Orthopedic-physiotherapy communication gaps in post-rotator cuff repair: a multi-center study in Iraq

Las brechas de comunicación entre ortopedia y fisioterapia tras la reparación del manguito rotador: un estudio multicéntrico en Irak

Authors

Ahmed Sarhan Mazyon [1]
Harith Haitham Abbas [2]
Monaf Faik Al-Samarraee [3]

[1, 2, 3] Ibn Sina University of Medical and Pharmaceutical Sciences, Baghdad, Iraq

Corresponding Author:
Monaf Faik Al-Samarraee
Email:
dr.monaf.faik@ibnsina.edu.iq

How to cite in APA

Mazyon, A. S., Abbas, H. H., & Al-Samarraee, M. F. (2025). Orthopedic-physiotherapy communication gaps in post-rotator cuff repair: a multi-center study in Iraq. *Retos, 71*, 874-883. https://doi.org/10.47197/retos.v71.117411

Abstract

Introduction. Communication between orthopedic surgeons and physiotherapists is essential for successful rehabilitation after rotator cuff repair. This study examines communication patterns, timing, methods, and frequency in Iraq, highlighting factors that improve information transfer. Methods: A multi-center cross-sectional survey (June 2023–June 2024) included 45 orthopedic surgeons and 89 physiotherapists across public, private, and academic healthcare settings. Two validated online questionnaires assessed referral patterns, communication frequency, information completeness, patient education strategies, and perceived causes of RCR failure. Data were analyzed using descriptive statistics, chi-square and McNemar's tests, correlation analyses, and multivariate logistic regression. Results: Thirty-one percent of surgeons and 47% of physiotherapists reported infrequent communication ($p = 0.040$). Only 16% of surgeons referred patients within the optimal ≤2-week post-operative window; 49% delayed referrals beyond 4 weeks. Despite 84% of surgeons claiming to provide surgical notes, only 35% of physiotherapists received comprehensive post-operative information ($p < 0.001$). Multivariate analysis showed previous interprofessional training (OR = 3.22, 95% CI: 1.64–6.31) and private sector work setting (OR = 2.14, 95% CI: 1.08–4.23) were significant predictors of effective communication. Both groups identified poor rehabilitation and patient non-compliance as major contributors to RCR failure. Conclusions: Significant interprofessional communication deficits exist in post-RCR care in Iraq, marked by delayed referrals, incomplete information transfer, and reliance on verbal patient education. Standardized referral protocols, structured communication tools, and secure digital platforms are needed to enhance collaborative care and improve patient outcomes.

Keywords

Communication; orthopedic surgery; physiotherapy; rehabilitation; rotator cuff repair.

Resumen

Introducción. La comunicación entre cirujanos ortopédicos y fisioterapeutas es esencial para una rehabilitación exitosa después de la reparación del manguito rotador. Este estudio examina los patrones de comunicación, el momento, los métodos y la frecuencia en Irak, destacando los factores que mejoran la transferencia de información. Métodos: Se realizó una encuesta multicéntrica de tipo transversal (junio 2023–junio 2024) que incluyó a 45 cirujanos ortopédicos y 89 fisioterapeutas en entornos de atención sanitaria públicos, privados y académicos. Dos cuestionarios en línea validados evaluaron los patrones de derivación, la frecuencia de comunicación, la integridad de la información, las estrategias de educación al paciente y las causas percibidas del fracaso de la reparación del manguito rotador (RCR). Los datos se analizaron mediante estadística descriptiva, pruebas de chi-cuadrado y de McNemar, análisis de correlación y regresión logística multivariada. Resultados: El 31% de los cirujanos y el 47% de los fisioterapeutas informaron de una comunicación infrecuente (p = 0,040). Solo el 16% de los cirujanos derivó a los pacientes dentro del período postoperatorio óptimo de ≤2 semanas; el 49% retrasó las derivaciones más allá de las 4 semanas. A pesar de que el 84% de los cirujanos afirmó proporcionar notas quirúrgicas, solo el 35% de los fisioterapeutas recibió información postoperatoria completa (p < 0,001). El análisis multivariado mostró que la formación interprofesional previa (OR = 3,22; IC 95%: 1,64–6,31) y el trabajo en el sector privado (OR = 2,14; IC 95%: 1,08–4,23) fueron predictores significativos de una comunicación eficaz. Ambos grupos identificaron la rehabilitación deficiente y el incumplimiento del paciente como los principales factores que contribuyen al fracaso de la RCR. Conclusiones: Existen déficits significativos de comunicación interprofesional en la atención posterior a la RCR en Irak, caracterizados por derivaciones tardías, transferencia incompleta de información y dependencia de la educación verbal al paciente. Se necesitan protocolos de derivación estandarizados, herramientas de comunicación estructuradas y plataformas digitales seguras para mejorar la atención colaborativa y optimizar los resultados de los pacientes.

