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Healthcare providers knowledge, attitude, and barriers on knowledge management: a cross-sectional survey in Qatar

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Abstract:
Background/Aim: Knowledge management (KM) plays an important role in healthcare organizations by supporting effective decision-making, knowledge sharing, and continuous professional learning. In complex hospital environments, efficient management of clinical knowledge can improve patient safety, organizational learning, and quality of care. However, limited empirical evidence exists regarding healthcare professionals' perceptions, motivation, and barriers related to KM practices in tertiary healthcare settings in Qatar. Therefore, this study aimed to assess healthcare professionals' knowledge, attitudes, and perceived barriers toward knowledge management in a tertiary hospital and to examine their association with sociodemographic characteristics.

Methods: A cross-sectional quantitative survey was conducted among healthcare professionals working in a tertiary hospital in Qatar. The sample size was 225 participants. Data were collected using the Applied Knowledge Management Instrument (AKMI), which assessed nine KM domains: perceptions, intrinsic motivation, extrinsic motivation, knowledge synthesis, knowledge sharing, cooperation, leadership, organizational culture, and barriers. Responses were recorded on a five-point Likert scale. The study was conducted between June 2020 to July 2021.

Results: Participants demonstrated generally positive KM practices, with a mean total score of 158.21 ± 15.77. Organizational culture showed the highest mean score (32.76 ± 4.19), followed by perceptions (21.59 ± 2.59) and sharing (20.43 ± 3.01). Leadership and barriers showed comparatively lower scores. Significant associations were observed between years of experience and extrinsic motivation, knowledge sharing, and perceived barriers ($p < 0.05$).

Conclusion: Healthcare professionals reported favorable attitudes toward knowledge management, highlighting the importance of supportive organizational culture and collaborative practices. Strengthening leadership engagement and reducing system-level barriers may further enhance knowledge sharing and organizational learning in tertiary healthcare settings.

Keywords: Knowledge management; healthcare professionals; knowledge sharing; organizational culture; leadership; barriers; tertiary hospital; Qatar.

I. Introduction

Knowledge is a strategic resource for both individuals and organizations because it supports interpretation of information, informed judgment, and continuous improvement in practice (Wiig, 1997). In knowledge management (KM), a fundamental distinction is made between explicit knowledge codified and transferable through documents, numbers, and symbols and tacit knowledge experiential, context-specific, and often difficult to articulate (Henry, 2010). Tacit knowledge is particularly important in health care, where clinical decisions frequently depend on contextual judgment and pattern recognition that cannot be fully captured in formal guidelines or records (Henry, 2010). A widely applied theoretical lens explaining how tacit and explicit knowledge interact is the SECI model - socialization, externalization, combination, and internalization—which describes organizational knowledge creation as a dynamic process of converting tacit knowledge into explicit forms and back again through dialogue, shared work, and learning-by-doing (Nonaka, 1994; Nonaka & Takeuchi, 1995).

KM emerged as a formal management field in the late twentieth century, driven by advances in information systems, the growth of digital data, and increasing recognition that intangible assets—such as human expertise, routines, and organizational memory—shape performance and innovation (Bontis, 1996). Contemporary KM approaches are often described along two complementary orientations: a technology- and systems-centered perspective focused on capturing, storing, retrieving, and distributing knowledge; and a people-centered perspective emphasizing culture, leadership, motivation, and collaboration to enable knowledge sharing and application (Kothari et al., 2011). This duality is highly relevant in health care, where digital tools (electronic health records, decision support, databases, communication platforms) can expand access to information, yet clinical knowledge use remains dependent on human interpretation, trust, and team-based sense-making (Kothari et al., 2011: Bates, 2003). In practical terms, technology may increase the timeliness and accessibility of evidence, but clinicians and interprofessional teams still determine how knowledge is applied to diagnosis, treatment, and care planning (Bates, 2003).

Hospitals are complex sociotechnical systems involving multiple professional groups, specialized units, and interdependent workflows. This complexity increases the need for effective knowledge flows across teams and services (Anderson & McDaniel, 2000). The exponential expansion of biomedical knowledge has led to increasing information overload, making it challenging for clinicians to efficiently locate and apply the most relevant evidence during clinical decision-making (Densen, 2011).Evidence-based practice requires both access to high-quality information and the capability to retrieve and apply it efficiently under time pressure—an increasing challenge as the clinical evidence base expands (Choudhry, Fletcher & Soumerai, 2005). These challenges highlight the importance of structured knowledge management systems that ensure timely access to relevant information within clinical workflows, supporting effective decision-making at the point of care (Sittig & Singh, 2012).

