

*'The Effect of Spaced Teaching on Open Suturing Technique in Novice Learners'*

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**MEDICAL EDUCATION RESEARCH:**

*Background:* Spaced teaching sessions are now being recognized as more efficacious in skill retention. However, few studies have investigated if this translates to teaching open suturing skills.

*Objectives:* To determine if spaced versus blocked educational sessions improve the accuracy and precision of open suture technique during the third year clerkship

*Methods/Design:* All third year medical students participated on the obstetrics and gynecology rotation. 64 students were randomized to one 60 minute session on open suturing technique while 57 students were randomized to three 20 minute sessions. A standardized curriculum was created, and models mimicking the fascial layer were created. Prior to starting the curriculum, students were asked to make a simple running suture down the length of a 10cm incision with suture placement 1cm from each side of the incision and 1cm apart. Following completion of the curriculum, a posttest was performed. Analysis on the posttest was performed to determine accuracy and precision of suture placement.

*Results:* There was no significant difference seen in both accuracy and precision of suture placement between the two curricula ( $p=0.587$ ,  $p=0.398$ ). No significant association was seen between curriculum, prior exposure to general surgery, and rotation placement in the academic year in terms of precision ( $p=0.404$ ,  $p=0.486$ ,  $p=0.643$ ). Similarly, no significant association was seen between curriculum and rotation placement in the academic year in terms of accuracy ( $p=0.560$ ,  $p=0.114$ ). However, a significant improvement in accuracy was noted between students not exposed to the general surgery clerkship prior to participation and those with prior exposure ( $p=0.049$ ).

*Conclusions:* There was no difference in accuracy or precision of suture placement between the two suturing curricula. However, there was a significant difference in accuracy in students without prior exposure to general surgery compared to those with prior exposure. This study was limited by time available to perform each session; longer or additional sessions are likely needed to show significant improvement in skill but were not possible due to the clerkship schedule. Furthermore, these results suggest that a standardized suture curriculum may benefit students prior to engaging in any surgical clerkship. Additional research is needed in these areas.