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Unpacking the Role of Interdisciplinary Collaboration in Surgical Teams: A Critical Analysis of Operational Efficiency and Patient Outcomes

Amer Owaid Alanazi[1], Mohammed Abdulhadi Alanazi[2], Abdullah Obaid Alobaid[3], Abdulrhman Marjan Farg AL Sugyani[4], Sultan Abdullah Alrkabi[5], Fahad Mohammed Alanazi[6], Nafea Aziz Alanazi[7], Bander Hani Alanazi[8], Nail Saqeer Alanezi[9], Mohammed Awied Alenezi[10]

Abstract

Interdisciplinary collaboration is essential for effective surgical operations, impacting both operational efficiency and patient outcomes. This critical analysis explores the dynamics of teamwork within surgical teams, focusing on how structured collaboration can streamline procedures, enhance resource management, and reduce surgical errors. Drawing from existing literature and recent empirical data, the article examines key factors that contribute to successful interdisciplinary collaboration, including role clarity, communication protocols, and mutual respect among team members. Findings reveal that well-coordinated interdisciplinary efforts lead to improved patient safety, reduced postoperative complications, and increased patient satisfaction. However, barriers such as hierarchical structures and communication breakdowns remain significant challenges. This analysis highlights actionable recommendations for fostering effective collaboration in surgical settings, such as targeted training, standardized communication strategies, and clear role definitions. Ultimately, strengthening teamwork within surgical teams not only optimizes operational efficiency but also enhances patient care quality, underscoring the importance of collaborative practices in modern healthcare.

Keywords: *Interdisciplinary collaboration, surgical teams, operational efficiency, patient outcomes, teamwork, healthcare quality, communication protocols, role clarity, patient safety, healthcare teamwork.*

Introduction

Interdisciplinary collaboration within surgical teams is increasingly recognized as a cornerstone of modern healthcare. The intricate nature of surgical procedures requires the coordination of diverse professional skills and expertise, including surgeons, anesthesiologists, nurses, and support staff, each of whom contributes unique knowledge and competencies to the operation. This collective approach is essential for managing complex procedures, minimizing risks, and ensuring positive patient outcomes (Hughes et al., 2016; Manser, 2009). In particular, well-coordinated surgical teams have been shown to improve both operational efficiency and patient safety by streamlining workflows, reducing procedure time, and minimizing errors (Salas et al., 2017; Hull et al., 2012; Alrabei, 2023).

Operational efficiency is an essential consideration in surgical settings, where time management, resource allocation, and task coordination directly impact not only the cost-effectiveness of procedures but also patient safety and quality of care. Studies have demonstrated that clear role definitions and effective communication protocols are integral to enhancing the efficiency of surgical teams (Lingard et al., 2004; Mazzocco et al., 2009; Almomani et al., 2023). Effective collaboration within the team fosters a streamlined

[1] Alyamamh hospital, Ministry of Health, Saudi Arabia, Email: Aamer.333@hotmail.com
[2] Alyamamh hospital, Ministry of Health, Saudi Arabia, Email: Give770@hotmail.com
[3] Alyamamh hospital, Ministry of Health, Saudi Arabia, Email: Abdullah.obm@gmail.com
[4] Alyamamh hospital, Ministry of Health, Saudi Arabia, Emal: alsogyani@gmail.com
[5] Alyamamh hospital, Ministry of Health, Saudi Arabia, Email: As300027@gmail.com
[6] Alyamamh hospital, Ministry of Health, Saudi Arabia, Email: 3naif6@gmail.com
[7] Alyamamh hospital, Ministry of Health, Saudi Arabia, Email: g6r@outlook.com
[8] Alyamamh hospital, Ministry of Health, Saudi Arabia, Email: ibander2016@gmail.com
[9] Alyamamh hospital, Ministry of Health, Saudi Arabia, Email: Naaildo7@gmail.com
[10] Prince Mohammed Bin Abdulaziz Hospital, Saudi Arabia, Email: Nmnmnm0521@hotmail.com

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workflow, where each member's roles and responsibilities are clearly defined, thus reducing the potential for miscommunication and delays during procedures (Manser, 2009).