Palabras clave

Comunicación; cirugía ortopédica; fisioterapia; rehabilitación; reparación del manguito rotador.

Introduction

About 9.7% of individuals under the age of 20 and 30 to 50% of those over the age of 50 suffer from rotator cuff tears, making it one of the most frequent musculoskeletal disorders (Thangarajah et al., 2021). The glenohumeral joint and functional shoulder movement are supported by the biomechanical coordination of the rotator cuff complex, which consists of the supraspinatus, infraspinatus, teres minor, and subscapularis muscles (Akhtar et al., 2021). After conservative treatment fails, arthroscopic procedures are considered the gold standard for surgical repair due to their superior clinical results and reduced morbidity compared to open operations (Sakha et al., 2021).

Despite improvements in surgical techniques, the rate of postoperative re-tears remains high, varying between 4% and 94% in various studies (Iannotti et al., 2013; Rossi et al., 2019). It is evident that factors other than surgical skill contribute to the variation in outcomes, with post-operative rehabilitation being an essential component, in light of these findings (Karasuyama et al., 2023). When it comes to tendon healing and post-operative stiffness, supervised physiotherapy programs are much more effective than unprotected early range of motion operations, and timing is everything when it comes to treatment success (Karppi et al., 2020; Chen et al., 2024).

The need for phase-specific, patient-specific strategies that take into consideration surgical aspects including tear kind, tissue quality, and repair strain is emphasized by modern rehabilitation approaches (Nikolaidou et al., 2017). Experts in rehabilitation and the surgical team must remain in close communication to ensure optimal rehabilitation delivery. Recent comprehensive investigations have shown that the absence of established standards for communication between orthopedic surgeons and physiotherapists is a significant barrier to achieving the best possible patient results. Particularly in healthcare systems with limited resources, this is the case (Schultzel et al., 2021).

The implementation of successful instructional strategies to guarantee that patients follow their treatment regimens is an essential part of the healthcare interprofessional collaboration model. Additionally, this model aims to maximise patient outcomes through shared decision-making, coordinated care delivery, and continuous communication (González-Santamaría et al., 2024). The success of post-RCR care depends on effective communication. The physiotherapist's knowledge of the surgery's details is essential, as is their familiarity with the patient's condition, the nature of the tear, the surgical approach, the tissue quality, and any safety measures prescribed by the surgeon. That is the only way for them to come up with effective rehabilitation programs. To ensure the best potential patient results in complex rehabilitation scenarios requiring interdisciplinary collaboration, contemporary healthcare delivery is increasingly reliant on systematic communication protocols and organized instructional methodologies (Brodersen et al., 2023; Campos et al., 2024).

Little is known about the interprofessional communication methods in the Middle East, despite the fact that there may be disparities between Western and Middle Eastern healthcare delivery systems. Developing individualized therapies to improve post-RCR outcomes in diverse healthcare settings necessitates a comprehension of these communication patterns. Looking at patterns of interprofessional communication in care following RCR, this study addresses a major information gap in Iraqi healthcare. Our primary objective was to evaluate the present state of communication between orthopedic surgeons and physiotherapists with regard to the frequency, nature, and timing of their exchanges. Other objectives included studying referral patterns, data transmission efficiency, patient education strategies, and factors hypothesized to contribute to RCR failure.

Method

Study Design and Setting

Iraqi public and commercial hospitals, as well as academic institutions, took part in a multi-centric cross-sectional study from June 2023 to June 2024. Following the standards outlined in the Declaration of Helsinki, this study was authorized by the Institutional Review Board of Baghdad Medical College, University of Baghdad (Protocol code: BMC-2023-067; Approval date: May 15, 2023).

