Assessment of communication skill during process of preoperative visit and informed consent by anesthesiology residents

Sweta V. Salgaonkar, Aarti D. Kulkarni, Sunil P. Chapane
Department of Anesthesia, Seth GS Medical College and KEM Hospital, Parel, Mumbai, Maharashtra, India

Abstract

Background and Aims: Anaesthesiologists have few opportunities to communicate with patients especially in preoperative period for various reasons. If these opportunities are not well utilized, anaesthesiologists may not be able to educate patients about anaesthesia related issues. The aim of this study was to assess communication skill (CS) exhibited by the anaesthesiology residents during the process of preoperative visit and informed consent.

Material and Methods: This was a pre and post intervention questionnaire based study carried out in a presurgical ward of a tertiary hospital. During the process of preoperative visit and informed consent, fourteen of the second year anaesthesia residents were assessed by faculty members for various aspects of CS using validated questionnaire on 3-point Likert’s scale, before and after CS workshop. Residents’ perception about workshop and patient satisfaction with regards to the preoperative visit and process of informed consent was assessed. Results were described in percentage value and a qualitative analysis was carried out.

Results: While none of the residents exhibited ‘excellent CS score’ in the pre-workshop phase, six (42.86%) achieved the same after the workshop. One resident, who had ‘poor CS score’ moved to higher category score post workshop. The behavioural traits of professionalism, empathy, risk explanation and written consent showed statistically significant improvements post intervention by Wilcoxon Signed Rank Test, with P value < 0.05. All residents felt that good communication can improve patient satisfaction and CS training should be part of the post graduate curriculum.

Conclusion: Conduct of CS workshop for anesthesia residents improved certain behavioral traits during anaesthesia preoperative visit and informed consent process. This important nontechnical skill of CS, may not be uniformly acquired during clinical training and should be specifically taught and evaluated as part of post graduate curriculum.

Keywords: Anesthesiology residents, communication skill, patient satisfaction, post graduate curriculum

Introduction

Good communication between doctor and patient is important to improve patient satisfaction, health outcomes and reduce error, misunderstandings, and negligence claims.[1] Anesthesiologists practice in a high-risk critical care environment, and are thus, vulnerable to malpractice claims.[2] An anesthesiologist working in an operating room is never a primary physician to any patient, thus, she/he does not have direct communication with the patient till the day of the surgery or a day prior during the preoperative assessment. Inability to effectively communicate with patients regarding anesthesia techniques...
and risks has been shown to be a predictor of medico-legal vulnerability. Communication skill (CS) is an important non-technical skill for anesthesiologists required in clinical practice for safe and effective performance.

The primary objective of the present study was to assess the communication skill of anesthesia residents pre- and post ‘communication skill workshop’ during the process of preoperative visit and informed consent. The secondary objectives were to assess the residents’ perceptions regarding the need for CS workshop, residents’ demographic data, its correlation with CS and patient satisfaction regarding the process of informed consent and preoperative assessment.

**Material and Methods**

This was a pre- and post-intervention questionnaire-based qualitative study conducted in the department of anesthesia at a tertiary care teaching hospital of Mumbai in India in August 2017 over a period of 3 months. After seeking permission of the Institutional Ethics Committee, (IEC/775/16 dated 14th July 2016), a total of 20 second-year anesthesiology residents were approached for the study. Fourteen of them consented to participate in the study. Informed written consent was also obtained from 10 faculty members and 28 patients posted for surgery under anesthesia, who were willing to participate in the study. Second-year anesthesiology residents were primarily involved in the process of pre-anesthesia check-ups and informed consent processes.

