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Developing Communication Skills in Surgical Residents in Emergency Setting

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ABSTRACT

Introduction: Effective communication is a foundation competency for medical professionals, yet training often falls short, especially during residencies. This leads to a decline in inter-personal skills without constant honing. For surgical residents, communicating effectively in emergencies is more than a soft skill; it is necessary for rapid decision-making and interdisciplinary collaborations under pressure.

Objectives: This study aimed to determine the effectiveness of a structured training program to enhance communication skills of surgical residents in high-stress situations. It also aimed to use participant-feedback to refine and develop a routine training module.

Methodology: This was a six-month, single centre, interventional study enrolling all 1st and 2nd year surgical residents who volunteered. The Kalamazoo's Essential Elements Communication checklist was used to quantify skills in a pre-test, followed by three months targeted training and finally a post-test. Student's t-test was used to compare mean scores, considering $p<0.05$ statistically significant

Results: Scores post-training showed a statistically significant improvement across nearly all elements of the Kalamazoo's checklist, confirming the positive impact of the intervention. Qualitative feedback highlighted the residents' appreciation for the training in active listening and role of non-verbal cues. Faculty observation of simulated scenarios further validated the residents' enhanced empathy and clarity.

Conclusion: The significant improvement underscored the need for a structured communication training program for surgical residents in emergency situations and a recommendation for a target-oriented module to be seamlessly integrated in the first-year residency programme is put across

Keywords: Communication skills, Surgical residents, medical education, Kalamazoo checklist, Postgraduate training

INTRODUCTION

Effective communication skill is a vital pillar of clinical competencies and a part of the training process in most medical school curricula worldwide. However, these crucial skills are often insufficiently addressed during clerkships and postgraduate trainings, despite the fact that they tend to decline unless regularly recalled and practiced.[1] The need for effective communication skills is particularly high among surgical residents who are often involved in rapid decision-making and collaboration with multidisciplinary teams

under time-sensitive and often life-threatening circumstances. [2,3]

Dealing with medical emergencies require technical and medical knowledge balanced with the ability to swiftly adapt communication skills; ensuring clarity in written instructions and seamless coordination of care. [4,5] Verbal exchanges, understanding non-verbal cues, clarity in written instructions and proficiency in using technology all need to be balanced along with humanistic skills such as display of compassion, empathy and reassurance. [5-9]

The most effective pedagogical approach for developing communication soft skills involves observation of performance coupled with focused, constructive feedback. [10] The reinforced learning and correction of mistakes one the clinical skills, while indirectly improving patient care through better supervision. [11,12]

Based on this essential background, this study was conceived to address the training gap by assessing the impact of a structured training program on improving communication skills among surgical residents in emergency setting, while concurrently creating awareness of optimal communication techniques and developing a scalable, refined and structured training module based on participants feedbacks.

MATERIALS & METHODS

The prospective interventional study, over a six-month period, was conducted in the Department of Surgery of Assam Medical College, Dibrugarh. All 1st and 2nd year General Surgery residents in Department of Surgery and a total 55 residents were enrolled and completed all phases of the study.

The study was proceeded in three main phases:

- ***Baseline Assessment (Pre-test):*** The volunteer participants were first sensitized to the importance of the skills being tested and their baseline knowledge was assessed using a validated tool- *Kalamazoo's Essential Elements Communication Checklist*; where the scoring rubric for the checklist option was: "*Done well*" =3, "*Needs improvement*" =2, "*Not done*" =1 and "*Not applicable*" =0. Then, to simulate real-world situations, the residents were divided into groups and asked to perform a role-play each based on a prompt of an emergency scenario. This as peer-reviewed and faculty-assessed.
- ***Training phase:*** All 55 participating residents were subjected to a series of structured training sessions over a three-month period. The training modules were designed to lay special focus on the areas identified as weak spots during pre-testing.
- ***Post-test assessment:*** A post-test was administered to all 55 of them using identical checklists and assessment protocols to measure the changes in scores. Participants were also asked to submit open-ended written feedback to ensure modules were beneficial to their real-world needs and experiences.

Study Implications

The study helped us detect what gaps exist in the present format of communication in dealing with patients/their relatives in the emergency setting and the difference in scores before and after training gave an idea of the effectiveness of training. Continuous improvement in the process of sensitization and teaching about communication with patients & attendants in the emergency setting will avoid unpleasant situations which may occur at times of stress ultimately improving patient care & outcomes.

Ethical Clearance

Ethical clearance was obtained from the Institutional Ethics Committee (Human) of Assam Medical College, Dibrugarh, Assam prior to the commencement of the study reference number AMC/EC/2024/5373.

STATISTICAL ANALYSIS

All data was complied, entered and analysed using MS Excel. Quantitative data was summarized using standard descriptive statistics of Mean and Standard Deviation. The qualitative data was presented as proportions and diagrams. Students' t-test was used to compare the change in mean pre-test and post-test scores and p-value<0.05 was considered statistically significant.