Ethical Considerations

By including a standardized online permission process, all participants supplied informed consent, and the survey platform ensured thorough documentation while accommodating the geographic distribution of participants (Baitha et al., 2019). This digital approach accommodated geographic distribution of participants while maintaining proper documentation of consent. Participants were informed about study objectives, voluntary participation, anonymity, and their right to withdraw at any time.

Participants and Sample Size

Inclusion Criteria

- Orthopedic surgeons: Board-certified specialists with minimum 2 years of experience performing RCR procedures
- Physiotherapists: Licensed practitioners with minimum 2 years of experience treating post-operative orthopedic patients
- Active clinical practice in Iraq during the study period
- Informed consent to participate

Exclusion Criteria

- Practitioners not currently involved in RCR patient care
- Less than 2 years of relevant clinical experience
- Incomplete survey responses (<80% completion)

Sample size calculation was performed using G*Power 3.1.9.7 software, assuming a medium effect size ($w = 0.3$), $\alpha = 0.05$, and power = 0.80, yielding a minimum required sample of 44 participants per group. To account for potential non-response and incomplete surveys, target recruitment was set at 60 orthopedic surgeons and 120 physiotherapists.

Recruitment Process

Participants were recruited through multiple channels:

- Professional medical associations (Iraqi Orthopedic Association, Iraqi Physiotherapy Association)
- Healthcare institution networks
- Professional conferences and continuing education events
- Peer referrals from initial participants

Initial contact was made with 68 orthopedic surgeons and 142 physiotherapists. After excluding incomplete responses and practitioners not meeting inclusion criteria, the final sample comprised 45 orthopedic surgeons (response rate: 66.2%) and 89 physiotherapists (response rate: 62.7%).

Study Tool Development

Two profession-specific survey instruments were developed based on existing literature and expert consensus, incorporating validated assessment tools for healthcare communication quality (Aridi et al., 2023). The surveys underwent face validity assessment by a panel of 5 experts (2 orthopedic surgeons, 2 physiotherapists, 1 healthcare communication specialist) and pilot testing with 12 practitioners not included in the main study.

Study Tool Domains:

1. Demographic and professional characteristics
2. Referral timing and patterns
3. Communication frequency and methods
4. Information transfer quality

5. Patient education approaches
6. Perceived factors contributing to RCR failure
7. Barriers to effective communication

Data Collection

Surveys were administered electronically using REDCap (Research Electronic Data Capture) platform, ensuring secure data collection and storage. Three reminder emails were sent at bi-weekly intervals to maximize response rates. Data collection occurred over a 6-month period to accommodate participants' schedules.

Statistical Analysis

Data analysis was performed using SPSS version 28.0. Descriptive statistics included frequencies, percentages, means, and standard deviations as appropriate. McNemar's test was used for paired categorical comparisons between surgeon and physiotherapist responses. Chi-square tests examined associations between independent categorical variables, with $p < 0.05$ considered statistically significant. Missing data were handled using listwise deletion for analyses involving affected variables. Correlation analyses included 95% confidence intervals, and multivariate logistic regression was performed to identify predictors of effective communication.

Results

Participant Characteristics

The final sample comprised 45 orthopedic surgeons and 89 physiotherapists. Demographic characteristics are presented in Table 1. Surgeon participants had significantly more clinical experience (mean = 13.1 ± 7.2 years) compared to physiotherapists (mean = 9.2 ± 5.8 years, $p < 0.01$). The majority of surgeons (64%, n=29) worked in public hospitals, while physiotherapists were more evenly distributed across healthcare settings.

Table 1. Demographic and Professional Characteristics of Study Participants

Characteristic	Orthopedic Surgeons (n=45)	Physiotherapists (n=89)	p-value
Age (years), mean ± SD	43.2 ± 8.7	36.1 ± 7.4	<0.001*
Clinical experience (years), mean ± SD	13.1 ± 7.2	9.2 ± 5.8	0.002*
Gender, n (%)			0.038*
Male	37 (82.2)	59 (66.3)	
Female	8 (17.8)	30 (33.7)	
Work setting, n (%)			<0.001*
Public hospital	29 (64.4)	38 (42.7)	
Private hospital	9 (20.0)	28 (31.5)	
Private clinic	7 (15.6)	23 (25.8)	
Education level, n (%)			-
Bachelor's degree	-	66 (74.2)	
Master's degree	-	19 (21.3)	
PhD	-	4 (4.5)	
Board certification	45 (100.0)	-	
Monthly RCR volume, mean ± SD	7.8 ± 4.1†	8.2 ± 5.6‡	0.672