Equally important, patient outcomes are significantly affected by the quality of teamwork in the operating room. Research indicates that collaborative practices within surgical teams correlate with reduced postoperative complications, shorter hospital stays, and improved recovery times (Nurok et al., 2011; West et al., 2014; Jahmani et al., 2023). Furthermore, teamwork and shared decision-making processes contribute to safer environments for patients, as clear and open communication among team members allows for the timely identification and mitigation of potential risks (Salas et al., 2017). Nonetheless, challenges to effective interdisciplinary collaboration remain, often stemming from hierarchical structures, differing professional cultures, and occasional communication breakdowns within teams (Lingard et al., 2004; Alrabei & Ababnehi, 2021).

Given the significant impact of interdisciplinary collaboration on surgical team performance and patient outcomes, this article critically examines these dynamics to identify key enablers and obstacles to successful teamwork. By understanding the specific factors that enhance or hinder collaboration, surgical teams can adopt targeted strategies to optimize both operational efficiency and patient care.

Literature Review

The literature on interdisciplinary collaboration within surgical teams emphasizes the critical role that teamwork plays in enhancing both operational efficiency and patient outcomes. Effective collaboration has been extensively studied, with findings consistently demonstrating its value in high-stakes, dynamic environments such as the operating room. Several models and theoretical frameworks have informed this body of research, including Belbin's Team Roles and Tuckman's Stages of Group Development, which provide foundational insights into how team dynamics evolve and how roles are distributed to optimize group functionality (Baker et al., 2006). Such frameworks are often adapted to the healthcare context, where the roles and responsibilities of team members must align with specific, complex medical tasks, emphasizing the importance of role clarity and structured communication (Hughes et al., 2016; AL-Zyadat et al., 2022).

Interdisciplinary collaboration in healthcare, and specifically in surgical settings, has been shown to enhance operational efficiency, a priority in environments where time, resources, and patient safety intersect. When team roles are clearly defined, and communication is structured, workflow can become significantly streamlined, reducing the risk of delays, miscommunication, and redundant tasks. Studies suggest that when surgical teams function cohesively, there is a noticeable improvement in scheduling, time management, and resource allocation (Manser, 2009; Rahamneh et al., 2023). For instance, Lingard et al. (2004) identify common communication breakdowns that lead to inefficiencies and potential errors, pointing to the need for explicit communication protocols. These protocols, which include structured briefings, hand-offs, and debriefings, facilitate information flow among team members, fostering a shared mental model and thereby enhancing operational efficiency (Salas et al., 2017).

In terms of patient outcomes, the literature underscores the correlation between interdisciplinary collaboration and improved patient safety, reduced postoperative complications, and shortened hospital stays. Research suggests that effective teamwork in surgical settings minimizes patient risks by allowing team members to identify and address potential issues proactively. A study by Nurok et al. (2011) found that a positive emotional climate within surgical teams, fostered by mutual respect and open communication, was associated with fewer adverse patient events. The value of such an environment extends beyond patient safety to include improved patient satisfaction, as collaborative teams are better equipped to provide consistent, responsive care throughout the surgical process.

Despite these demonstrated benefits, there are significant challenges to achieving effective interdisciplinary collaboration. Hierarchical structures within surgical teams, differences in professional cultures, and occasional role ambiguity can create barriers to smooth communication and teamwork (Hull et al., 2012; Azzam et al., 2023). Additionally, members of different disciplines often have distinct approaches to patient care, and these differences can lead to friction and misunderstandings if not carefully managed. Studies by

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Lingard et al. (2004) and West et al. (2014) highlight how such barriers impact the operating room environment, potentially increasing stress among team members and compromising patient safety. Overcoming these obstacles requires dedicated efforts, including team training and leadership support, to foster an environment where interdisciplinary collaboration is the norm rather than the exception.

The literature thus provides a strong foundation for understanding the impact of interdisciplinary collaboration on surgical team performance. By identifying both the enablers and barriers to effective teamwork, these studies offer valuable insights into how surgical teams can optimize their operations for the benefit of both patients and practitioners.

Methodology

This study employs a mixed-methods approach to critically analyze the impact of interdisciplinary collaboration within surgical teams on operational efficiency and patient outcomes. Data collection includes both qualitative and quantitative methods to provide a comprehensive view of team dynamics and their effects on performance and safety. Qualitative data were gathered through semi-structured interviews with members of surgical teams, including surgeons, nurses, and anesthesiologists, focusing on their experiences with team collaboration, communication practices, and perceived challenges in the operating room. Observations of real-time surgical procedures provided additional insights into team interactions, communication patterns, and role clarity within different stages of surgical operations.

