

Reinforcing Skills of the Novice Surgeon through Online Learning, Video Recording, and Self-Assessment

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OVERVIEW

An unprecedented shift continues to limit the amount of hands-on opportunities medical students have to engage, practice, and master technical skills (Drosdek et al, 2013). Unfortunately, due to various barriers, there may be some medical students who complete their third year with significant gaps in technical proficiency. Thus, hands-on opportunities and ample resources must be integrated to allow medical students to actively and confidently practice, develop, and self-assess complex surgical techniques (Wulf et al, 2006).

PROJECT AIMS

1.) Prior to entering the M3 rotations, establish preliminary skills to suture and knot tie during the Transition to Clerkship workshop.

2.) Critically examine students' developing surgical skills captured on a video recording during various M3 rotations.

3.) Determine medical students' perceptions of own suture skills.

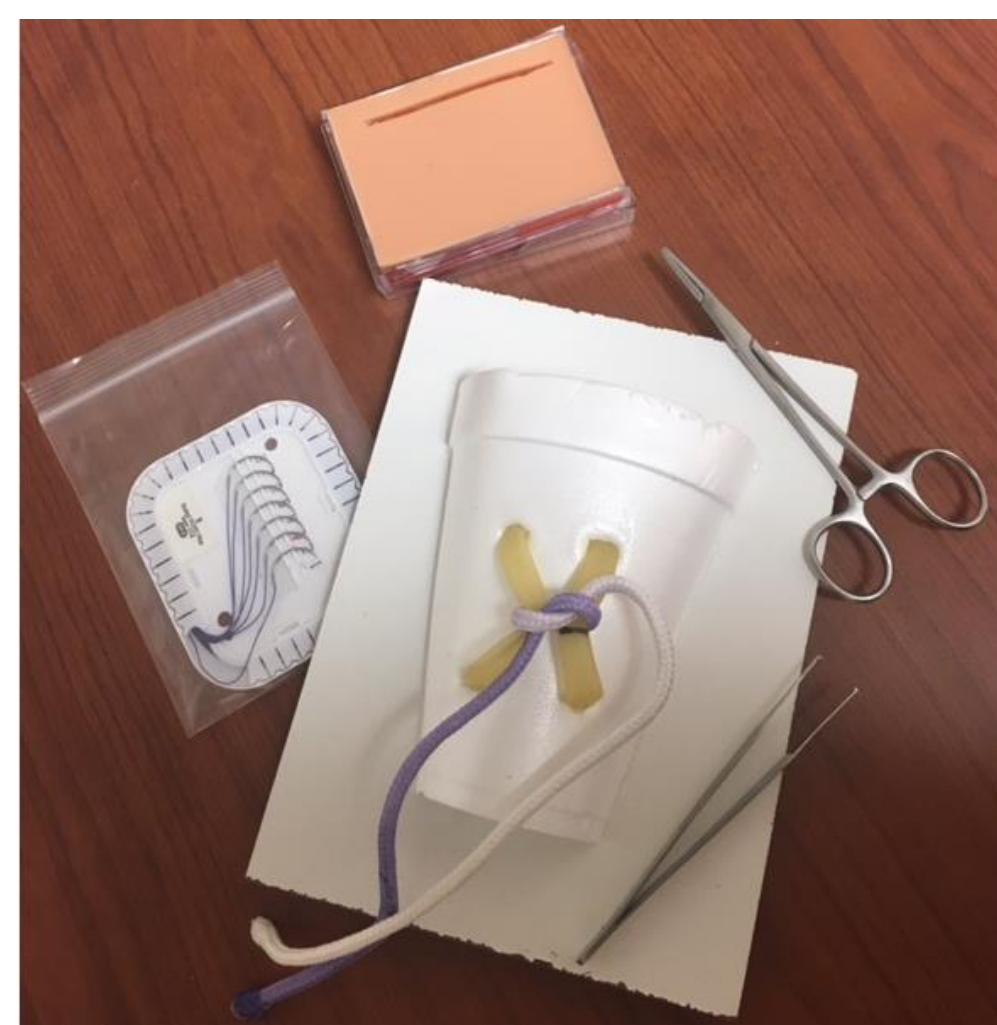
METHODOLOGY

End-of-M2 Suture Skill Survey

- A 10-question survey was sent out to all matriculating M3 students just prior to the Transition to Clerkship (TTC) Workshop in June 2016.
- Survey questions focused on perceived ease with various suture skills, knowledge of suture methods, clinical apprenticeship mentor, dominant hand, and previous suture experience.

Transition to Clerkship (TTC) Workshop (2016)

- All matriculating third-year medical students participated in the TTC Workshop.
- Student dyads were provided a suture and knot tying kit:



- 90 minutes of instruction was facilitated from department-created videos, allowing clinical faculty to individually address questions and assist in the development of skills.
- Students evaluated one another using a rubric on the skills of: instrument handling, simple interrupted suture, square knot, and two-handed technique.

Student Videotaping and Self-Reflection

- Study population was randomized into control group and experimental group. Students self-selected their participation.
- Participating students received access to a password protected D2L site for additional videos, resources, drop boxes, and rubrics.