Three questionnaires were designed by the study team members after reading literature on the subjects of communication skill for doctors, management and psychology. The questionnaires were sent to five consultants for validity, marking the questions as essential or non-essential. Two consultants were senior anesthesiologists (>15 years of experience) from the same medical college. The other two consultants were senior anesthesiologists (>15 years of experience) from other medical colleges in the city. The fifth consultant was a physician, who was a communication skill trained expert. The suggestions given by them were incorporated in the final version of all the three questionnaires submitted to the Institutional Ethics Committee. The content validity index was 0.6, 0.6, and 0.7 for CS assessment questionnaire by faculty, resident perception questionnaire, and patient satisfaction questionnaire respectively. The CS assessment questionnaire included 30 questions and was designed to assess the communication behavioral traits like professionalism, listening skills, interpersonal skills, empathy, communicating medical facts and procedural details, and obtaining written consent skills [Table 1]. Each participating resident was assessed pre- and post-CS workshop using this validated CS assessment questionnaire by one assigned faculty member. Each question was scored as either 1, 2, or 3 on a 3-point Likert scale depending on whether the skill in question was not exhibited, needed improvement, or was exhibited satisfactorily, respectively. Thus, each participating resident was awarded a total CS score ranging from 30 minimum to 90 maximum as there were 30 questions. The total CS score was graded as poor, average, good, or excellent for the range of 30-45, 46-60, 61-75, and 76-90, respectively. The residents’ perception questionnaire included 15 questions to self-evaluate their perception regarding rapport with the patients, their sociocultural details like gender, number of years in hostel, and language of school education and the need for CS workshop. The patient satisfaction questionnaire included 10 questions to be filled by patients.

**Intervention**

A pre-intervention assessment was carried out using all 3 questionnaires. A single session of communication skill workshop was conducted by expert faculty members for a duration of 3 hours. The experts were the medical teachers trained in communication skill by the Medical Education Cell of the state university and Medical Council of India. The topics covered in the workshop were the importance of effective communication with patients; sensitizing the residents to the patient’s expectations and needs; the difference between sympathy, apathy, and empathy. The experts also demonstrated the importance of voice modulation, clear verbal communication and use of effective words. The importance and meaning of non-verbal communication by body gestures and facial expressions were emphasized. The medico-legal significance of appropriate documentation of communication with the patient was discussed. Negotiation skills, leadership qualities, and how good communication with team members improve decision making, was shown.

The experts used various tools during the workshop like video clips, enacting, and games. The workshop also involved interactive discussion and group dynamics with small group activities, that encouraged the residents to voice their reasons for short and ineffective communication with patients.

**Statistical analysis**

Data was entered in the MS Excel sheet of the computer and analyzed using SPSS version 16. Pre-intervention CS score was compared with post-intervention CS score using Wilcoxon signed rank test and \( P \) value of < 0.05 was considered statistically significant. The correlation between the demography variables and change in CS score was derived using Mann–Whitney test and \( P \) value of < 0.05 was considered statistically significant.
Results

In pre-intervention, there was one (7.14%) participant with poor CS score compared to none in post-intervention. No participant scored excellent in the pre-intervention period as opposed to six (42.85%), who scored excellent in the post-intervention period. The behavioral traits that showed statistically significant improvements post-intervention were professionalism, empathy, risk and written consent by Wilcoxon signed rank test, significant $P$ value < 0.05. The traits that still had scope for improvement were listening skills, interpersonal skills, and procedural and negotiation skills [Figure 1].

There was a significant improvement in perception about rapport with patients after CS workshop, though there was no difference in the use of non-technical language. Students’ sociocultural demography suggested that eight (57.14%) were females and six (42.85%) were males. Four (28.57%) of the residents had both parents working while nine (64.28%) had nuclear family. Analysis revealed that eight (57.14%) of the residents had more than 5 years of hostel life [Figure 2]. English was the language of education in seven (50%) residents, while another seven (50%) had a non-English medium of instruction. Mann–Whitney test was applied to the relate demographic variables of gender, the language of education, and hostel residency to change in CS score and a $P$ value of 0.2038, 0.4371, and 0.3946 were