*Statistically significant at $p < 0.05$; †RCR surgeries performed; ‡Post-RCR patients treated from all sources;
SD = Standard Deviation; RCR = Rotator Cuff Repair

Referral Timing and Patterns

Significant discrepancies existed between evidence-based recommendations and actual referral practices (Table 2). The optimal physiotherapy initiation window (≤2 weeks post-operatively) was achieved by only 16% (n=7) of surgeons, while the majority (49%, n=22) delayed referrals beyond 4 weeks. This pattern was corroborated by physiotherapist reports, with only 20% (n=18) receiving patients within the optimal timeframe.

Table 2. Referral Timing Patterns and Information Transfer Quality

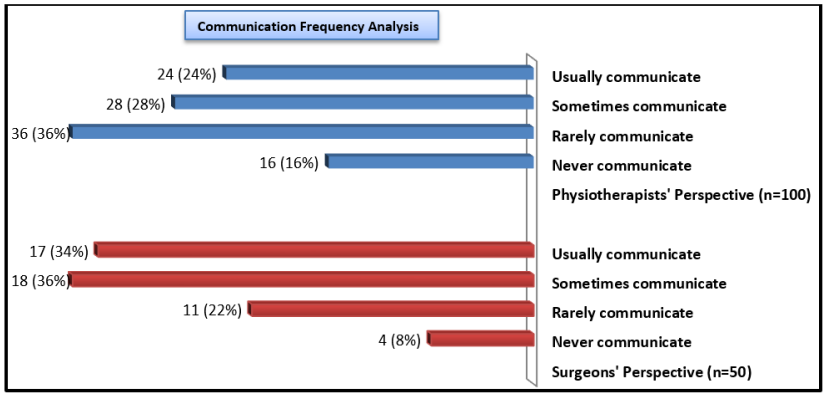
Variable	Surgeons n (%)	Physiotherapists n (%)	p-value
Optimal referral timing (≤2 weeks)			
Surgeons claiming to refer	7 (15.6)	-	-
Physiotherapists reporting receipt	-	18 (20.2)	0.612*
Delayed referral (>4 weeks)			
Surgeons claiming to refer	22 (48.9)	-	-
Physiotherapists reporting receipt	-	41 (46.1)	0.789*
Referral to known physiotherapist			
Yes	24 (53.3)	-	-
No	9 (20.0)	-	-
Sometimes	12 (26.7)	-	-
Information transfer			
Surgeons claiming to send notes	38 (84.4)	-	-
Physiotherapists receiving comprehensive notes	-	31 (34.8)	<0.001*
Complete surgical information received	-	16 (18.0)	-

McNemar's test for paired comparisons; *Statistically significant at $p < 0.05$

Communication Frequency and Patterns

Critical communication gaps were identified between professional groups. Notably, 31% (n=14) of surgeons and 47% (n=42) of physiotherapists reported infrequent communication (never/rarely), representing a statistically significant difference ($\chi^2 = 4.22$, $p = 0.040$). The most striking finding was the substantial discrepancy between surgeon claims of providing information (84%, n=38) and physiotherapist reports of receiving comprehensive information (35%, n=31), representing a significant communication failure ($\chi^2 = 22.18$, $p < 0.001$). (Figure 1)

Figure 1. Communication Frequency between Orthopedic Surgeons and Physiotherapists



Communication Methods and Technology Preferences

Table 3 presents the preferred communication methods between professional groups. Telephone communication remained the most preferred method among surgeons (58%, n=26), while physiotherapists showed more balanced preferences between phone calls (40%, n=36) and modern messaging platforms (43%, n=38).