RESULT

A total of 55 post graduate trainees voluntarily participated in the entire study. They anonymously filled a pre-test and then were subjected to a series of training sessions over a period of 3 months, which was targeted to help enhance their communication abilities. They were thereafter asked to take a post-test each and the mean results of both pre-test and post-test were analyzed to check for improvement in their communication skills. The Kalamazoo Essential Elements Communication Checklist was used for both pre- and post-tests and scored accordingly. The mean scores of all 55 participants were summarized and compared using Student's t-test and the results are tabulated in Table 1.

Table 1: Summary of t-test of the mean scores of Pre-Test and Post-Test

Sl No	Element	Pre-Test (Mean)	Post-Test (Mean)	t-test	df	p-value
1. Build a relationship						
A	Greets and shows interest in patient as a person	1.45	1.7	43.3	46	<0.0001
B	Uses words that show care and concern throughout the interview	1.5	1.75	33.99	46	<0.0001
C	Uses tone, eye contact and posture that show care and concern	1.6	1.79	19.02	46	<0.0001
	Total	*4.55*	*5.24*	*3.415*	*46*	*0.0013*
2. Opens the discussion						
A	Allows the patient to complete the opening statement without interruptions	1.29	1.5	28.53	46	<0.0001
B	Asks "Is there anything else?" to elicit full set of concerns	1.33	1.21	-16.3	46	<0.0001
C	Explains and/or negotiates an agenda for the visit	1.38	1.46	10.87	46	<0.0001
	Total	*4.0*	*4.17*	*0.84*	*46*	*0.40*
3. Gather information						
A	Begins with patient's story using open-ended questions	1.13	1.38	33.97	46	<0.0001
B	Clarifies details as necessary with more specific questions	1.42	1.5	6.72	46	<0.0001
C	Summarizes and gives patients opportunity to correct/add information	1.54	1.50	-3.36	46	0.0018
D	Transitions effectively to additional questions	1.54	1.49	-4.20	46	0.0001
	Total	*5.63*	*5.87*	*1.18*	*46*	*0.24*
4. Understands the patient's perspective						
A	Asks about life events, circumstances that might affect the health	1.29	1.36	5.88	46	<0.0001
B	Elicits patient's beliefs, concerns and expectations about illness and treatment	1.34	1.39	4.20	46	0.0001
C	Responds explicitly to patients' statements about ideas, feelings and values	1.38	1.42	3.36	46	0.0016
	Total	*4.01*	*4.17*	*0.79*	*46*	*0.43*
5. Share information						
A	Assesses patient's understanding of problems and desires for information	1.58	1.67	7.56	46	<0.0001
B	Explains using words that are easy for patients to understand	1.79	1.52	-22.6	46	<0.0001

C	Checks for mutual understanding of diagnostic and treatment plans	1.54	1.68	11.76	46	<0.0001
D	Asks whether patient has any questions	1.42	1.59	14.28	46	<0.0001
	Total	*6.33*	*6.46*	*0.37*	*46*	*0.07*
6.Reach agreement						
A	Includes patient in choices and decisions	1.38	1.5	10.8	46	<0.0001
B	Asks about patient's ability to follow diagnostic and treatment plans	1.46	1.42	-4.03	46	0.0002
C	Identifies additional resources as appropriate	1.29	1.38	7.56	46	<0.0001
	Total	*4.13*	*4.3*	*0.49*	*46*	*0.63*
7. Provide closure						
A	Asks whether the patient has questions, concerns or issues	1.58	1.5	-6.72	46	<0.0001
B	Summarizes	1.0	1.33	27.73	46	<0.0001
C	Clarifies follow-up or contact arrangements	1.29	1.29	0.00	46	1.00
D	Acknowledges patients and closes interview	1.08	1.54	38.65	46	<0.0001
	Total	*4.95*	*5.66*	*2.05*	*46*	*0.046*
	Grand total	33.6	35.87	3.49	46	0.0011

These results show that a statistical significance is observed across almost all elements of the Kalamazoo Essential Elements Communication Checklist, suggesting that the training sessions on effective communication were helpful in improving communication of the participants in the desired situations. However, a negative change was observed in the elements of "Transitions effectively to additional questions", "Explains using words that are easy for patients to understand", "Asks about patients' ability to follow diagnostic and/or treatment plan" and "Asks whether the patient has questions, concerns or other issues". Despite these variations, the majority responses showed a positive change after the training.

Moreover, the results of the qualitative data from the open-ended questions in the post test and observer/peer reviews suggested that the participants benefited from the training sessions. A significant shift was observed in the cognitive framework and behavior of the participants; with most residents reporting enhanced empathy, active listening, clarity of explanation, effective conflict resolution and a strong endorsement of patient-centric approaches. The results of the self-perceived strengths of the residents and observed behavioral improvements are summarized in Table 2.

