

## INVESTIGATING THE RELATIONSHIP BETWEEN SURGICAL TEAM COMMUNICATION AND PATIENT OUTCOMES

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**Abstract:** Surgical team plays a vital role in the care of patients during the surgery. For safe patient outcomes, surgical team members must effectively communicate within the surgical site. Communication breakdowns in the complex operating room atmosphere can result in unfavorable outcomes. To reduce risks, avoid errors and provide the best possible care for patients, the surgical team must communicate clearly and effectively with one another. Enhancing the quality of surgical treatment requires an understanding of the connection between communication and patient results. **Objective:** The purpose of this study was to investigate the connection between patient satisfaction outcomes and surgical communication between teams focusing on how the improved communication practices can enhance the patient safety in terms of care quality and satisfaction level in surgical setting. **Method:** The study comprised of 187 health care providers between the ages of 18 and 65 who were examined for the association between surgical team communication and patient outcomes after ethical approval from Hospital ethical committee. Descriptive cross-sectional study was carried out in the District Headquarters Teaching Hospital, Kohat Development Authority Kohat from January 2022 to July 2022. Data was Analyzed on SPSS and shown in tables. **Results:** The analysis shows a strong positive correlation (.595) between team communication and patient outcomes, with healthcare professionals that rates the quality of communication at an average of 3.84 out of 5, which is closely linked to a decrease in surgical complications and an increase in patient satisfaction. Sticking and communicating according to communication protocols was rated at 3.76, underlining its importance in patient safety improvements. **Conclusions:** The study affirms the crucial impact of effective communication among surgical team members on improving patient outcomes and safety in the operating site. The enhanced communication directly relates with faster patient recovery, lesser complications and higher patient satisfaction.

**Keywords:** Surgical team, communication, Patients, Standardized communication methods, Patients Safety, Staff understanding.

### Introduction

Effective communication within surgical teams is the key factor that ensures high-quality patient care and safety. The complexities of surgical procedures demand whole interaction among surgeons, anesthesiologists, nurses and other professionals that are present on the site. Recent research shows the critical link between team communication and patient outcomes, outlining that miscommunications or lack of clarity can lead to preventable medical errors, increased morbidity and even mortality (1). It can be challenging to foster effective communication and friendly expertise—which are crucial for patient safety as well as the efficiency and effectiveness of surgical procedures—because of interdependence, time restrictions and the unpredictability of the surgical setting. Surgical team members need to possess more than just clinical and academic knowledge. (2)

The World Health Organization (WHO) has identified communication failures as a leading cause of adversative events in hospitals that highlights the need for improved collaborative practices among surgical teams (WHO, 2019). As a Result, number of strategies, such as the introduction of surgical safety checklists and team training programs, have been implemented with the aim of enhancing communication and teamwork (3, 4). These initiatives have been shown to improve not only the quality of

communication but also surgical outcomes but it also indicates a positive and well linked correlation between the two. (5)

Although much work is done, there are still gaps in understanding the effectiveness communication among the surgical team member that directly or indirectly affects the patient outcomes. (6) This point needs to get clarified by health care professional in order to achieve stability in patient outcomes. Enhancing communication skills among healthcare providers in surgical settings can significantly improve patient outcome metrics. (7) As the critical importance of cohesive and clear communication among surgical teams is already well established, this study aims to explore the relationship between surgical team communication and patient outcomes in a comprehensive way by focusing on correlation between communication practices and the consequent health outcomes reported by the patients. (8)

### Methodology

This study involves 187 participants and the research that was carried out from January 2022 to July 2022 at the District Headquarter Teaching Hospital, Kohat Development Authority, Kohat, KPK. To comprehensively analyse the association between surgical team interaction

and patient outcomes, a cross-sectional method was used in this study. In particular, data was collected using a cross-sectional technique, which provided a momentary view of the outcomes being studied. To examine the connection between surgical communication among teams and results for patients, statistical Analysis was performed on the obtained data maintaining the ethical codes to conclude this study.