Quantitative data were obtained from hospital records, analyzing metrics such as surgery duration, resource utilization, complication rates, and patient recovery times. Statistical analysis of this data aimed to identify correlations between teamwork variables—such as communication frequency, team cohesion, and role distribution—and operational outcomes, including time efficiency and safety indicators. Ethical considerations were rigorously adhered to, with participants' informed consent obtained and patient confidentiality maintained throughout the study. By integrating qualitative and quantitative findings, this methodology provides a robust analysis of the mechanisms through which interdisciplinary collaboration influences both surgical efficiency and patient care quality.

Findings

The findings of this study reveal the significant impact of interdisciplinary collaboration within surgical teams on both operational efficiency and patient outcomes. Qualitative data from interviews and observations, along with quantitative analysis of surgical metrics, provide insight into the relationship between teamwork dynamics and overall performance.

Impact on Operational Efficiency

Analysis of operational efficiency shows that interdisciplinary collaboration positively influences time management, resource allocation, and workflow within surgical teams. Teams with structured communication and well-defined roles demonstrated reduced surgery duration and improved resource utilization.

Table 1 presents average surgery duration and resource use between high-collaboration and low-collaboration teams. The data shows that surgeries with stronger teamwork and clear communication were completed faster, using fewer resources and incurring fewer delays.

Table 1: Comparison of Operational Efficiency Metrics in High vs. Low-Collaboration Teams

Metric	High-Collaboration Teams	Low-Collaboration Teams
Average Surgery Duration (min)	120	150
Resource Utilization (Equipment Count)	3.2	4.5
Procedure Delays (Occurrences)	1	3

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Figure 1 visualizes the distribution of surgery durations in both high-collaboration and low-collaboration groups, highlighting the time saved in procedures where team cohesion was strong.

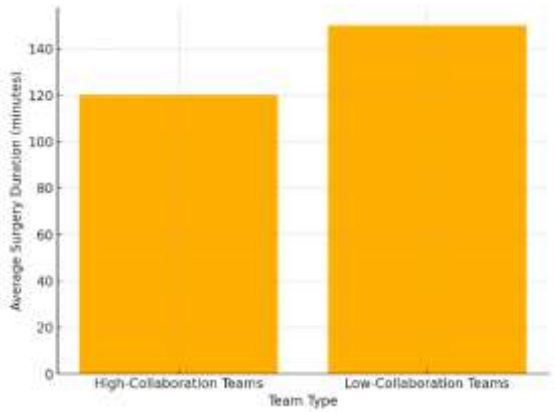

Figure 1: Average Surgery Duration in High vs. Low-Collaboration Teams

In interviews, team members in high-collaboration settings described streamlined workflows where each member understood their specific responsibilities, allowing for smooth task transitions. Participants frequently noted the benefits of standardized communication protocols, such as structured briefings and handoffs, which minimized miscommunication and procedural delays. Observations confirmed that these protocols contributed to a shared mental model within teams, reducing the time spent clarifying tasks during surgery.

The data analysis indicates that communication frequency and role clarity are integral to the effective functioning of surgical teams. Teams that employed standardized communication methods, including checklists and briefing protocols, experienced fewer communication breakdowns. The quantitative analysis further showed a strong correlation between role clarity and reduced task redundancy.

Table 2 displays communication frequency and task redundancy occurrences in teams with high versus low role clarity, illustrating that increased communication and clearly assigned roles led to more efficient operations.

Table 2: Communication and Task Redundancy in High vs. Low Role Clarity Teams

Metric	High Role Clarity	Low Role Clarity
Communication Frequency (Messages per Surgery)	15	8
Task Redundancy (Occurrences)	0.5	2.3

In addition, Figure 2 depicts the inverse relationship between role clarity and task redundancy, showing that teams with clearly defined roles required fewer corrective actions.

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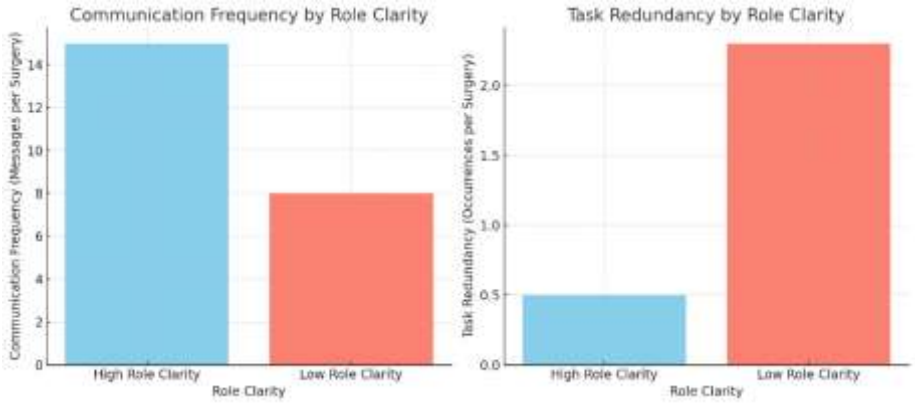

