

Intern Olympics as a Tool to Reinforce Surgical Skills Acquisition

Acquisition and retention of surgical skills (SS) is a fundamental goal during general surgical training.¹ To lay the groundwork for technical aptitude, the Accreditation Council for Graduate Medical Education mandated initiation of an SS course at the start of residency. Although many programs have established that preclinical sessions provide an opportunity for SS acquisition, maintaining retention remains elusive.² A few programs have started an Intern Olympics (IO) as a motivational and team-building educational event.³ In addition, IO provides an opportunity for objective evaluation of knowledge and SS.⁴ We hypothesized that improved SS could be maintained by encouraging practice for IO.

The incoming class at an academic surgical residency program participated in a mandatory orientation, which incorporated SS instruction, including knot tying. Of the 15 (6 categorical and 9 preliminary) orientation participants, 10 competed in the IO and 5 were excused (work-hour restrictions). Those 10 participants with measurements at all 3 points were included in the data analysis.

Scoring was based on the Southern Illinois University verification of proficiency (VOP) for knot tying, with evaluation before and after instruction.⁵ Improvement of SS was considered when residents demonstrated decreased time to complete the task and increased economy of motion (EOM) as measured on a 5-point scale. After orientation, interns were organized into 3 teams, with second-year residents serving as coaches. Interns trained for 2 months, then competed against each other, using the VOP as scorecards. Each intern tied 10 one-handed and 10 two-handed knots at each evaluation point on a standard board. Two attending physicians, blinded to VOP scoring, evaluated the interns. Wilcoxon rank-sum exact test was used for statistical analysis, and this study was Institutional Review Board approved.

The interns improved at the time of intervention, with shorter time and improved EOM scores when compared to before and after intervention. The IO scores obtained 2 months later demonstrated not only SS retention, but further improvement (which was statistically significant). For both types of knots, there were consistent trends for both EOM scores and times (in seconds) across all 3

evaluation points. One-handed times for the 3 evaluation points were 56.2, 44.4 and 28.3 and EOM scores were 2.1, 3.5 and 3.8. Two-handed times were 69.6, 52.3 and 33.8 and EOM scores were 2.4, 3.2 and 3.5.

A strength of the study includes minimization of observer subjectivity and inconsistency by using the standardized VOP and the same physicians as evaluators at all time points. Other assets include applicability to other programs, ease of implementation, and low cost.

Limitations of this study include the small number of residents and the entire cohort not participating. Those who did not compete in IO could have been reevaluated as a control group. Another limitation involves the attribution of improvement to practice. The participating residents were not queried about their practice habits, or other potential influences, such as operative experience. In addition, reevaluation at another time would affirm whether the improvements at IO persisted.

Directed SS instruction may lead to improved time and EOM in knot tying. Using an incentive such as IO may be an impetus for practice, leading to retention of SS, and allows for another point of formal assessment.

ADENA J. OSBAND, MD

Assistant professor of surgery, Department of Surgery

NELL MALONEY PATEL, MD

Assistant professor of surgery, Department of Surgery

VIKTOR DOMBROVSKIY, MD, PHD, MPH

Assistant professor of surgery, Department of Surgery

STANLEY Z. TROOSKIN, MD

Professor of surgery, Program Director Surgical Residency

All authors are at University of Medicine and Dentistry of New Jersey, Robert Wood Johnson Medical School. The online version of this Letter contains the assessment tool used in this study.

References

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