Patient safety concerns further reinforce the need for such systems, as preventable adverse events—particularly medication-related errors—continue to impose substantial clinical and economic burdens on healthcare organizations (Classen et al., 2011; Makary & Daniel, 2016). Evidence has shown that a significant proportion of these events are avoidable and are often linked to gaps in information access, communication, and system design, leading to unnecessary harm and increased healthcare costs (Classen et al., 2011). In response, knowledge-enabled interventions—such as computerized alerts and decision-support approaches—have demonstrated the potential to reduce adverse drug events when carefully integrated into clinical processes (Bates, 2003). At the same time, systematic evidence indicates that clinical performance may decline over time without deliberate updating and reinforcement, emphasizing organizational responsibility for enabling continuous learning and evidence uptake (Choudhry, Fletcher & Soumerai, 2005). Together, these findings position KM not as an optional add-on, but as a practical organizational approach to support safer, more consistent, and more up-to-date clinical decision-making (Kohn, Corrigan & Donaldson, 2000).

Within this context, knowledge management in healthcare has been linked to improved clinical outcomes by enhancing decision-making through the use of knowledge systems, standardized protocols, and decision-support tools, which can reduce errors and improve the reliability of care delivery (Garg et al., 2005; Kawamoto et al., 2005). Second, KM can strengthen interprofessional collaboration and innovation by enabling shared understanding, coordinated care, and collective learning across disciplines and sites (Kothari et al., 2011). Third, KM can improve quality and efficiency by accelerating translation of evidence into practice, improving access to organizational memory, and retaining learning despite staff turnover (Karamitri, Talias & Bellali, 2017). However, healthcare organizations are often slower to adopt comprehensive knowledge management strategies due to factors such as heavy workload demands, limited system usability, professional silos, and concerns related to data security and trust(Nicolini et al., 2008).Evidence indicates that successful KM implementation in healthcare depends on

alignment with organizational goals, strong leadership support, integration into routine clinical workflows, and a culture that promotes knowledge sharing, whereas initiatives driven solely by technology without organizational engagement often fail to achieve sustained impact (Ferlie et al., 2005).

In Qatar, tertiary hospitals operate in complex, high-acuity and multicultural environments where effective knowledge sharing across disciplines is essential for safe and efficient care delivery (El-Jardali et al., 2011). However, limited context-specific evidence exists regarding healthcare professionals' knowledge, attitudes, and perceived barriers toward knowledge management, highlighting the need for locally grounded assessments to guide organizational improvements (Almashmoum et al., 2024). Understanding these factors can support targeted strategies such as leadership support, structured communication, and improved knowledge-sharing systems to enhance clinical performance and patient outcomes (Almashmoum et al., 2024).

II. Methodology

Objectives

Primary Objective:

To assess healthcare professionals' knowledge, attitudes, and perceived barriers toward knowledge management in a tertiary hospital in Qatar.

Secondary Objective:

To examine the association between knowledge management domains and sociodemographic characteristics.

Study Design

This study employed a cross-sectional quantitative survey design to assess healthcare professionals' knowledge, attitudes, and perceived barriers related to knowledge management practices in a tertiary hospital setting. The cross-sectional design was considered appropriate because it enabled the assessment of participants' responses at a single point in time and allowed comparison of knowledge management domains across sociodemographic and professional characteristics.

Study Setting and Population

The study was conducted at a tertiary hospital in Qatar under Hamad Medical Corporation (HMC), the principal public healthcare provider in the country, which comprises multiple specialist and community hospitals.

The study population comprised all healthcare professionals working at this tertiary hospital during the study period. This included physicians, nurses, allied health professionals, and other hospital personnel involved in healthcare delivery and support services.

Inclusion and Exclusion Criteria

All healthcare professionals who had a valid license to practice were eligible to participate in the study. Staff members who were on temporary assignment, contract-based employment, in their probationary period, or not directly available during the data collection period were excluded. This approach was used to ensure that participants had adequate exposure to the hospital environment, leadership practices, communication systems, and organizational culture related to knowledge management.

Survey Tool

Data was collected using the Applied Knowledge Management Instrument (AKMI), a structured self-administered questionnaire developed to assess knowledge management practices in healthcare settings (Karamitri, Talias & Bellali, 2020).