---

Table 1: Resident assessment questionnaire

| S. No | Behavior                                                                 | Done satisfactorily | Needs improvement | Not done |
|-------|--------------------------------------------------------------------------|---------------------|-------------------|----------|
| 1     | Greeted the patient                                                      | 3                   | 2                 | 1        |
| 2     | Introduced self                                                          | 3                   | 2                 | 1        |
| 3     | Explained the purpose of visit                                           | 3                   | 2                 | 1        |
| 4     | Explained his/her role in patient care                                   | 3                   | 2                 | 1        |
| 5     | Encouraged patient to converse                                           | 3                   | 2                 | 1        |
| 6     | Listened to patient completely and patiently                              | 3                   | 2                 | 1        |
| 7     | Answered queries and gave patient assurance                               | 3                   | 2                 | 1        |
| 8     | Used non-medical simple patient language to explain                       | 3                   | 2                 | 1        |
| 9     | Allowed patient to express his/her fears and concerns regarding anesthesia| 3                   | 2                 | 1        |
| 10    | Exhibited empathetic attitude                                             | 3                   | 2                 | 1        |
| 11    | Maintained eye contact                                                   | 3                   | 2                 | 1        |
| 12    | Maintained appropriate posture                                            | 3                   | 2                 | 1        |
| 13    | Used appropriate voice modulation                                         | 3                   | 2                 | 1        |
| 14    | Used facial expressions appropriately                                     | 3                   | 2                 | 1        |
| 15    | Made patient comfortable before examination                               | 3                   | 2                 | 1        |
| 16    | Respected patient’s privacy                                               | 3                   | 2                 | 1        |
| 17    | Spent a minimum of 10 minutes                                             | 3                   | 2                 | 1        |
| 18    | Explained different options of anesthesia techniques applicable           | 3                   | 2                 | 1        |
| 19    | Explained technical details                                               | 3                   | 2                 | 1        |
| 20    | Explained benefits of each option                                         | 3                   | 2                 | 1        |
| 21    | Explained common minor and uncommon major risks and complications of each option | 3 | 2 | 1 |
| 22    | Explained need of starvation                                              | 3                   | 2                 | 1        |
| 23    | Explained need of an intravenous access                                   | 3                   | 2                 | 1        |
| 24    | Explained about postoperative pain management                             | 3                   | 2                 | 1        |
| 25    | Explained about postoperative nausea vomiting                             | 3                   | 2                 | 1        |
| 26    | Explained need of postoperative catheterization, nasogastric tube insertion if possibility exists | 3 | 2 | 1 |
| 27    | Explained need of blood transfusion if possibility exists                 | 3                   | 2                 | 1        |
| 28    | Explained in presence of an adult relative                                | 3                   | 2                 | 1        |
| 29    | Explained anesthesia risk to patient                                      | 3                   | 2                 | 1        |
| 30    | Obtained signatures of patient and relatives                              | 3                   | 2                 | 1        |
derived, respectively. The values did not show a statistical significance.

All the participating residents felt that lack of time and increase in clinical and non-clinical work were important factors responsible for poor CS during preoperative assessment and informed consent process. Although, CS is important for clinical practice, it does not have much weightage for exams. Therefore, residents lacked understanding with regards to the importance of the same. But all the residents felt the need for CS to be included in PG curriculum and that good CS can improve patient satisfaction.

Feedback about the workshop from the residents alluded that CS is important not only for anesthesia practice but also for day-to-day life activities. The roleplay and interactive nature of the workshop were relatable for the residents. The workshop would help them to be good listeners for patients and be honest in explaining the issues related to anesthesia.

About twenty two (78.57%) patients got an explanation for anesthesia technique, but only about nine (32.14%) patients got an explanation for anesthesia risk. Out of twenty eight patients, twenty five (89.28%) patients marked more than good scores in post-intervention period for overall satisfaction.

**Discussion**

Communication skill is one of the core non-technical skills, that is essential for any physician who is in clinical practice. Communication is the exchange of information, ideas, and feelings. It transfers knowledge, institutes rapport, establishes predictable behavior patterns, and maintains attention to the task. The Joint Commission on Accreditation of Healthcare Organizations reviewed the root causes of the sentinel events reported during 2004 to the first quarter of 2012 and found communication errors to be a contributing cause for 51.7% of the anesthesia-related adverse events. The studies that have examined whether communication can improve outcomes for patients, have all broadly produced positive findings.