Figure 2: Task Redundancy by Role Clarity

Interviews supported these findings, with participants describing the benefits of knowing their specific responsibilities and how their roles integrated into the larger surgical process. Nurses, in particular, highlighted the value of role clarity in anticipating the needs of other team members, allowing them to proactively prepare equipment and resources, further enhancing time efficiency.

The study also found that interdisciplinary collaboration significantly affects patient outcomes, including safety, recovery time, and satisfaction. Analysis of patient records revealed that patients treated by high-collaboration teams experienced fewer postoperative complications, shorter hospital stays, and higher satisfaction scores.

Table 3 provides a summary of patient outcomes for surgeries conducted by high-collaboration versus low-collaboration teams, showing differences in complication rates, length of hospital stays, and patient satisfaction.

Table 3: Patient Outcomes in High vs. Low-Collaboration Teams

Patient Outcome	High-Collaboration Teams	Low-Collaboration Teams
Complication Rate (%)	5	12
Average Hospital Stay (days)	3	5
Patient Satisfaction (Score out of 10)	8.5	6.7

In Figure 3, a bar chart compares the complication rates and satisfaction scores, illustrating the clear difference in outcomes related to team collaboration.

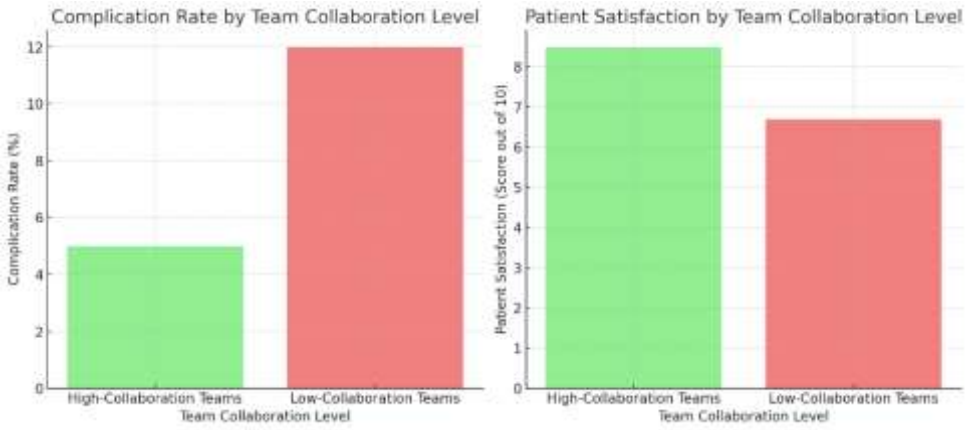

Figure 3: Patient Satisfaction by Team Collaboration Level

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Qualitative data from interviews reinforced these results, with participants noting that collaborative teams were better able to identify and mitigate potential risks during surgery. Anesthesiologists reported that open communication and shared decision-making contributed to a safer environment, as it allowed team members to raise concerns and adjust the surgical process in real-time based on patient needs.

Despite the benefits of interdisciplinary collaboration, the study also identified barriers, including hierarchical structures and cultural differences among disciplines. Interview data highlighted that hierarchical dynamics sometimes inhibited team members from voicing concerns, especially in low-collaboration teams. This barrier was particularly noted by nursing staff, who expressed hesitation in communicating potential risks due to the perceived hierarchy.

Observations confirmed that teams with rigid hierarchies faced more frequent communication breakdowns, leading to delays and occasional procedural errors. Addressing these barriers, participants suggested that regular team-building exercises and leadership training could promote a more egalitarian environment, encouraging open communication and collective responsibility.

Overall, the findings suggest that interdisciplinary collaboration enhances both operational efficiency and patient outcomes within surgical teams. Clear communication, structured role definitions, and open team dynamics are key drivers of successful collaboration. Challenges, however, remain, particularly related to hierarchical barriers. Future research could explore targeted interventions to foster more inclusive communication and further optimize team performance.