The instrument consisted of **two sections**.

The first section collected sociodemographic and professional information, including age, gender, marital status, years of professional experience, educational qualification, and job title.

The second section assessed knowledge management-related domains and included items grouped under the following dimensions: perceptions, intrinsic motivation, extrinsic motivation, knowledge synthesis, knowledge sharing, cooperation, leadership, organizational culture, and barriers to knowledge management.

Participants responded to the questionnaire items using a five-point Likert scale scored as follows: strongly disagree (−2), disagree (−1), neutral (0), agree (+1), and strongly agree (+2).

Higher scores indicated more positive attitudes and perceptions toward knowledge management practices. For negatively worded items, reverse coding was applied during data analysis.

Face and Content Validity

Face validity and content validity of the questionnaire were established before the main survey. The survey instrument was reviewed by three experienced healthcare professionals with different academic and professional backgrounds. These experts examined the questionnaire for clarity, relevance, comprehensiveness, wording, and appropriateness of the items in relation to the study objectives.

Based on their comments, minor revisions were made to improve item wording, clarity of language, and alignment of the questions with knowledge management constructs. This process helped ensure that the instrument appeared appropriate to respondents and adequately covered the intended content domains.

Pilot Testing

Prior to the main study, a pilot study was conducted among 30 participants. The purpose of this step was to ensure that the questions were understandable, appropriately worded, and suitable for the target population. Feedback obtained during this phase contributed to the refinement of the final survey instrument used in the main study.

Internal Consistency Reliability

Internal consistency reliability of the questionnaire was assessed using Cronbach's alpha coefficient based on the responses of the 30 participants.

The overall Cronbach's alpha for the questionnaire was 0.802, indicating good internal consistency. Domain-wise Cronbach's alpha coefficients were also calculated and showed acceptable reliability across the instrument dimensions. The reported values were as follows: perceptions 0.724, intrinsic motivation 0.626, extrinsic motivation 0.739, knowledge synthesis 0.652, knowledge sharing 0.570, cooperation 0.567, leadership 0.717, culture 0.821, and barriers 0.644.

These findings indicate that the instrument had moderate to good internal consistency across domains and was appropriate for assessing knowledge management domains among healthcare professionals in the present study.

Sample Size

The sample size was calculated using Slovin's formula with a 95% confidence interval and margin of error of 5%. The final sample size for the main survey was **225 participants**. This sample size was considered adequate for the planned statistical analyses.

Data Collection

The final questionnaire was distributed electronically to eligible healthcare professionals through institutional email. Participants received an invitation containing the study information sheet and a link to the online survey. The information sheet explained the purpose of the study, voluntary nature of participation, anonymity of responses, and estimated time required to complete the questionnaire.

The questionnaire required approximately 10 to 15 minutes to be completed.

Data Management and Confidentiality

Data was collected anonymously through an online survey platform. No direct identifiers, such as names or employee identification numbers, were collected. All completed responses were exported into a secure database and stored in a password-protected computer accessible only to the principal investigator.

After completion of the study, the dataset was maintained in de-identified form, and all research data will be retained securely for a minimum of **five years** in accordance with institutional policy.

Statistical Analysis

Data analysis was performed using **Statistical Package for the Social Sciences (SPSS) version 21.0**.

Descriptive statistics were used to summarize the characteristics of the participants and the responses to questionnaire items. Continuous variables were presented using means and standard deviations or medians and interquartile ranges, depending on the distribution of the data. Categorical variables were summarized using frequencies and percentages.

The normality of domain and total scores was assessed using the Shapiro–Wilk test. For comparisons between two groups, the independent sample t-test was used when data were normally distributed, while the Mann–Whitney U test was used for non-normally distributed data. For comparisons across more than two groups, one-way ANOVA or the Kruskal–Wallis test was applied as appropriate. All statistical tests were two-tailed, and a p-value of less than 0.05 was considered statistically significant.

III. Results

The study included 225 healthcare professionals, with the majority being female (60.0%) and males representing 40.0% of the participants. The mean age of the respondents was 37.17 ± 7.81 years. Most participants were married (84.0%), while 14.7% were single and 1.3% were separated. In terms of professional experience, nearly half of the respondents had 11–25 years of experience (47.1%), followed by 6–10 years (32.4%), 3–5 years (10.2%), 26 years and above (8.4%), and 2 years and below (1.8%). Regarding educational qualifications, the majority held a bachelor's degree (66.7%), followed by master's degrees (13.8%), diplomas (11.6%), and PhDs (8.0%). Participants represented a wide range of professional roles, with staff nurses constituting the largest group (62.7%), followed by graduate registered nurses (7.6%), physiotherapy specialists (5.3%), and respiratory therapists (4.9%), while the remaining participants held various clinical, managerial, and administrative positions within the hospital (Table 1).