RESULTS

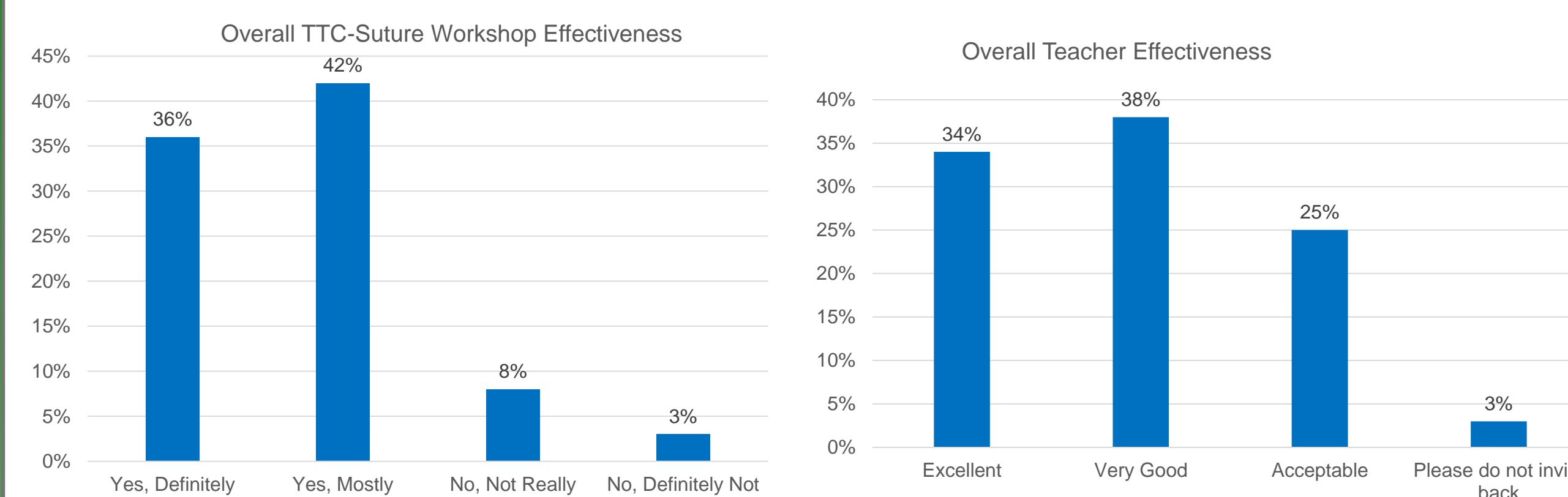
End-of-M2 Suture Skill Survey

- 155 matriculating M3 students completed the Suture Skill pre-survey:

	Very Comfortable	Somewhat Comfortable	Neither Comfortable nor Uncomfortable	Somewhat Uncomfortable	Very Uncomfortable	I am not familiar with this	Total
with your current suture and knot tying skills?	0.65% 1	14.19% 22	11.61% 18	20.00% 31	27.10% 42	26.45% 41	155
loading a needle driver?	3.23% 5	13.55% 21	9.03% 14	15.48% 24	17.42% 27	41.29% 64	155
performing a simple interrupted suture	1.94% 3	16.13% 25	9.68% 15	15.48% 24	23.23% 36	33.55% 52	155
performing a two-handed square knot?	4.52% 7	9.03% 14	9.03% 14	12.90% 20	21.29% 33	43.23% 67	155
performing a running subcuticular suture?	0.00% 0	3.87% 6	6.45% 10	12.26% 19	21.94% 34	55.48% 86	155
performing a simple running suture	1.29% 2	6.45% 10	7.10% 11	12.90% 20	26.45% 41	45.81% 71	155

TTC Workshop

- 198 M3 students completed the Continuous Professional Development Course Evaluation:



Submitted Videos and Reflections

- 30 students enrolled in the project (2016-2017 academic year)
- 5 submitted student videos
- 5 submitted student reflections
- Students have the entire academic year to submit content
- 15 students participated in an online interview

Qualitative Themes at the Conclusion of the Project:

From the self-reflections and student discussions, 3 overarching themes emerged:

- Time was a limiting factor to engage in the supplemental curriculum (competing clerkship obligations).
- Convenience and portability of the suture kit aided in ongoing practice and improved discussion between student and resident.
- Utilizing the kit increased perceived confidence with skills.

Discussion

Upon the conclusion of the TTC Workshop, students remarked that it was helpful to have basic skills scaffolded prior to beginning surgical rotations such as Obstetrics and Gynecology and Surgery. Students enrolled in the study reflected that the suture pads and supplemental videos were helpful for practice and other face-to-face workshops (which were provided by SEMA and Student Surgical Society) were helpful to improve muscle memory. Feelings of doubt were documented when initially learning the advanced suture skills, however with ongoing practice, confidence improved. Gaps continue to be observed in M3 suture skills. This curriculum encourages the potential to reinforce skills without strain on clinical responsibilities or time restrictions.

CONCLUSION

- In the 2017-2018 academic year, third-year students continue to express discomfort with surgical skills
- Suture kits are now "rented" out for 3rd year medical students
- A more concrete surgical skills session should be included in all surgical clerkships
- All third-year students should receive a suture kit to provide ongoing training, regardless of rotation

ACKNOWLEDGEMENTS

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