There is poor awareness about anesthesia and the role of anesthesiologists during the perioperative period among the general population. This is primarily due to the fact that patient approaches surgeon for the disease; while anesthesiologist is required and appointed by the surgeon. Thus, need for anesthesia is incidental from patient view point. Poor awareness could also be because of poor literacy levels among general population. Thus, it becomes duty of an anesthesiologist to educate patients about the anesthesia and the role of anesthesiologist. Making patient understand the various techniques and complications of anesthesia becomes a daunting task for an anesthesiologist as anesthesia is an intervention that is a risk by itself. Further, patients not only function as recipients of medical treatment but are also actively involved in decision making about their own management of the disease. The particular medico-legal vulnerabilities of preoperative evaluation include short-term contact with the patient and variability in the quality and timing of pre-anesthesia evaluation. Thus, preoperative visit and informed consent process become a good opportunity to build a rapport with the patient.

Increase in clinical and non-clinical work during residency affects the clinical performance. With more dependency on the laboratory and radiological investigations, time and efforts to interact with the patients have been shortened. This probably has led to poor communication between doctor and patient. The good communication would otherwise exhibit professionalism, interpersonal skills, negotiation skills, empathy, improved listening capacity, and efforts to deliver medical facts.
Statistically significant improvement after CS workshop intervention was observed in a few areas. In the present study, the percentage of residents progressively improved from poor to an excellent CS score. Thus, there seems to be a drop in the percentage of students exhibiting good CS group as they moved on to the excellent CS score group. The study included a one-time assessment only. For long-lasting efficient outcomes, there may be a need to include it in the post-graduate curriculum and continue assessment for long term retention.

As these skills are neither taught nor assessed seriously for the post-graduate exams, there is a lack of attitude to imbibe and execute them. This was reflected during the assessment of residents’ perception questionnaire in the current study. A survey conducted among the delegates attending an international neuro-anesthesia conference observed that 95% of the participants felt that good verbal communication leads to better patient outcome; 89% had no formal training to improve their CS during graduation or post-graduation program; 82% felt that CS training should be made mandatory in the curriculum.\[11\] The study published by Smith et al. concluded that CS can enhance medical practice, improve patient outcomes and it also suggested that all anesthesiologists should give a thought to their effectiveness in this area.\[12\] The discipline of ‘Anesthesia’ is the preference of choice for many post graduate female students. Our study had eight (57.14%) female residents as participants. Though gender had no statistically significant correlation with improvement in CS score using Mann–Whitney Test, \(P\) value of 0.2038. There was no statistically significant difference in score improvement whether hostelites or non-hostelites, \(P\) value of 0.3946. The medium of instruction whether English or non-English did not have any statistically significant correlation with CS score improvement, \(P\) value of 0.4371.

Patient satisfaction can be considered an important measure of the overall quality of anesthesia care.\[13\] This did not show significant improvement in the present study probably due to the overall impression that good scoring may get patients faster on the operative list—this being a public tertiary care hospital with a long waiting list.

Patient safety in the operating room is greatly affected by human factors, such as team working, leadership, and communication.\[14\] Non-technical skills are considered vital to patient safety, yet remain hard to practice well, even in ideal circumstances. The Anaesthesia Non-Technical Skills (NTS) framework has been validated in developed countries.\[15\]

There is evidence in the literature to prove that technical skills (TS) and NTS are interdependent and essential for patient safety. These skills bring out not only competencies but also excellence.\[16\] CS also enhances decision-making abilities and team dynamics, thereby, improving patient outcomes and satisfaction.\[17\] The Relationship Express model based on the C\(^2\)UBE\(^2\) tool of Kalamazoo Consensus Statement for Essential Elements of Communication in Medical Encounters describes this interdependency.\[18,19\] Task management, team working, situation awareness, and decision making—the whole set of NTS brings out excellence in clinical performance with communication skills at the core.\[20,21\]

Small sample size, single-arm design, one-time intervention, one-time assessment and not having registered the study in Clinical Trial Registry of India are the limitations of this study. The reason for the small sample size was the time constraint as the project was part of the faculty development program of Medical Council of India. Interobserver and intraobserver variability could not be addressed due to the small sample size.