Table 3. Communication Methods and Patient Education Approaches

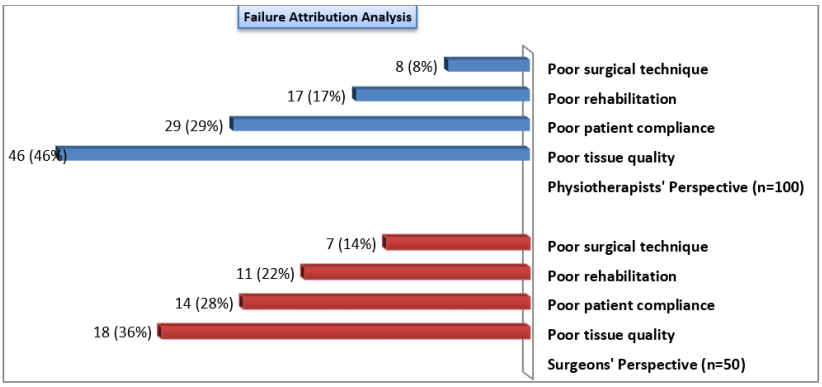
Variable	Surgeons n (%)	Physiotherapists n (%)	p-value
Preferred communication method			0.021*
Phone call	26 (57.8)	36 (40.4)	
Email	1 (2.2)	3 (3.4)	
WhatsApp/Messaging	12 (26.7)	38 (42.7)	
Paper form	6 (13.3)	12 (13.5)	
Patient education method			0.018*
Verbal instruction only	30 (66.7)	44 (49.4)	
Multimedia (videos/pictures)	8 (17.8)	27 (30.3)	
Personalized materials	7 (15.6)	18 (20.2)	
Communication accessibility			0.523
Always accessible	11 (24.4)	28 (31.5)	
Usually accessible	21 (46.7)	35 (39.3)	
Sometimes accessible	11 (24.4)	22 (24.7)	
Rarely accessible	2 (4.4)	4 (4.5)	

*Statistically significant at $p < 0.05$

Perceived Factors Contributing to RCR Failure

Professional groups demonstrated significantly different perspectives on primary failure mechanisms. Physiotherapists attributed failures more frequently to poor rehabilitation (44%, n=39) compared to surgeons (24%, n=11), while surgeons more commonly cited tissue quality factors (38%, n=17) compared to physiotherapists (22%, n=20). Both groups identified patient non-compliance as a significant factor (surgeons: 29%, n=13; physiotherapists: 31%, n=28). (Figure 2)

Figure 2. Perceived Factors Contributing to Rotator Cuff Repair Failure by Professional Group



Information Transfer Importance and Implementation Gap

Despite overwhelming recognition of information importance by both groups (Table 4), there was a significant implementation deficit. This paradox highlights systemic rather than awareness-based barriers to effective communication.

Table 4. Information Transfer Importance vs. Current Practice

Information Category	Surgeons Consider Important n (%)	Physiotherapists Consider Important n (%)	Currently Received by Physiotherapists n (%)	Implementation Gap (%)
Tissue quality assessment	42 (93.3)	79 (88.8)	25 (28.1)	60.7
Tear size and location	43 (95.6)	85 (95.5)	28 (31.5)	64.0
Surgical technique used	40 (88.9)	77 (86.5)	22 (24.7)	61.8
Post-operative precautions	44 (97.8)	87 (97.8)	32 (36.0)	61.8
Expected healing timeline	39 (86.7)	82 (92.1)	19 (21.3)	70.8
Patient-specific factors	37 (82.2)	78 (87.6)	17 (19.1)	68.5

Correlation Analysis of Communication Quality Factors

Pearson correlation analysis revealed significant relationships between communication variables (Table 5). These correlations suggest that improving one aspect of communication may have positive cascading effects on overall interprofessional collaboration.

Table 5. Correlation Matrix of Communication Quality Indicators (n=134)

Variable	1	2	3	4	5
1. Communication frequency	-				
2. Information completeness	0.58** (0.44-0.69)	-			
3. Referral timing appropriateness	0.43** (0.27-0.56)	0.39** (0.22-0.53)	-		
4. Patient education quality	0.34** (0.17-0.49)	0.41** (0.25-0.55)	0.26* (0.09-0.42)	-	
5. Professional satisfaction	0.62** (0.49-0.73)	0.51** (0.36-0.64)	0.38** (0.21-0.52)	0.29* (0.12-0.45)	-

*p < 0.05; **p < 0.01; Values in parentheses represent 95% confidence intervals

Multivariate Analysis of Communication Predictors

Logistic regression analysis identified significant predictors of effective communication (Table 6). Clinical experience, work setting, and previous interprofessional training emerged as key factors influencing communication quality.

