Development and initial validation of a skills suturing score – Essential Suturing Skills

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INTRODUCTION - To date, there is no unified validated score that correlates with basic suturing abilities. We sought to develop and validate a score (Essential Suturing Skills – ESS), based on suturing tasks in synthetic materials, in order to evaluate basic suturing performance.

METHODS AND PROCEDURES – In the EES testing the applicant performs sutures in a foam model and the performance is evaluated through a novel mathematical equation, which considers the time and skills to perform the suturing. Fourth-year medical students performed the tasks before and after 30hours of training in a suturing skills laboratory. Professors of surgery performed the same tasks and served as control group. In the EES scoring, a lower number means a better performance.



Figure 1 – The model - 15x15cm EES wooden base.



Figure 2- The equipment - a regular suturing kit.

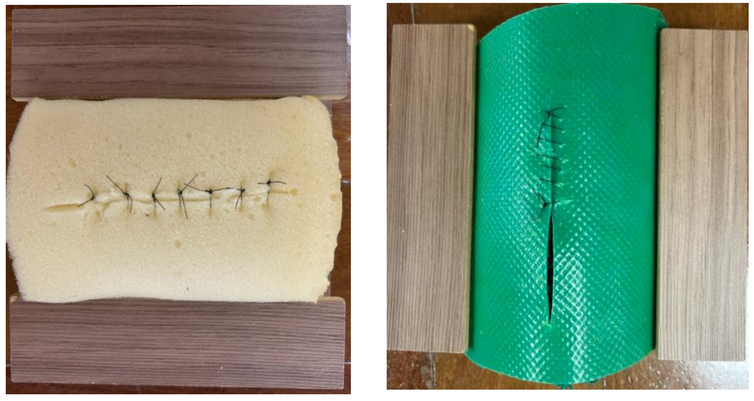


Figure 3 - The tasks – the applicant performs seven interrupted sutures horizontally and seven continuous throws vertically. The foams are of different densities.

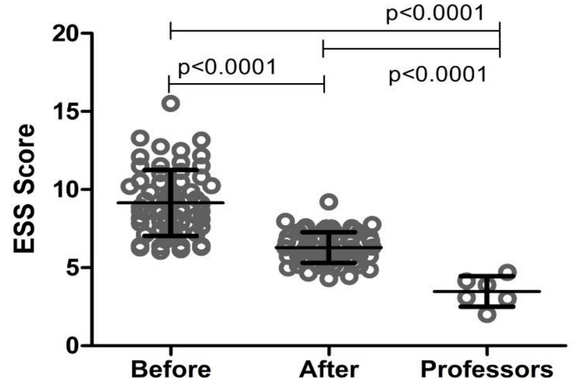


Figure 4– Results- Sixty-two medical students (43 females) and six professors have performed the ESS. The mean ESS score of the professors was 3,48 (±0.96). The students had a 9,15 (±2.10) ESS score before training and a 6,29 (±0.98) after 30 hours of training

CONCLUSION – In this pilot validation study, the ESS score correlated well with suturing performance for medical students, with excellent discrimination validity. It is low cost and simple to perform and evaluate. With further development, it may prove a useful tool in help teaching basic suturing skills for medical students and junior residents.

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