Discussion

The findings from this study underscore the critical role of interdisciplinary collaboration in enhancing both operational efficiency and patient outcomes within surgical teams. Comparing the data on high-collaboration versus low-collaboration teams reveals key insights into how structured teamwork and communication significantly improve the quality and effectiveness of surgical care. High-collaboration teams consistently demonstrated shorter surgery durations, streamlined resource use, and fewer procedure delays, affirming previous research on the positive impact of well-coordinated teams (Hughes et al., 2016; Manser, 2009; Mohammad et al., 2024). These operational efficiencies are attributed to clear communication protocols, role clarity, and established teamwork practices, which collectively create a shared mental model within the team, allowing members to anticipate needs and reduce redundancies.

The influence of interdisciplinary collaboration extends beyond operational efficiency to encompass improved patient outcomes, as evidenced by lower complication rates, shorter hospital stays, and higher patient satisfaction scores in high-collaboration settings. These results are consistent with prior studies showing that effective teamwork and open communication in surgical settings are essential to patient safety (Salas et al., 2017; Nurok et al., 2011). High-collaboration teams facilitated proactive risk identification and timely interventions, preventing complications and enhancing patient recovery processes. Additionally, the positive emotional climate observed in high-collaboration teams aligns with findings by Nurok et al. (2011), which highlight how respectful, supportive team environments contribute to both patient and staff well-being.

However, the study also identifies significant challenges to achieving effective interdisciplinary collaboration in surgical settings. Hierarchical structures within surgical teams, along with cultural and disciplinary differences, often inhibit open communication and discourage team members from raising concerns, particularly in lower-ranking roles such as nursing. This hierarchical dynamic was especially prominent in low-collaboration teams, where communication breakdowns and misunderstandings were more frequent. The presence of rigid hierarchies can lead to stress, role ambiguity, and unaddressed safety concerns, all of which compromise the team's overall performance and patient care quality (Hull et al., 2012; Lingard et al., 2004).

These findings suggest that fostering an inclusive, egalitarian team culture is essential for optimizing interdisciplinary collaboration. Structured training programs focused on teamwork skills, leadership, and

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communication protocols can help bridge hierarchical divides and encourage all team members to actively participate. Regular team-building exercises and simulation-based training, as recommended by Hughes et al. (2016), can reinforce collaborative practices and role clarity, empowering team members to communicate openly and contribute to decision-making. Furthermore, leadership training for senior staff can promote a supportive team environment where junior members feel comfortable voicing concerns, ultimately enhancing team cohesion and patient safety.

In addition to addressing hierarchy, enhancing role clarity and implementing standardized communication protocols can further improve surgical team efficiency. The data shows that high-collaboration teams, with well-defined roles and responsibilities, experience less task redundancy and more streamlined workflows. Structured briefings, checklists, and debriefing sessions have proven effective in reinforcing role expectations and providing a platform for addressing any issues or misunderstandings before and after procedures. These strategies align with existing literature, which emphasizes the importance of structured communication methods in improving surgical team dynamics (Lingard et al., 2004).

Overall, this study contributes to the growing body of evidence supporting the value of interdisciplinary collaboration in surgical teams. By identifying key drivers, such as communication, role clarity, and inclusive team culture, as well as barriers like hierarchy and disciplinary divides, this research highlights the essential elements needed to foster effective collaboration. While some challenges remain, targeted interventions, including leadership training, standardized protocols, and regular team-building activities, can help overcome these obstacles, ultimately enhancing both surgical team performance and patient care quality.

Future research should explore the long-term impact of these interventions on surgical outcomes and investigate strategies for promoting interdisciplinary collaboration in other high-stakes healthcare settings. Additionally, examining the specific impact of collaboration on different surgical specialties may reveal unique insights, allowing for more tailored approaches to team training and protocol development.

Recommendations

To enhance interdisciplinary collaboration in surgical teams and improve both operational efficiency and patient outcomes, this study proposes several targeted recommendations. Implementing these strategies can help address the challenges identified, such as hierarchical barriers, role ambiguity, and communication breakdowns, while promoting a cohesive, supportive environment in high-stakes surgical settings.

Structured Team Training Programs: Surgical teams would benefit from regular, structured training focused on teamwork and communication skills. Simulation-based training exercises can mimic real surgical environments, allowing team members to practice collaborative responses to complex, dynamic situations without compromising patient safety. These sessions should include role-playing and scenario-based problem-solving to enhance participants' ability to work effectively under pressure and to foster a shared mental model within the team.