Table 6. Multivariate Predictors of Effective Interprofessional Communication

Predictor Variable	Odds Ratio	95% CI	p-value
Previous interprofessional training	3.22	1.64-6.31	0.001*
Work setting (private vs public)	2.14	1.08-4.23	0.029*
Professional role (surgeon vs physiotherapist)	1.67	0.89-3.12	0.108
Gender (male vs female)	1.18	0.61-2.28	0.624
Clinical experience (per year)	1.09	1.02-1.17	0.012*
Monthly case volume (per case)	1.06	1.00-1.12	0.048*
Age (per year)	0.97	0.93-1.02	0.341

*Statistically significant at p < 0.05; CI = Confidence Interval

Discussion

This study reveals substantial interprofessional communication deficits in post-RCR care within Iraqi healthcare settings, characterized by delayed referrals, inconsistent information transfer, and suboptimal patient education approaches. These findings align with international research demonstrating similar communication challenges in post-surgical orthopedic care, though our study reveals more pronounced deficits than typically reported in Western healthcare systems.

The identified communication gaps have significant clinical implications for patient outcomes, with delayed physiotherapy initiation beyond the optimal 2-week window potentially compromising tissue healing, increasing stiffness risk, and ultimately contributing to suboptimal functional recovery (Thigpen et al., 2016). The substantial discrepancy between surgeon claims of information provision (84%) and physiotherapist receipt of comprehensive information (35%) suggests systematic failures in information transfer mechanisms rather than individual practitioner deficiencies.

The Iraqi healthcare context presents unique challenges that may exacerbate communication difficulties, including resource constraints, fragmented healthcare delivery systems, and limited integration between public and private sectors, which collectively contribute to observed communication deficits (Kattan et al., 2023). The preference for telephone communication over digital platforms may reflect infrastructure limitations and generational differences in technology adoption. Additionally, the reliance on personal relationships for referrals (53% of surgeons) suggests informal rather than systematic care coordination mechanisms, which may create disparities in access to specialized rehabilitation services.

Our findings parallel international studies reporting communication deficiencies in post-surgical care, though with greater severity, highlighting the need for systematic interventions tailored to resource-constrained healthcare environments (Schultzel et al., 2021). Similar patterns have been identified in North American healthcare settings, with 47% of physiotherapists reporting inadequate surgeon communication. However, our study reveals more severe communication deficits, with 47% of physiotherapists reporting infrequent surgeon contact compared to international benchmarks of 30–35%.

The preference distribution between traditional (telephone: surgeons 58%, physiotherapists 40%) and modern communication methods (messaging platforms: physiotherapists 43%) indicates potential for technology-mediated improvements. Electronic health record integration, secure messaging platforms, and standardized communication protocols could address current deficiencies while accommodating practitioner preferences and improving patient care continuity (Campos et al., 2024). The predominant reliance on verbal patient education (surgeons: 67%, physiotherapists: 49%) raises significant patient safety and compliance concerns, as evidence demonstrates that multimodal educational approaches incorporating written materials, visual aids, and digital resources improve patient comprehension, compliance, and outcomes (Brodersen et al., 2023; González-Santamaría et al., 2024). This finding aligns with research in health promotion programs, where structured educational interventions have shown superior outcomes compared to traditional verbal-only approaches.

The divergent attributions of RCR failure between professional groups highlight different clinical focuses and suggest opportunities for improved mutual understanding. Physiotherapists' emphasis on rehabilitation quality (44%) versus surgeons' focus on tissue factors (38%) reflects their respective expertise domains but may indicate insufficient communication about case-specific factors that influence both surgical and rehabilitative success.

Based on our findings, we recommend five evidence-based interventions to enhance post-rotator cuff repair (RCR) management, incorporating principles from successful health promotion and educational programs (González-Santamaría et al., 2024). First, standardized referral protocols should be institutionalized, requiring physiotherapy referrals within two weeks post-RCR, supported by automated reminders and quality metrics tracking. Second, structured communication systems should be implemented, using standardized post-operative forms with mandatory fields for tissue quality, tear characteristics, surgical technique, and specific precautions. Third, secure digital communication platforms should be adopted, integrating both traditional (phone) and modern messaging capabilities to ensure compliant information sharing. Fourth, interprofessional education programs should be developed to strengthen collaborative care competencies through case-based learning and improved mutual understanding of professional roles. Finally, quality monitoring systems should be established to track referral timeliness, completeness of information transfer, and patient-reported outcomes, enabling evaluation of intervention effectiveness and continuous improvement.

