Alexander Klimakov

Botkin Hospital
Russia

Method of effectiveness estimation of simulation trainings on surgical manipulations

Abstract:

Varies surgical manipulations (SM) are the key in surgery. Many of them are difficult skills to develop, because it requires a complex of psychomotor, visuospatial skills under visual and tactile control at the same time. For endo video surgery stereoacuity is also crucial. Lack of confidence in skills and stressors at operations hinder implementing SM in practice. Trainings in simulation are safe for patients and allow developing SM skills by multiple repetitions. SM training programs (SMTP) aim to develop skills up to a sufficient level to transfer them into practice. The result much depends on training methodics. However this aim is not always achieved – for example, laparoscopic intracorporeal suturing (LIS) skill transferring into practice rate ranges from 43,8% to 72,2%. Effectiveness estimation (EE) is needed in order to increase effectiveness of SMTP by analyzing key success factors and tuning the curriculum. EE method should estimate the results achieved by all trainees in practice. Current EE methods evaluate SMTP by results in simulation or in small groups in practice. Performing EE for general set of trainees in practice is not used due to high cost and implementation difficulties. The suggested EE method allows to estimate SMTP in practice for general set of trainees. This consists of several steps of action: defining EE criteria, specific for SM, create questions for each criteria, create a question list, develop a digital form of questionary, conduct a structured interview with attandees using a question list, form digital data base, count the mentioned criteria. The EE method was applied to LIS TP for surgeons who attended it in 2018-2022 (n=52) without previous training. After LIS TP 88,9% started practice it; 84,6% participants expanded range of LO; increased their level of confidence at operations – 84,6%. No complications of LIS were pointed out. EE method also indicated group of surgeons who did not succeed. Further survey is needed to analyze factors, relevant to problem, for tuning the program. The method allows estimate results in practice for general cohort of trainees and can be recommended for implementation in medical simulation training centers.

Biography

Alexander Klimakov has completed general surgery residency at Kemerovo Medical University in 1990; he is deputy chief of Medical Simulation Center and chief researcher at Botkin Hospital, Moscow. He is a member of Moscow postgraduate accreditation commission on surgery. Published in excess of 20 SCI papers and postgraduate surgical training programs. Obtained a number of patent for laparoscopic suturing technic and training methodics. His main research interests are effective methods of surgical manipulation trainings.