Standardized Communication Protocols: Implementing clear communication protocols, such as checklists, standardized briefings, handoffs, and debriefings, can improve information flow and reduce misunderstandings. Protocols like the Surgical Safety Checklist and structured preoperative briefings enable team members to review roles, expectations, and potential concerns before each procedure, ensuring that everyone has a clear understanding of the surgical plan and potential risks.

Leadership Development and Hierarchy Awareness: Leadership training for senior team members, including surgeons and anesthesiologists, is critical in creating an environment where all team members feel comfortable voicing concerns. Training programs should address the impact of hierarchy on communication and provide strategies for leaders to foster inclusivity, such as inviting input from all team members, regardless of role. By promoting a respectful, egalitarian approach to leadership, teams can mitigate the negative effects of hierarchy and encourage open dialogue.

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Role Clarity and Responsibility Allocation: Ensuring that each team member understands their specific role within the surgical process is essential for efficient task execution. Role clarity can be reinforced through team orientation sessions, where responsibilities and task boundaries are clearly defined. Implementing visual role markers, such as badges indicating each team member's role, can also help clarify responsibilities, reducing task redundancy and ensuring that each member is performing tasks aligned with their expertise.

Regular Team Debriefing and Feedback Sessions: Following each surgery, debriefing sessions should be held to review what went well, address any issues encountered, and identify areas for improvement. These sessions provide an opportunity for all team members to offer feedback and learn from the experiences of others, fostering a culture of continuous improvement. Regular feedback loops also allow surgical teams to adapt their practices and refine their collaboration strategies based on real-time insights.

Enhanced Team-Building Activities: Engaging team members in regular team-building activities outside the operating room can help strengthen interpersonal bonds and improve overall cohesion. Activities such as workshops, retreats, or informal gatherings provide team members with the opportunity to build trust and rapport, reducing barriers between disciplines and fostering mutual respect. A strong, trusting team dynamic facilitates smoother communication and increases team members' willingness to support one another during surgical procedures.

Ongoing Research and Evaluation: Regular assessment of team dynamics and patient outcomes should be conducted to evaluate the effectiveness of these recommendations. Data collected on metrics like communication frequency, complication rates, and patient satisfaction can help track progress and identify areas for further improvement. Additionally, further research into the specific needs of different surgical specialties may yield valuable insights, enabling hospitals to customize team training and protocols to suit various operational contexts.

By implementing these recommendations, surgical teams can foster a collaborative environment that supports effective communication, role clarity, and a culture of mutual respect. These improvements will not only enhance team efficiency but also contribute to better patient safety and care quality.

Conclusion

This study underscores the importance of interdisciplinary collaboration in surgical teams, highlighting its impact on operational efficiency and patient outcomes. Through structured teamwork, clear communication, and defined roles, high-collaboration teams demonstrated improved performance metrics, including reduced surgery duration, streamlined workflows, and better patient outcomes such as lower complication rates and higher satisfaction scores. These findings align with previous research, emphasizing that well-coordinated surgical teams are better equipped to manage the complexities of the operating room, ultimately enhancing both the quality and safety of patient care.

However, the challenges posed by hierarchical structures and disciplinary differences within teams remain significant. Hierarchical dynamics, particularly in low-collaboration teams, were found to inhibit open communication and discourage the sharing of concerns, often leading to delays and errors. This study recommends targeted interventions—such as team training, leadership development, and standardized communication protocols—to foster an inclusive, supportive team environment where all members can contribute actively.

By addressing these barriers and promoting effective interdisciplinary collaboration, surgical teams can achieve greater cohesion, reduce procedural risks, and ensure positive outcomes for patients. Continued research into specific team interventions and collaboration strategies across different surgical specialties will further contribute to the development of best practices, enhancing the overall effectiveness of surgical care and improving patient experiences.

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References

Almomani, T., Almomani, M., Obeidat, M., Alathamneh, M., Alrabei, A., Al-Tahrawi, M., & Almajali, D. (2023). Audit committee characteristics and firm performance in Jordan: The moderating effect of board of directors' ownership. Uncertain Supply Chain Management, 11(4), 1897-1904. http://dx.doi.org/10.5267/j.uscm.2023.6.002

Alrabei, A. M. (2023). Green electronic auditing and accounting information reliability in the Jordanian social security corporation: the mediating role of cloud computing. International Journal of Financial Studies, 11(3), 114. https://doi.org/10.3390/ijfs11030114

Alrabei, A. M., & Ababnehi, D. S. (2021). The Moderating Effect of Information Technology on the Relationship between Audit Quality and the Quality of Accounting Information."Jordanian Auditors' Perception. Journal of Theoretical and Applied Information Technology, 99(14).