Several limitations should be acknowledged in interpreting the study's findings. The cross-sectional design limits the ability to draw causal inferences between communication patterns and patient outcomes. Reliance on self-reported data introduces potential response bias, particularly regarding professional practices and behaviors. The moderate response rates (surgeons: 66.2%, physiotherapists: 62.7%) may restrict the representativeness of the sample, although these rates are acceptable for healthcare survey research. Furthermore, the study's focus on Iraqi healthcare settings may limit generalizability to other contexts, though the findings are likely applicable to similar resource-constrained healthcare systems within the region. The absence of direct patient outcome measures also prevents a comprehensive assessment of how communication influences clinical results.

Future research should address these limitations by adopting prospective study designs that directly link communication quality to functional outcomes, patient satisfaction, and cost-effectiveness metrics. Priority areas include economic analyses to quantify the financial impact of communication deficits, as well as multinational studies to evaluate the applicability of findings across varied healthcare systems. Intervention-based research should test strategies aimed at enhancing interprofessional communication, while incorporating the patient's perspective to better understand how interactions between healthcare professionals shape patient experience and satisfaction. Such approaches will provide a stronger evidence base for policy and practice improvements in interprofessional collaboration.

Conclusions

This study reveals critical interprofessional communication deficits in post-RCR care within Iraqi healthcare settings, characterized by delayed referrals, inconsistent information transfer, and suboptimal patient education approaches. Immediate and systematic changes are vital to improve interprofessional collaboration and patient outcomes, as these results show. Rather than reflecting individual failures, the wide gaps in professional groups' contact frequency, information transmission, and care coordination point to systemic problems. Given the high recognition of information value and the poor implementation rates, it seems that the challenges are more structural and procedural in nature rather than awareness-based. To address these issues, we need to establish quality monitoring systems, educate professionals, integrate technology, and create policies. Past successful health promotion initiatives can be used as examples for how to put these measures into practice (González-Santamaría et al., 2024). It is plausible to anticipate that improving one component of care coordination may have a multiplicative impact on all other components due to the high degree of connectivity between different communication parameters. Important insights on interprofessional communication patterns in post-RCR care are offered by this study, which can help improve patient outcomes through increased collaborative care delivery. The development of targeted therapies will be impacted by these discoveries. A combination of evidence-based communication protocols, suitable technology, and professional development programs can improve post-operative care in Iraq and other comparable healthcare settings.

Acknowledgements

The writers would like to extend their deepest appreciation to every orthopedic surgeon and physiotherapist who took part in this research. The healthcare organizations that helped with data collecting and the expert panel that advised on survey design deserve our deepest gratitude.

Financing

This research received no external funding.

References

Akhtar, A., Richards, J., & Monga, P. (2021). The biomechanics of the rotator cuff in health and disease: A narrative review. *Journal of Clinical Orthopaedics and Trauma*, *18*, 150–156. https://doi.org/10.1016/j.jcot.2021.04.019

Aridi, M., Ahmad, M., Ghach, W., Charifeh, S., & Alwan, N. (2023). Development and validation of the Soft Skills Questionnaire for nurses. *SAGE Open Nursing*, *9*, 23779608231159620. https://doi.org/10.1177/23779608231159620

Baitha, U., Ranjan, P., Sarkar, S., Arora, C., Kumari, A., Dwivedi, S. N., Patil, A., & Jamshed, N. (2019). Development of a self-assessment tool for resident doctors' communication skills in India. *Journal of Educational Evaluation for Health Professions*, *16*, 17. https://doi.org/10.3352/jeehp.2019.16.17

Brodersen, F., Wagner, J., Uzunoglu, F. G., & Petersen-Ewert, C. (2023). Impact of preoperative patient education on postoperative recovery in abdominal surgery: A systematic review. *World Journal of Surgery*, *47*(4), 937–947. https://doi.org/10.1007/s00268-022-06884-4

Campos, B. A., Cummins, E., Sonnay, Y., Brindle, M. E., & Cauley, C. E. (2024). A digital communication intervention to support older adults and their care partners transitioning home after major surgery: Protocol for a qualitative research study. *JMIR Research Protocols*, *13*, e59067. https://doi.org/10.2196/59067