**Results**

The data reveals a diverse range of participant ages with an average of 39.09 years and responses ranging from 18 to 65 years. An analysis of the connection between the frequency of surgical errors, unfavorable events and patient harm and the effectiveness of the surgical team's communications. An examination of how patient satisfaction with surgical training, cooperation and communication style are related.

**Table 1: Descriptive Statistics of Healthcare Providers' Responses on Surgical Team Communication (n = 187)**

Descriptive Statistics					
	N	Minimum	Maximum	Mean	Std. Deviation
Age	187	18	65	39.09	13.588
Years of experience in healthcare	187	10	35	22.49	7.517
How much you rate the overall quality of communication within surgical team?	187	1	5	3.84	.923
How frequently do team members actively listen to each other during surgical procedures?	187	1	5	3.86	.907
Do you feel that there are clear communication channels established within your surgical team?	187	1	5	3.98	.953
How often are misunderstandings or misinterpretations of information resolved effectively within your surgical team?	187	1	5	3.91	.918
In your experience, how often do surgical complications occur in procedures where communication within the team is perceived to be poor?	187	1	5	3.90	0.913
Have you observed a correlation between effective communication within the surgical team and patient satisfaction with their surgical experience?	187	1	5	3.88	.908
How frequently do you think surgical errors occur due to breakdowns in communication among team members?	187	1	5	3.79	.883
Do you believe that adherence to standardized communication protocols within the surgical team contributes to improved patient safety?	187	1	5	3.76	.899

**Table 2: Interaction among the Surgical Group (n= 187)**

One-Sample Analysis				
	N	Means	Std. Deviations	Std. Mean Error
In your surgical team, how would you rank the general level of communication quality?	187	3.84	.923	.068
How frequently do team members actively listen to each other during surgical procedures?	187	3.86	.907	.066
Do you feel that there are clear communication channels established within your surgical team?	187	3.98	.953	.070
How often are misunderstandings or misinterpretations of information resolved effectively within your surgical team?	187	3.91	.918	.067

**Table 3: Correlation Testing among Variables**

Correlations			
		In the surgical team, interaction	Patient results
In the surgical team, interaction	Pearson's Correlation	1.0	0.595*
	Sig. 2-tailed		0.00
	Total N	187.00	187.00
Patients	Pearson's Correlation	0.595*	1.0
	Sig. 2-tailed	0.00	
	Total N	187.00	187.00

**\*\*At the 2-headed 0.01 significance level, the connection is substantial**

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**Table 4 Regression Analysis**

Regression Statistics			
	Mean	Std. Deviation	N
Patient Outcomes	15.4652	2.48276	187
Communication among the Surgical Team members	15.4332	2.38038	187

The descriptive statistics shows that the average rating of communication quality within surgical teams at 3.84/5, that indicates strong perception of communication effectiveness among the healthcare professionals. metrics such as active listening during procedures have mean of 3.86 while the establishment of clear communication channels gives mean of 3.98 and effective resolution of misunderstandings shows mean of 3.91. These all corresponds to the favorable communication practices within the surgical team. The average number of years of healthcare experience reported by the participants was 22.49, with an average of 10 years and an aggregate of 35 years. The questions on the general level of discourse within surgical groups, the frequency of giving attention during techniques and the development of open channels of communication yielded mean scores ranging from 3.8 to 4.0. These results imply that most people have positive opinions of group communication. (Table 1)

The test with one sample result indicates that there is an important variance between the mean scores for each component of communications within the surgical units and the unaffected midway value of 0. The t-test produced an outcome of 56.957 (df = 186, p <.001) for the overall level of communication between surgical teams, showing a substantial deviation from the neutral middle. With an interval of confidence of 95% spanning from 3.71 to zero, the mean change was 3.845.(Table 2). Our results shows that participants generally had positive perceptions of communication quality, including its general quality, attentiveness, ability to create clear channels and capability for successfully clearing up misunderstandings. Compared to the impartial midpoint value of 3, the mean score for the total level of communication was 3.84, an enormous increase.

The average rating for the incidence of surgical problems during procedures where there is thought to be insufficient interaction within the team has been determined to be 3.898, with a variance of 0.913.