AL-Zyadat, A., Alsaraireh, J., Al-Husban, D., Al-Shorman, H., Mohammad, A., Alathamneh, F., Al-Hawary, S. (2022). The effect of industry 4.0 on sustainability of industrial organizations in Jordan. International Journal of Data and Network Science 6(4), 1437-1446. http://dx.doi.org/10.5267/j.ijdns.2022.5.007

Arora, S., Sevdalis, N., Nestel, D., Woloshynowych, M., Darzi, A., & Kneebone, R. (2010). The impact of stress on surgical performance: A systematic review of the literature. Surgery, 147(3), 318-330. https://doi.org/10.1016/j.surg.2009.10.007

Azzam, I., Alserhan, A., Mohammad, Y., Shamaileh, N., Al-Hawary, S. (2023). Impact of dy-namic capabilities on competitive performance: A moderated-mediation model of en-trepreneurship orientation and digital leadership. International Journal of Data and Network Science 7(4), 1949-1962. http://dx.doi.org/10.5267/j.ijdns.2023.6.017

Baker, D. P., Day, R., & Salas, E. (2006). Teamwork as an essential component of high-reliability organizations: A case study of teamwork failure in surgery. Health Services Research, 41(4p1), 1576-1598. https://doi.org/10.1111/j.1475-6773.2006.00566.x

Boet, S., Bould, M. D., Bruppacher, H. R., Desjardins, F., Chandra, D., & Naik, V. N. (2011). Looking in the mirror: Self-debriefing versus instructor debriefing for simulated crises. Critical Care Medicine, 39(6), 1377-1381. https://doi.org/10.1097/CCM.0b013e31820eb8be

Cooper, S. J., & Cant, R. P. (2014). Simulation-based learning in nurse education: Systematic review. Journal of Advanced Nursing, 70(1), 97-109. https://doi.org/10.1111/jan.12116

Edmondson, A. C. (1999). Psychological safety and learning behavior in work teams. Administrative Science Quarterly, 44(2), 350-383. https://doi.org/10.2307/2666999

Flin, R., & Maran, N. (2004). Identifying and training non-technical skills for teams in acute medicine. Quality and Safety in Health Care, 13(Suppl 1), i80-i84. https://doi.org/10.1136/qshc.2004.009993

Green, B., Oeppen, R. S., Smith, D. W., & Brennan, P. A. (2017). Challenging hierarchy in healthcare teams: Ways to flatten gradients to improve teamwork and patient care. British Journal of Oral and Maxillofacial Surgery, 55(5), 449-453. https://doi.org/10.1016/j.bjoms.2017.02.010

Grosseman, S., Hojat, M., & Gonçalves, M. (2014). Empathy, teamwork and burnout in Brazilian medical students. International Journal of Medical Education, 5, 169-175. https://doi.org/10.5116/ijme.5412.c29d

Healey, A. N., Undre, S., & Vincent, C. A. (2006). Defining the technical skills of teamwork in surgery. Quality and Safety in Health Care, 15(3), 231-234. https://doi.org/10.1136/qshc.2005.015370

Hughes, A. M., Gregory, M. E., & Joseph, D. L. (2016). Managing teamwork in the operating room: A focus on team training and simulation. Anesthesia & Analgesia, 123(5), 1209–1220. https://doi.org/10.1213/ANE.0000000000001467

Hull, L., Arora, S., Kassab, E., Kneebone, R., & Sevdalis, N. (2012). Assessment of stress and teamwork in the operating room: Novel training techniques for improving patient safety. Surgery, 151(6), 771-778. https://doi.org/10.1016/j.surg.2011.10.001

Jahmani, A., Jawabreh, O., Abokhoza, R., & Alrabei, A. M. (2023). The impact of marketing mix elements on tourist's satisfaction towards Five Stars Hotel Services in Dubai during COVID-19. Journal of Environmental Management & Tourism, 14(2), 335-346.