Chen, Y., Meng, H., Li, Y., Zong, H., Yu, H., Liu, H., Lv, S., & Huai, L. (2024). The effect of rehabilitation time on functional recovery after arthroscopic rotator cuff repair: A systematic review and meta-analysis. *PeerJ*, *12*, e17395. https://doi.org/10.7717/peerj.17395

González-Santamaría, X., Borrajo, E., Castellano, C., & Castellano, C. (2024). "KorriCan": An educational proposal for the promotion of health through canicross. *Retos*, *54*, 63–75. https://doi.org/10.47197/retos.v54.102646

Iannotti, J. P., Deutsch, A., Green, A., Rudicel, S., Christensen, J., Marraffino, S., & Ramsey, M. L. (2013). Time to failure after rotator cuff repair: A prospective imaging study. *The Journal of Bone and Joint Surgery*, *95*(11), 965–971. https://doi.org/10.2106/JBJS.L.00708

Karasuyama, M., Gotoh, M., Oike, T., Nishie, K., Shibuya, M., Nakamura, H., Ohzono, H., & Kawakami, J. (2023). Does physiotherapy after rotator cuff repair require supervision by a physical therapist? A meta-analysis. *Clinics in Shoulder and Elbow*, *26*(3), 296–301. https://doi.org/10.5397/cise.2022.01410

Karppi, P., Ryösä, A., Kukkonen, J., Kauko, T., & Äärimaa, V. (2020). Effectiveness of supervised physiotherapy after arthroscopic rotator cuff reconstruction: A randomized controlled trial. *Journal of Shoulder and Elbow Surgery*, *29*(9), 1765–1774. https://doi.org/10.1016/j.jse.2020.04.034

Kattan, A., Alhemsi, H., Alkhawashki, A., Alfadel, F., Almoosa, S., Mokhtar, A., & Alsalamah, M. (2023). Patient compliance with physical therapy following orthopedic surgery and its outcomes. *Cureus*, *15*(4), e37217. https://doi.org/10.7759/cureus.37217

Nikolaidou, O., Migkou, S., & Karambalis, C. (2017). Rehabilitation after rotator cuff repair. *The Open Orthopaedics Journal*, *11*, 154–162. https://doi.org/10.2174/1874325001711010154

Rossi, L. A., Rodeo, S. A., Chahla, J., & Ranalletta, M. (2019). Current concepts in rotator cuff repair techniques: Biomechanical, functional, and structural outcomes. *Orthopaedic Journal of Sports Medicine*, *7*(9), 2325967119868674. https://doi.org/10.1177/2325967119868674

Sakha, S., Erdogan, S., Shanmugaraj, A., Betsch, M., Leroux, T., & Khan, M. (2021). Update on all-arthroscopic vs. mini-open rotator cuff repair: A systematic review and meta-analysis. *Journal of Orthopaedics*, *24*, 254–263. https://doi.org/10.1016/j.jor.2021.03.009

Schultzel, M., Scheidt, K. B., McNeill, B., Klein, C. M., Blout, C., & Itamura, J. M. (2021). Surgeon-therapist communication must be improved in rotator cuff repair rehabilitation: An electronic survey of physical therapists on postoperative rehabilitation protocols and communication with treating surgeons. *The Permanente Journal*, *25*, 20–088. https://doi.org/10.7812/TPP/20.088

Thangarajah, T., Lo, I. K., & Sabo, M. T. (2021). Rotator cuff repair techniques: Current concepts. *Journal of Clinical Orthopaedics and Trauma*, *17*, 149–156. https://doi.org/10.1016/j.jcot.2021.03.006

Thigpen, C. A., Shaffer, M. A., Gaunt, B. W., Leggin, B. G., Williams, G. R., & Wilcox, R. B., III. (2016). The American Society of Shoulder and Elbow Therapists' consensus statement on rehabilitation following arthroscopic rotator cuff repair. *Journal of Shoulder and Elbow Surgery*, *25*(4), 521–535. https://doi.org/10.1016/j.jse.2015.12.018

Authors' and translators' details:

Ahmed Sarhan Mazyon	riyadhalrudaini88@gmail.com	Author
Harith Haitham Abbas	riyadhalredainy@yahoo.com	Author
Monaf Faik Al-Samarraee	dr.monaf.faik@ibnsina.edu.iq	Author/Translator