Correlation analysis show an independent and highly positive relationship between patient satisfaction and surgical team communication. With a level of significance of p <.001 and a Pearson correlation value of 0.595, the link is moderately strong and favorable. The analysis validates a significant positive correlation (Pearson's r = 0.595, p < 0.000) between the interaction within surgical teams and patient outcomes. (Table 3)

The regression analysis provides valuable insights, demonstrating a strong correlation between surgical teamwork and patient satisfaction. The median score for clinical results is 15.4652, with a variance of 2.48276. The study finds a significant beneficial communication between surgical teamwork and results for patients. The surgeon team's statistics received an average rating of 15.4332, whereas the individual's outcomes received a total score of 15.4652. There is a somewhat high positive association between these two variables, as indicated by a Pearson correlation value of 0.595 (Table 4).

## Discussion

Good results for patients and the provision of excellent medical care are contingent upon surgical teams having effective communication. Promoting patient safety, reducing errors and optimizing surgical results all depend on clear effective communications among health care providers, including surgeons, nursing staff anesthesia specialists and support personnel, in the intricate and rapid pace of the operation room. (2) The potential effects of communication on many patient care outcomes, such as the frequency of complications following surgery, satisfaction with care and overall quality of care, highlight the importance of dialogue in the surgery context. (6, 7, 9)

This research attempts to clarify the following important points through a review of the literature that has already been written, empirical investigations and analytical analyses: an analysis of the channels, structures and strategies used by surgical teams to communicate during surgeries.

Participants standard score for the effectiveness of removing misunderstandings or miscommunications about data inside surgical units was above the crucial limit of 3.6 (8) compared with our research which was 3.75. This suggests a generally positive assessment, though there is still room for improvement. Enhanced communication among team members is likely to lead to improved patient. This emphasizes having good communication is essential to getting the best possible results for patients during surgery. (10, 11)

The research findings indicate a small connection between surgical team dissatisfaction and issues during the procedure. Successful communication was found to be connected with patient satisfaction, in contrast to the fairly high rate of medical errors induced by communication failures. (12) Additionally, patient safety is improved when defined communication standards are followed. The viewpoints and experiences of medical professionals regarding teamwork in surgical teams are crucial and these results can directly affect, efforts should be done to improve interpersonal protocols and avoid infection in medical environments. (13)

The general perception related to the aspects of collaboration within the operating teams was also quite positive, as indicated by consistently higher mean responses compared with the neutral mid-point. This is in contrast to previous work where overall mean scores were significantly shorter from the midpoint. (2, 14, 15)

According to the econometric study, patient results are significantly predicted by interaction within the surgical staff, which accounts for about 35.4% of the overall variance in the results (15). Our results for the regression model demonstrates how well it is related. Better communication within the surgical team is positively correlated with better patient outcomes (10) as indicated by the very significant coefficient related to communication within the team.

This research supports the powerful impact of effective communication within surgical teams on patient safety and satisfaction the importance of creating an environment of clear and effective communication within surgical teams to optimize patient outcomes. Strategies need to developed for enhancing communication levels including training programs and the implementation of standardized protocols that accounts for the improving patient safety, reducing complications and it also enhances overall satisfaction with surgical experiences. (2, 12-18)

## Conclusion

The study proves the critical role of effective communication among the surgical team members to enhance the patient outcomes and to maintain the patient's safety in the operative room. The results clearly indicate that patient recovery is directly linked to improved communication, with fewer complications and a significantly higher patient satisfaction rate observed in this context. The finding of the results gives insights about the importance of communication trainings and practices by surgical team members by the health care system that will promote the situation of clear communication among surgical teams that will emerge as a basic and adoptive way to increase patient care and satisfaction level by maintaining safety values.

## Declarations

### Data Availability statement

All data generated or analyzed during the study are included in the manuscript.

### Ethics approval and consent to participate.

Approved by the department Concerned. (IRBEC-DHQ-230/21)

### Consent for publication

Approved

### Funding

Not applicable

## Conflict of interest

The authors declared an absence of conflict of interest.

## Authors Contribution

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