Table 2: Summary of the qualitative insights on communication skills post training

Domain	**Key finding**	**n (%)**
Understanding patient concerns	Preferred explaining all available treatment options before decision making	34 (61.8%)
Core communication strengths	Active listening	48 (87.2%)
	Empathy & understanding	48 (87.2%)
	Clarity in explanation	45 (81.8%)
Team communication & conflict handling	Expressing concerns in a structured & respectful manner	45 (81.8%)
	Trying to understand different perspectives before responding	43 (78.1%)
Perceived verbal communication effectiveness	Rated verbal communication as very effective	39 (70.9%)
Attitudinal change	Acknowledged importance of non-verbal communication	53 (96.3%)
	Agreed that communication style should be tailored to patient needs	54 (98.1%)

Thus, both quantitative and qualitative analysis of the results suggest that the participants showed a statistically significant improvement in the effective communication skills after being subjected to the training sessions on the said topic.

This highlights that similar training sessions for post graduate trainees across all other branches of medicine would also prove to be beneficial for the students and will help them deal better in emergency settings.

DISCUSSION

The results of this study indicate a statistical improvement in the scores of pre-test and post-test of the participants after undergoing the training sessions on communication in emergency situations. They demonstrate that a focused communication training program can effectively aid surgical residents to better handle complex, high-stress emergency interactions.

Similar results were show by a study done by Noordman J eta al in a health centre in Netherlands which showed that a brief training significantly increased resident's empathy scores according to patients and indicated that the quality of patient-centred care can be improved by integrating patient-centered communication into residency programs, at an academic medical health centre.[13]

Kanitkar S eta l in their study among medical resident doctors in Pune, India found that competency of residents and patient's satisfaction, evaluated using Kalamzoo's Essential Elements Communication Checklist and Interview Satisfaction Questionnaire, respectively showed improved following communication training programme and aided significantly in improving physician competencies and patient satisfaction.[14]

In a prospective interventional study by Shyamala KK et al in Bengaluru, India, a statistically significant increase in communication skill scores post training was observed amongst the forty three postgraduate medical students who participated, with mean post-test assessment scores of 24.26±2.94, $p<0.001$ 9faculty rating), 25.19±3.76, $p<0.001$(PG self-rating) and high degree of internal consistency was found and program was perceived as valuable and scope for integration of a standardized teaching and assessment of communication skills is essential for better healthcare practice and optimal doctor-patient relationship.[15]

Afzal N et al in a qualitative study to assess communication challenges found that multifaceted factors are responsible for inadequate patient resident-physician communication, highlighting the need for importance of developing a formal communication skills training curriculum for residents and that these insights can be used to create standardized training for equipping residents with adequate skills for effectively communicating with patients which can improve healthcare service delivery and patient outcomes.[16]

Chavan KD et al in their study in Maharastra, India found that the participating residents had varied knowledge about communication skills and they showed a fair attitudes and behavior towards mindfulness and basic communication skills and all participating residents felt the need for a training programme as part of their orientation in the department in the first year which would help them cope better in the emergency situations that might arise in the future.[17]

CONCLUSION

The training session on communication skills for Post Graduate Trainee students was conducted with the goal of enhancing their ability to manage patient interactions effectively in emergency settings and bore positive results. Emergency patient care often is a game of high-stress situations where timely decision-making, clear communications and empathetic interactions can significantly improve patient outcomes. Through a series of pre- and post-training assessments, the project demonstrated that structured communication training led to notable improvements in several key areas, including clarity in delivering information, active listening, managing patient and family emotions, and ensuring understanding in fast-paced environments enhancing participants' enhanced confidence and adaptability in handling

critical situations under time constraints. Improvements in teamwork and coordination among residents was seen, especially during emergencies where collaboration is important.

In conclusion, the findings affirm the value of targeted communication training for post graduate trainees and this intervention not only improved their ability to manage patient interactions in emergency settings, but also had a positive impact on patient satisfaction and care outcomes.

Given the success of the initiative, it can be recommended that a structured communication training can be integrated into the medical residency curriculum, as part of their orientation programme in the first year of residency, irrespective of the branch. Expanding the scope of similar programmes to include other departments, with a more refined, concise and target-oriented programme, incorporating simulation-based learning and periodic refresher courses to ensure sustained skill development and assessing their long-term impact on professional development and patient care is essential. By prioritizing communication skills training programmes, healthcare systems can foster better patient experiences, improved teamwork and higher standards of care in emergencies and beyond - ultimately bridging the widening gap between healthcare professionals and patients and reducing the prevalence of work-place violence and conflicts in emergencies and casualty rooms.

Declaration by Authors

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