

Development and Evaluation of a Proficiency-based and Simulation-based Surgical Skills Training for Technical Medicine Students

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The supplementary files corresponding to this manuscript are:

- Supplementary File 1.pdf Text, course overview
- **Supplementary File 2.pdf** **Figure, procedure-specific rating scale for suturing**
- Supplementary File 3.pdf Text, questionnaire in English
- Supplementary File 4.pdf Table, results for technical skills assessment
- Supplementary File 5.pdf Figure, student flow diagram of study
- Supplementary File 6.pdf Figure, grading/skill assessment/time slot (drift analysis)
- Supplementary File 7.pdf Figure, performed skills during rotations (gender analysis)

This supplementary file is listed in bold.

Supplement 2: Procedure-specific rating scale for suturing

	1	2	3	4	5
Suturing technique selection	Student is unable to discriminate between techniques / materials	Can discriminate between suturing techniques but unable of providing a rationale for them	Selects appropriate technique but is unable to provide a rationale for instrument selection	Selects appropriate technique, superficial knowledge of materials	Selects appropriate technique immediately and able to provide a rationale for selected technique
Movement	Frequently makes unnecessary movements		Acceptable efficiency, some unnecessary movements		Economic movements, maximum efficiency
Instrument selection	Student is unable to discriminate between instruments		Selects appropriate instruments, unable to provide an adequate rationale for selection		Selects appropriate instruments immediately and provides a rationale for selected instruments
Instrument use	Repeatedly makes insecure and/or clumsy movements		Skillful use, at times a bit stiff or clumsy		Fluent movements, skillful use
Use of feedback	Ignores feedback		Uses feedback to improve performance		Requires no feedback for performance improvement
Knot tying	Knot is loose, slipping, not enough knots		Unilateral well tied knot		Right knot, right amount and right amount of alternations
Tissue sensitivity	Frequently uses unnecessary force or damages tissue due to inappropriate instrument use		Careful tissue handling, some tissue damage		Consistent, careful handling of tissue without damage
Final result	Final result not achieved	Secondary wound healing	Suture is cosmetically adequate	Suture is functionally adequate	Suture is functionally and cosmetically adequate
Safety	Disregards safety		Adequate attention to personal safety, neglects colleague / patient		Adequate attention to personal safety and safety of others

Supplementary Fig. 1 Procedure-specific rating scale for suturing. Red colored boxes represent critical errors where students fail the assessment immediately