Educational Issues

Do Technical Skills Correlate With Non-Technical Skills in Crisis Resource Management: A Simulation Study

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Both technical skills (TSS) and nontechnical skills (NTSs) are basic to ensuring patient safety in acute care practice and effective crisis management. Such skills are taught and assessed separately. It was hypothesized that TSSs and NTSs were not independent of each other; the relationship between TSSs and NTSs was evaluated during a simulated intraoperative crisis scenario. The study was a retrospective analysis of performances from a previously published work. With institutional ethics approval, 50 anesthesiology residents managed a simulated crisis scenario of an intraoperative cardiac arrest secondary to a malignant arrhythmia. A modified Delphi approach was used to design a TSS checklist specific to the management of a malignant arrhythmia requiring defibrillation. All scenarios were recorded. Four independent experts evaluated each performance, with 2 experts independently rating the technical performance using the TSSs checklist and 2 other experts independently rating NTSs using the Anesthetists’ Non-Technical Skills score. Technical skills and NTSs markedly correlated. During a simulated 5-minute resuscitation requiring crisis resource management, results indicate that TSSs and NTSs are related. Such research forms the basis for future studies evaluating the nature of this relationship, the influence of NTSs training on the performance of TSSs, and a determination of whether NTSs are generic and transferable between crises that require different TSSs.

COMMENT

This study is very interesting, but the results are not really that surprising. It turns out that when one tests anesthesiology residents in a crisis simulation, those who show the best TSSs (cardiovert properly, give the correct doses of drugs, and so on) also demonstrate the best NTSs (situational awareness, team working, task management, and decision making). The authors speculate that this is true because those who have a greater command of the technical aspects, and perhaps have more experience in crisis situations, have more “bandwidth” in their working memory to pay more attention to the nontechnical elements of the scenario.

The implications of this observation are very interesting. Can we assume that the best way to develop NTSs is to master the technical aspects and then hope that the NTSs can flourish on their own? Or, do we need to pay attention to the acquisition of the NTSs with same level of intensity with which we work on the TSSs? This article does not answer these questions.

Besides, how does one teach the NTSs? To my mind, these are manifestations of experience; one acquires them over time. Although that is undoubtedly true, it seems likely that these skills can be taught and that simulation is an ideal vehicle with which to do this. This would be particularly true if the debriefing and review of the simulation are done by a person who can address these issues along with the technical ones. In fact, simulations that are specifically created to address these NTSs, especially team work, are already part of many simulation programs. This research shows that we still have a lot to learn about how we learn to function in crisis situations.

Comment by Donald M. Mathews, MD

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Distractions and the Anaesthetist: A Qualitative Study of Context and Direction of Distraction

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Distractions are known factors related to errors within the health care system. These incidents occur within the realm of anesthesiologists, but they are relatively understudied compared with the surgical team despite the fact that anesthetists can make mistakes, and their actions are closely connected to outcomes, especially for drug errors. Their workload can have periods of high risk and intensity interspersed with inactivity when the focus is on monitoring rather than intervention. This observational study was undertaken to investigate the quality, context, and direction of distraction involving anesthetists.

Staff participating in the study provided informed consent and were assured of anonymity and nontraceability. One trained observer focused on the anesthetist as the initiator or recipient of distraction and the other focused on the context on which such distractions occurred. The scoring system for the impact of potentially distracting events or interruption was categorized as the Healey levels 1 to 9, with 1 being a potentially distracting source and 9 being operation flow interrupted. The urgency of the distracting event was scored on a 3-point scale: (1) event is truly urgent, (2) event has urgency but does not need to happen at the present moment, and (3) no urgency to the event, that is, social conversation.