Table: 1 Socio demographic characteristics of the study participants

Variable	**n= 225** **Mean (SD)**
Age (years)	37.17(7.81)
	n (%)
Gender	
Male	90(40.00)
Female	135(60.00)
Marital Status	
Married	189(84.00)
Separated	3(1.33)
Single	33(14.67)
Years of Experience	

2 Years and Below	4(1.78)
3 to 5 Years	23(10.22)
6 to 10 Years	73(32.44)
11 to 25 Years	106(47.12)
26 Years and above	19(8.44)
Education	
Bachelor	150(66.66)
Diploma	26(11.56)
Masters	31(13.78)
PhD	18(8.00)
Job title	
Associate Consultant	5(2.22)
CNS	3(1.33)
Clinical Perfusionist	5(2.22)
Consultant	7(3.11)
Director of Nursing	4(1.78)
Nurse Educator	1(0.44)
Engineer	2(0.89)
Graduate Registered Nurse	17(7.56)
Quality Improvement	1(0.44)
Nursing House Supervisor	1(0.44)
Occupational therapist	4(1.78)
Physician	6(2.67)
Research scientist	1(0.44)
Respiratory therapist	11(4.89)
Secretary	1(0.44)
Senior consultant	3(1.33)
Staff Nurse	141(62.69)
Physiotherapy specialist	12(5.33)

Overall, participants demonstrated generally positive knowledge management scores across all domains. The mean total knowledge management score was 158.21 ± 15.77, indicating a moderate to high level of knowledge management practices among the respondents. Among the domains, organizational culture showed the highest mean score (32.76 ± 4.19), suggesting strong perceptions of a supportive knowledge culture within the hospital. Knowledge sharing (20.43 ± 3.01) and perceptions (21.59 ± 2.59) also showed relatively high scores, indicating favorable attitudes toward knowledge exchange and awareness of knowledge management practices. Cooperation (17.03 ± 1.90), intrinsic motivation (16.68 ± 2.26), and extrinsic motivation (16.18 ± 2.69) reflected positive engagement in collaborative knowledge activities. In contrast, leadership (11.83 ± 2.25) and barriers (9.65 ± 2.13) showed comparatively lower mean scores, suggesting potential areas for improvement in leadership support and system-related challenges. When categorized, nearly half of the participants demonstrated moderate knowledge management levels (48.44%), while 26.22% reported low levels and 25.33% reported high levels, indicating variability in knowledge management engagement across the study population (Table 2).

Table 2: Summary of overall and domain wise score

Variable	Mean (SD)
Total score	158.21(15.77)
Perceptions	21.59(2.59)
Intrinsic motivation	16.68(2.26)
Extrinsic motivation	16.18(2.69)
Synthesis	12.24(1.77)
Sharing	20.43(3.01)
Cooperation	17.03(1.90)
Leadership	11.83(2.25)
Culture	32.76(4.19)
Barriers	9.65(2.13)
Total score categories n (%)	
Low	59(26.22)
Moderate	109(48.44)
High	57(25.33)

Perceptions

The perception dimension showed similar scores across demographic groups. Female participants reported a mean perception score of 21.62 (SD = 2.78), while males had a comparable mean of 21.54 (SD = 2.29) with no significant difference (p = 0.8259). Median perception scores across marital status groups ranged from 20 to 21, and across years of experience ranged from 20 to 22 with no statistically significant associations (p = 0.4466). Educational groups also demonstrated comparable median scores between 20.5 and 21, indicating consistent perceptions of knowledge management across participants (Table 3).

Intrinsic Motivation

Intrinsic motivation scores were generally consistent across demographic categories. Female participants had a mean score of 16.74 (SD = 2.32) compared with 17.08 (SD = 2.15) among males, with no statistically significant difference (p = 0.2746). Median intrinsic motivation scores across marital status groups were similar, ranging around 16, and across years of experience ranged between 15.5 and 17 without significant differences (p = 0.4085). Participants with doctoral qualifications showed slightly higher median scores (18) compared with other education groups, though the difference was not statistically significant (p = 0.1763) (Table 3).