**Conclusion**

Communication skill, is one of the core non technical skills, essential for anesthesia practice. Preoperative visit and informed consent process is an opportunity to educate patients regarding anesthesia issues. The present study observation is that anesthesiology residents’ communication has been inadequate in areas of listening skills, interpersonal skills, procedural and negotiation skills. CS may not be uniformly acquired during clinical training of anesthesiology residents and can be improvised by conducting communication skill workshops using various tools. All residents felt the need to acquire better CS for improving rapport with patients. So, we propose to have formal training of CS and its evaluation to be included in the post-graduate curriculum.

**Financial support and sponsorship**
Nil.

**Conflicts of interest**
There are no conflicts of interest.

**References**

1. Tomoko H, Tadamichi T, Akihito H. Physician’s communication skills with patients and legal liability decided medical malpractice litigation cases in Japan. BMC Fam Pract 2008;9:43.
2. Karen BD, Brian JC, James WF, Peter LH, William MJ, Girish PJ, et al. Manual on professional liability: ASA 2010.
3. Robert B. Communications and emotions-Skills and effort are key. BMJ 2002;325:672.
4. Sidi A. Challenges in learning and assessing anesthesia cognitive and non-technical skills. Austin J Anesth Analg 2014;2:1023.
5. Gail MS, Anthony RA. Analysing and interpreting data from Likert-Type scales. J Grad Med Educ 2013;5:541-2.
6. Kumar M, Dash HH, Rajiv C. Communication skills of anaesthesiologists: An Indian perspective. J Anaesth Clin Pharmacol 2013;29:372-6.
7. Hool A, Smith AF. Communication between anaesthesiologists and patients: How are we doing it now and how can we improve? Curr Opin Anaesthesiol 2009;22:431-5.
8. Mathur SK, Dube SK, Sunil J. Knowledge about anaesthesia and anaesthesiologist amongst general population in India. Indian J Anaesth 2009;53:179-86.
9. Ulrike R, Babette J, Nils E, Thilo B, Joerg S. Residents achieve a high patient satisfaction in Pre-anesthetic patient assessment: An observational study. Open J Anesthesiol 2014;4:263-5.
10. Matthew BW, Jason S. Human factors research in anesthesia patient safety: Techniques to elucidate factors affecting clinical task performance and decision making. J Am Med Inform Assoc 2002;9 (6 Suppl 1):s58-63.
11. Kumar M, Chawla R. Communication skills and anaesthesiologists. Anesth Essays Res 2013;7:145-6.
12. Smith AF, Shelly MP. Communication skills for anaesthesiologists. Can J Anaesth 1999;46:1082-8.
13. Fung D, Cohen MM. Measuring patient satisfaction with anesthesia care: A review of current methodology. Anesth Analg 1998;87:1089-98.
14. Schaefer HG, Helmreich RL, Scheidegger D. Safety in the operating theatre—part 1: Interpersonal relationships and team performance. Curr Anaesth Crit Care 1995;6:48-53.
15. Patricia L, Lauren Z, Christian M, Theogene T, Sara W, Anna M. Non-technical skills of anaesthesia providers in Rwanda: An ethnography. Pan Afr Med J 2014;19:97.
16. Riem N, Boet S, Bould MD, Tavares W, Naik VN. Do technical skills correlate with non-technical skills in crisis resource management: A simulation study. Br J Anaesth 2012;109:723-8.
17. Fletcher GC, McGeorge P, Flin RH, Glavin RJ, Maran NJ. The role of non-technical skills in anaesthesia: A review of current literature. Br J Anaesth 2002;88:418-29.
18. Jeffrey SB, MBA Benjamin B, Brian M, MPH Larrie G, Michael JB. Relationship express: A pilot program to teach anesthesia residents communication skills. J Grad Med Educ 2010;2:600-3.
19. Makoul G. Essential elements of communication in medical encounters: The Kalamazoo consensus statement. Acad Med 2001;76:390-3.
20. James CE. Excellence in anesthesia—the role of nontechnical skill. Anesthesiology 2009;110:201-3.
21. Crossingham GV, Sice PJ, Roberts MJ, Lam WH, Gale TC. Development of workplace-based assessments of non-technical skills in anaesthesia. Anaesthesia 2012;67:158-64.