

Training on management of ENT emergencies using low-fidelity nasal simulator

Abstract

Nasal Bleeding and Foreign bodies in the nasal cavity are common ENT (Ear, Nose and Throat) emergencies encountered in daily practice. Nasal bleeding (Epistaxis) is a serious health emergency which can lead to catastrophic consequences, if not controlled, especially in elderly patients or in remote localities. Nasal foreign bodies are associated with children and mentally ill people. Mishandling of foreign body may lead to its impaction or (suffocation) as it may be pushed further down and obstruct airway. Training of medical students on proper handling and management of these situations is crucial. The emergency nature of the problem limits training opportunities for the students on real subjects. This low fidelity simulator named (Soso-Noso) was invented to simulate the probable scenarios of nasal bleeding or foreign body in the nose. The simulator was introduced to the undergraduate medical students during their otolaryngology (ENT) internship to test its utility and effectiveness. The students took a pre-intervention test after learning the theoretical background of those conditions and its management. Then they were shown how to handle the simulator and students in small groups worked with it with minimal guidance of the lecturer. The simulator is equipped with a microcontroller and electronic proximity and contact sensors to detect the three different modes of treatment. Post-intervention test was done to measure the level of new acquired knowledge and confidence. Paired comparison of Pre- and Post-test scores (given out of 60) was done and Wilcoxon Signed Ranks test gave a significant difference ($p < 0.001$). The mean scores were increased by 200% after working with Soso-Noso (i.e. from 14.6 to 45.73 with an increase of 31.13 marks scores). Written feedback from the students highlighted on gaining confidence in handling these cases as they become familiarized with different management scenarios using the simulator. Since Soso-Noso simulator is a light weight, low cost and user friendly device, its wider application in the teaching of ENT practices is strongly expected.