Extrinsic Motivation

Extrinsic motivation demonstrated moderate variation across demographic variables. Male participants reported a slightly higher mean score of 16.43 (SD = 2.45) compared with females at 16.01 (SD = 2.82), although the difference was not statistically significant (p = 0.2446). A significant association was observed with years of experience (p = 0.0323), where participants with 6–10 years of experience showed the highest median score of 17. Educational level also showed a statistically significant difference (p = 0.0390), with PhD holders reporting the highest median extrinsic motivation score of 17. These results suggest that professional experience and education may influence external motivational factors related to knowledge management (Table 3).

Knowledge Synthesis

Knowledge synthesis scores were relatively uniform across demographic groups. Female participants reported a mean synthesis score of 12.24 (SD = 1.82), which was almost identical to male participants with a mean of 12.23 (SD = 1.69), indicating no significant gender difference (p = 0.9633). Median scores across marital status categories remained stable at approximately 12 with no statistically significant differences (p = 0.9728). Similarly, years of experience and educational level showed consistent median values around 12, suggesting comparable levels of knowledge synthesis across participants (Table 3).

Knowledge Sharing

Knowledge sharing showed slight variation across demographic variables. Male participants reported a higher mean sharing score of 20.92 (SD = 2.65) compared with female participants at 20.09 (SD = 3.19), with this difference reaching statistical significance (p = 0.0438). Median sharing scores across marital status groups were similar at approximately 20, indicating consistent sharing behaviors. A significant association was also found with years of experience (p = 0.0282), where participants with 6–10 years of experience reported higher sharing levels (median = 21). Educational level did not show significant differences in sharing scores (p = 0.8269) (Table 3).

Cooperation

Cooperation scores were largely similar across the demographic groups examined. Female participants had a mean cooperation score of 16.92 (SD = 1.94) compared with 17.19 (SD = 1.83) among males, with no statistically significant difference (p = 0.3090). Median scores across marital status categories ranged between 16 and 17, indicating consistent cooperative behaviors. Likewise, years of experience and education level showed no statistically significant differences, with median scores generally ranging from 16 to 17 (p = 0.3770 and p = 0.1377 respectively). These findings indicate that cooperation related to knowledge management practices was similar across demographic groups (Table 3).

Leadership

Leadership-related knowledge management scores showed minimal variation across demographic groups. Female participants reported a mean leadership score of 11.91 (SD = 2.42), while males reported a mean of 11.70 (SD = 1.95), with no significant difference between groups (p = 0.4910). Median leadership scores across marital status groups were consistent at around 12. Years of experience and educational level also demonstrated similar median values, with no statistically significant associations observed (p = 0.0661 and p = 0.5056 respectively). Overall, leadership support for knowledge management appeared consistent across participant characteristics (Table 3).

Organizational Culture

Organizational culture related to knowledge management demonstrated comparable scores among demographic groups. Male participants reported a slightly higher mean culture score of 33.03 (SD = 3.72) compared with females at 32.58 (SD = 4.48), although this difference was not statistically significant (p = 0.4258). Median culture scores across marital status groups remained stable at approximately 32. Participants with varying years of experience reported similar culture scores ranging between 31 and 32.5, indicating no significant association (p =

0.1541). Educational level also did not significantly influence culture scores, with medians ranging between 32 and 33 (p = 0.4163) (Table 3).

Barriers to Knowledge Management

Barriers to knowledge management showed limited variation across most demographic groups. Female and male participants reported nearly identical mean scores of 9.65 (SD = 2.24) and 9.64 (SD = 1.96) respectively, with no statistically significant gender difference (p = 0.9797). Median barrier scores across marital status groups ranged from 9 to 10, indicating similar perceived obstacles. However, years of experience showed a significant association with barriers (p = 0.0028), suggesting that perceptions of barriers varied depending on professional experience. Educational level also demonstrated a statistically significant relationship (p = 0.0276), with PhD holders reporting the lowest median barrier score of 8 (Table 3).