Keebler, J. R., Lazzara, E. H., Patzer, B. S., Palmer, E. M., Plummer, J. P., & Smith, D. C. (2014). Meta-analyses of teamwork and communication: Best practices and recommendations for healthcare teams. Military Medicine, 179(Suppl_11), 57-64. https://doi.org/10.7205/MILMED-D-14-00111

Lingard, L., Espin, S., Whyte, S., Regehr, G., Baker, G. R., Reznick, R., & Bohnen, J. (2004). Communication failures in the operating room: An observational classification of recurrent types and effects. Quality and Safety in Health Care, 13(5), 330-334. https://doi.org/10.1136/qshc.2003.008425

Manser, T. (2009). Teamwork and patient safety in dynamic domains of healthcare: A review of the literature. Acta Anaesthesiologica Scandinavica, 53(2), 143-151. https://doi.org/10.1111/j.1399-6576.2008.01717.x

Manthous, C. A., & Hollingshead, A. B. (2011). Team science and critical care. American Journal of Respiratory and Critical Care Medicine, 184(1), 17-25. https://doi.org/10.1164/rccm.201011-1804OE

Mazzocco, K., Petitti, D. B., Fong, K. T., Bonacum, D., Brookey, J., Graham, S., & Thomas, E. J. (2009). Surgical team behaviors and patient outcomes. American Journal of Surgery, 197(5), 678-685. https://doi.org/10.1016/j.amjsurg.2008.03.002

Mohammad, A.A., Alshurideh, M.T., Mohammad, A.I., Alabda, H.E., Alkhamis, F.A., Al Oraini, B., Al-Hawary, S.I.S., Vasudevan, A., Kutieshat, R.J. (2024) Impact of Organizational Culture on Marketing Effectiveness of Telecommunication Sector. In: Hannoon. A, and Reyad, S. (eds): Frontiers of Human Centricity in The Artificial Intelligence-Driven Society 5.0. Studies in Systems, Decision and Control. Springer, Cham.

Nurok, M., Evans, L. A., Lipsitz, S., Satwicz, P., Kelly, A., & Frankel, A. (2011). The relationship of the emotional climate of work and threat to patient outcome in a high-volume thoracic surgery center. BMJ Quality & Safety, 20(3), 237-242. https://doi.org/10.1136/bmjqs.2010.042382

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Paige, J. T., Kozmenko, V., Yang, T., Paragi Gururaja, R., Hilton, C. W., Cohn, I., ... & Chauvin, S. (2009). High-fidelity simulation-based training improves surgical team performance. American Journal of Surgery, 197(1), 73-78. https://doi.org/10.1016/j.amjsurg.2008.08.012

Parker, S. H., Yule, S., Flin, R., & McKinley, A. (2012). Training surgical teams using simulation: A systematic review of the literature. Simulation in Healthcare, 7(6), 328-333. https://doi.org/10.1097/SIH.0b013e318262639f

Rahamneh, A., Alrawashdeh, S., Bawaneh, A., Alatyat, Z., Mohammad, A., Al-Hawary, S. (2023). The effect of digital supply chain on lean manufacturing: A structural equation modelling approach. Uncertain Supply Chain Management 11(1), 391-402. http://dx.doi.org/10.5267/j.uscm.2022.9.003

Reader, T. W., Flin, R., Mearns, K., & Cuthbertson, B. H. (2007). Interdisciplinary communication in the intensive care unit. British Journal of Anaesthesia, 98(3), 347-352. https://doi.org/10.1093/bja/ael372

Salas, E., Reyes, D. L., & McDaniel, S. H. (2017). The science of teamwork: Progress, reflections, and the road ahead. American Psychologist, 72(4), 593-600. https://doi.org/10.1037/amp0000120

Salas, E., Sims, D. E., & Burke, C. S. (2005). Is there a "big five" in teamwork? Small Group Research, 36(5), 555-599. https://doi.org/10.1177/1046496405277134

Sutcliffe, K. M., Paine, L., & Pronovost, P. J. (2017). Re-examining high reliability: actively organising for safety. BMJ Quality & Safety, 26(3), 248-251. https://doi.org/10.1136/bmjqs-2015-004248

Weick, K. E., & Sutcliffe, K. M. (2001). Managing the unexpected: Assuring high performance in an age of complexity. Jossey-Bass.

West, M. A., Guthrie, J. P., Dawson, J. F., Borrill, C. S., & Carter, M. (2014). Reducing patient mortality in hospitals: The role of human resource management. Journal of Organizational Behavior, 27(7), 983-1002. https://doi.org/10.1002/job.396