitudes toward obtaining and maintaining JCI medication management standards and safe medication practices post-accreditation. This finding emphasizes the influential role of healthcare professionals' attitudes in sustaining safe medication practices after the accreditation process. It underscores the importance of their perceptions and beliefs regarding JCI medication management standards in ensuring ongoing adherence to safe medication practices within the healthcare organization.

Although this study provided a foundation for future research to enhance the understanding of the impact of JCI accreditation on medication safety practices, several limitations should be mentioned as follows: Firstly, the sample size was small and limited to healthcare professionals in a single center, which could affect the generalizability of the findings to other populations. Additionally, the questionnaire used in the study consisted only of structured questions and lacked open-ended questions. The investigation was also restricted to the period after the hospital's fifth accreditation, limiting the study's ability to capture the effects of JCI accreditation over different periods. Self-reported data was used in the study, which could introduce social desirability and recall biases. Furthermore, the study relied on subjective assessments of healthcare professionals and did not consider other patient outcome factors.

5. Conclusion

This research investigated the impact of five hospital JCI accreditation surveys on medication safety practices at Mediclinic Welcare Hospital in Dubai, UAE, and the maintenance of these practices post-accreditation. All healthcare professionals viewed the planning stage as a favorable aspect of JCI accreditation. However, their perceptions varied regarding implementing and sustaining post-accreditation changes[84].

The findings indicate that healthcare professionals at the hospital recognize the value of JCI accreditation in driving improvements in medication safety practices. They also emphasize the importance of continuously assessing medication management KPIs, empowering quality teams, and integrating JCI standards into the hospital's strategic planning to ensure the sustainability of medication safety practices.

The top two scored questions in each section of the questionnaire highlight the significance of JCI accreditation as a catalyst for change and its role in promoting a culture of safety and quality within the hospital. Moreover, the results underscore the need for hospitals to maintain, monitor, and evaluate medication management performance indicators and empower quality teams to sustain the high standards set by JCI accreditation.

6. Future Research

This study provides a foundation for future research to enhance the understanding of the impact of JCI accreditation on medication safety practices. These areas include investigating effective interventions and strategies, examining barriers and facilitators to implementation, conducting longitudinal studies, comparing medication safety practices between accredited and non-accredited hospitals, exploring healthcare professionals' experiences, and comparing the effectiveness of JCI accreditation with other international programs.

7. Declarations

7.1. Funding

Not applicable.

7.2. Availability of data and materials

The data supporting this study's findings are available from the corresponding author upon reasonable request.

7.3. Conflict of interest

The authors declare that they have no competing interests.

7.4. Author contributions

MS performed data collection, entry, analysis, and interpretation.

MS contributed to the manuscript development.

AH contributed to data analysis and manuscript review.

Both authors read and approved the final manuscript.

7.5. Acknowledgments

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