Table 3: Association between Knowledge Management Dimensions and Demographic Variables

Variables	N	Perception, mean (SD)	Intrinsic motivation, mean (SD)	Extrinsic motivation, mean (SD)	Synthesis, mean (SD)	Sharing, mean (SD)	Cooperation, mean (SD)	Leadership, mean (SD)	Culture, Mean (SD)	Barriers, Mean (SD)	Total score, mean (SD)
Gender											
Female	135	21.62(2.78)	16.74(2.32)	16.01(2.82)	12.24(1.82)	20.09(3.19)	16.92(1.94)	11.91(2.42)	32.58(4.48)	9.65(2.24)	158.08(16.96)
Male	90	21.54(2.29)	17.08(2.15)	16.43(2.45)	12.23(1.69)	20.92(2.65)	17.19(1.83)	11.70(1.95)	33.03(3.72)	9.64(1.96)	159.91(13.82)
p-value		0.8259	0.2746	0.2446	0.9633	0.0438	0.3090	0.4910	0.4258	0.9797	0.3952
Marital status	N	Perceptions, Median (IQR)	Intrinsic motivation, Median (IQR)	Extrinsic motivation, Median (IQR)	Synthesis, Median (IQR)	Sharing, Median (IQR)	Cooperation, Median (IQR)	Leadership, Median (IQR)	Culture, Median (IQR)	Barriers, Median (IQR)	Total score, Median (IQR)
Married	189	21(20,24)	16(10,17)	16(15,18)	12(12,13)	20(19,23)	16(16,18)	12(11,13)	32(31,34)	9(8,11)	159(152,159)
Separated	3	20(20,22)	16(13,20)	16(13,19)	12(10,15)	20(16,23)	16(16,18)	12(10,14)	32(31,32)	9(8,10)	153(140,171)
Single	33	20(20,25)	16(15,19)	16(16,18)	12(12,13)	20(18,23)	16(16,20)	12(11,14)	32(31,38)	9(8,12)	154(150,178)
p-value		0.7921	0.7623	0.8972	0.9728	0.7422	0.7480	0.5380	0.8060	0.5089	0.7413
Years of Experience											
<=2years	4	20(20,22)	15.5(15,17)	15.5(14.5,16)	11(10,12.5)	16.5(14,20)	15.5(14.5,16.5)	11.5(10.5,13.5)	32.5(28.5,35)	9.5(7.5,11)	149(142,158)
3-5years	23	21(20,25)	16(16,20)	16(16,20)	12(12,15)	20(20,24)	16(16,20)	12(12,15)	32(31,39)	10(10,14)	162(151,188)
6-10years	73	22(20,25)	17(16,19)	17(16,18)	12(12,13)	21(20,24)	17(16,19)	12(12,13)	32(31,36)	10(8,10)	161(155,169)
11-25years	106	21(20,24)	16(15,19)	16(15,17)	12(11,13)	20(18,22)	16(16,18)	12(11,12)	32(31,34)	9(8,10)	156(149,165)
>26years	19	20(19,24)	17(15,19)	16(12,18)	12(12,13)	21(18,23)	17(16,20)	12(10,13)	31(29,34)	9(8,9)	156(143,165)
p-value		0.4466	0.4085	0.0323	0.2918	0.0282	0.3770	0.0661	0.1541	0.0028	0.0135
Education											
BSN	150	20.5(19,22)	16(15,17)	16(15,16)	12(12,13)	20.15(2.68)	16(16,17)	12(10,12)	32(31,34)	9(8,10)	155.5(150,163)
Diploma	26	21(20,25)	16(15,19)	16(15,19)	12(12,14)	20.55(3.22)	16(16,18)	12(11,13)	32(31,35)	10(8,11)	158.5(151,168)
Masters	31	20(20,25)	16(16,19)	16(14,16)	12(11,13)	20.29(2.65)	16(16,19)	12(11,13)	33(32,35)	9(8,10)	157(152,169)
PhD	18	21(20,24)	18(16,19)	17(16,19)	12(11,13)	20.00(2.38)	17(16,20)	12(10,13)	32.5(31,34)	8(8,9)	159(151,168)

IV. Discussion

This study found that healthcare professionals in a large tertiary hospital reported generally positive knowledge management practices across multiple domains, including perceptions, knowledge sharing, cooperation, and organizational culture. The overall results indicate that participants recognized the value of knowledge creation, exchange, and utilization within clinical environments. These findings align with previous research demonstrating that knowledge management plays a central role in improving healthcare performance, organizational learning, and clinical decision-making in complex healthcare systems (Alavi & Leidner, 2001). Furthermore, the relatively strong scores observed in several knowledge management domains suggest that healthcare professionals operate within environments where learning and collaboration are encouraged, which is considered essential for delivering safe and evidence-based patient care (Ryu et al., 2003).

The perception domain demonstrated consistent scores across demographic groups, suggesting that healthcare professionals share similar attitudes toward the importance of knowledge management in clinical practice. Positive perceptions toward knowledge management are critical because they influence professionals' willingness to engage in knowledge-sharing activities and collaborative learning processes. Studies by Kim and Lee and by Lin have shown that employees who perceive knowledge sharing as beneficial are more likely to participate actively in organizational knowledge exchange and collaborative problem-solving (Kim & Lee, 2006; Lin, 2007). In healthcare environments, such positive perceptions facilitate communication among professionals and contribute to the effective transfer of clinical knowledge that supports improved patient outcomes (Kothari et al., 2011).

Intrinsic motivation toward knowledge management was also relatively high among participants, suggesting that healthcare professionals are internally driven to acquire and share knowledge as part of their professional responsibilities. Intrinsic motivation is particularly important in healthcare because professionals must continuously update their knowledge to keep pace with evolving clinical guidelines and technological advancements. Research by Foss and colleagues and by Lin highlights that intrinsically motivated employees are more likely to engage in knowledge-sharing behaviors and collaborative learning within organizations (Foss et al., 2009; Lin, 2007). In healthcare settings, such motivation can contribute to continuous professional development, improve clinical competence, and facilitate the adoption of evidence-based practices among healthcare teams (Melnyk et al., 2012).

Extrinsic motivation showed some variation across demographic characteristics, particularly in relation to years of experience and educational level. Participants with greater experience and higher academic qualifications reported slightly higher extrinsic motivation levels, suggesting that external factors such as professional recognition, career advancement, and institutional incentives may influence knowledge-sharing behaviors. Previous studies have reported similar findings, indicating that organizational rewards and recognition systems can encourage healthcare professionals to share knowledge and participate in collaborative learning activities (Ryu et al., 2003). These findings emphasize the importance of institutional policies that support knowledge exchange through structured incentives and professional recognition mechanisms.

Knowledge synthesis scores remained consistent across demographic groups, indicating that healthcare professionals regularly generate knowledge through clinical experience, observation, and professional interaction. Knowledge synthesis represents the process through which individuals integrate existing knowledge with new experiences to develop improved clinical practices. Nonaka and Takeuchi describe this process as a dynamic cycle of knowledge creation in which tacit knowledge from professional experience is transformed into explicit knowledge that can be shared within organizations (Nonaka & Takeuchi, 1995). In healthcare contexts, knowledge synthesis frequently takes place through interdisciplinary collaboration, reflective practice, and collective clinical decision-making, all of which contribute to enhanced patient outcomes and organizational learning (Reeves et al., 2017).

Knowledge sharing demonstrated statistically significant differences across some demographic characteristics, particularly gender and years of professional experience. Participants with moderate levels of experience reported the highest shared scores, suggesting that professionals at this career stage may be more actively involved in collaborative learning environments. Knowledge sharing is widely recognized as a critical component of effective healthcare systems because it facilitates the transfer of clinical expertise and supports interdisciplinary collaboration. Evidence suggests that effective knowledge sharing among healthcare teams enhances communication, minimizes clinical errors, and contributes to improved patient safety outcomes (Leonard et al., 2004; Manser, 2009).

Cooperation scores were consistently high across demographic groups, indicating strong collaborative behaviors among participants. Cooperation among healthcare professionals is essential for effective interdisciplinary care delivery and plays a key role in facilitating knowledge exchange within healthcare organizations. Studies have shown that cooperative work environments enhance communication, improve problem-solving capacity, and strengthen organizational learning processes (Kim & Lee, 2006). The high cooperation scores observed in this study therefore suggest that participants operate within collaborative clinical environments that support teamwork and knowledge exchange.

Leadership support for knowledge management received comparatively lower scores than other domains. Leadership plays a crucial role in promoting knowledge management by establishing supportive policies, encouraging knowledge sharing, and providing resources for organizational learning. Evidence indicates that

leadership plays a critical role in promoting knowledge management by fostering communication, supporting innovation, and creating an environment conducive to knowledge sharing within organizations (Mittal & Dhar, 2015). In addition, strong leadership commitment is essential for sustaining knowledge management initiatives, as it influences organizational culture, resource allocation, and the long-term integration of knowledge practices into routine operations (Wang & Noe, 2010).

Organizational culture received the highest mean score among the domains assessed, indicating that participants perceived their workplace as supportive of knowledge exchange and professional learning. Organizational culture plays a fundamental role in shaping employees' attitudes toward collaboration, innovation, and knowledge sharing. Studies have shown that healthcare organizations with strong learning cultures encourage staff to share experiences, participate in research activities, and engage in continuous professional development (Kothari et al., 2011). A supportive culture therefore serves as a foundation for effective knowledge management implementation.

Finally, barriers to knowledge management were associated with years of experience and educational level, suggesting that professionals with higher academic qualifications perceive fewer obstacles to accessing or sharing knowledge. Barriers commonly reported in healthcare organizations include time constraints, limited technological infrastructure, and insufficient institutional support for knowledge exchange. Addressing barriers to knowledge management in healthcare requires strengthening organizational infrastructure, improving information systems, and enhancing leadership engagement to support effective knowledge transfer and utilization (Nicolini et al., 2008). Reducing these barriers is essential for strengthening knowledge management systems and enhancing organizational learning within healthcare settings.

These findings contribute to the growing body of evidence highlighting the importance of knowledge management in healthcare organizations. The results emphasize the roles of organizational culture, motivation, leadership, and professional collaboration in supporting knowledge exchange and learning among healthcare professionals. These insights provide a foundation for understanding how knowledge management practices operate in healthcare settings and offer direction for further consideration of the study's limitations and implications for practice, education, and future research.

Strengths and Limitations

This study provides context-specific evidence on knowledge management among healthcare professionals in a tertiary hospital in Qatar, addressing an important gap in the regional literature. The use of a structured instrument assessing multiple KM domains and the inclusion of professionals from diverse clinical roles strengthen the relevance of the findings. In addition, good reliability and construct validity support the methodological rigor of the survey. However, the cross-sectional design limits causal interpretation, and the single-center setting may restrict generalizability to other healthcare institutions. The reliance on self-reported responses may also introduce response bias.

Implications for Practice, Education, and Research

The findings suggest that healthcare organizations should strengthen leadership engagement and institutional support to enhance knowledge management practices. Structured education programs, interdisciplinary learning activities, and accessible knowledge platforms may promote knowledge sharing and collaboration. Future research should explore KM practices across multiple hospitals and employ longitudinal or mixed method designs to better understand factors influencing knowledge use in healthcare.

V. Conclusion

This study demonstrated that healthcare professionals in a tertiary hospital in Qatar reported generally positive knowledge management practices across multiple domains. Organizational culture, knowledge sharing, and perceptions emerged as relative strengths, suggesting that participants recognized the value of knowledge creation, exchange, and collaborative learning in clinical practice. At the same time, lower scores in leadership and barriers indicate that institutional support structures still need strengthening to fully optimize knowledge management in the hospital environment. Significant associations observed for extrinsic motivation, knowledge sharing, and barriers across selected demographic variables further suggest that professional experience and educational level may influence some aspects of knowledge management engagement. Overall, the findings highlight that knowledge management is both an organizational and behavioral process that depends on supportive culture, effective leadership, motivation, and accessible systems. In a high-acuity and multidisciplinary healthcare setting,

strengthening these components may improve organizational learning, evidence use, and quality of care. This study contributes context-specific evidence from Qatar and provides a practical basis for future strategies aimed at strengthening knowledge management in healthcare organizations.

Availability of data and materials

The availability of data and materials may be subject to certain access restrictions, such as ethical, legal, or commercial sensitivities.

Ethics approval

This study received ethical approval from the Institutional Review Board (IRB) of Hamad Medical Corporation (HMC) under protocol number MRC-01–21-114. The study was conducted in accordance with the ethical principles outlined in the Declaration of Helsinki, Good Clinical Practice (GCP), and the research regulations of the Ministry of Public Health (MoPH), Qatar. Informed consent was implied through voluntary participation in the online survey. At the beginning of the survey, participants were provided with detailed information regarding the study's purpose, procedures, confidentiality, and their right to withdraw at any time without consequence. Proceeding to complete the survey was considered as giving informed consent. This was approved by the IRB of Hamad Medical Corporation.

Consent for publication

Not applicable

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Conflict of Interest Statement

The authors have no conflicts of interest to declare.

Authors Contributions

MV contributed to the study design, protocol implementation, data collection, and provided important input for the data analysis. BV conducted the data analysis and supervised the overall study process. BV and MV wrote the manuscript. BV made all critical revisions for intellectual content. All authors read and approved of the final manuscript.

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