ACS 2022 Surgeons and Engineers: A Dialogue on Surgical Simulation Meeting

Research Abstracts

The Fundamentals of Vaginal Surgery Pilot study: Developing, Validating, and Setting Proficiency Scores for a Vaginal Surgical Skills Simulation System

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Introduction: Currently there is no standardized, widely implemented basic skills program specifically for vaginal surgery. Our aim was to develop a vaginal surgical simulation system; evaluate robust validity evidence for the simulation system and its related performance measures; and establish a proficiency score.

Methods: In this three-phased pilot study, we developed the Fundamentals of Vaginal Surgery (FVS) simulation system - consisting of (1) the FVS Trainer, a task trainer; (2) six validated tasks to be performed on the trainer; and (3) performance measures to determine proficiency. In Phase I, we developed the task trainer and selected surgical tasks by performing a needs assessment and hierarchical task analyses. In Phase II, we conducted a national survey of vaginal surgeons to collect validity evidence relevant to the simulation system. In Phase III, we compared performance of Novice (1st, 2nd year residents) and Experienced (3rd, 4th year residents; fellows; faculty) surgeons. Performance measures were analyzed to set a proficiency score that would discriminate between Novice and expert (faculty) vaginal surgical performance.

Results: The FVS simulation system was developed in Phase I. In Phase II, survey responses of 48 participants (27 faculty surgeons, 6 fellows, and 14 residents) were evaluated. The task trainer and surgical tasks were deemed representative of intended surgical field and supportive of typical surgical actions (mean scores 3.8-4.4 / 5). In Phase III, we analyzed performance from 23 participants (15 (65%) Ob/Gyn residents, 3 (13%) fellows, and 5 (22%) Urogynecology faculty). Experienced surgeons scored significantly higher than Novice surgeons (median 467.5 IQR(402.5-542.5) vs median 261.5 IQR(211.5-351.0), P<.001). A proficiency score threshold at 400 results in 0% (0/6) novices attaining the score, with 100% (5/5) experts exceeding it (Figure 1).

Conclusions: We present validity evidence which supports the use of this novel simulation system for basic vaginal surgical skills. A proficiency score of 400 was established to discriminate between novices and experts.

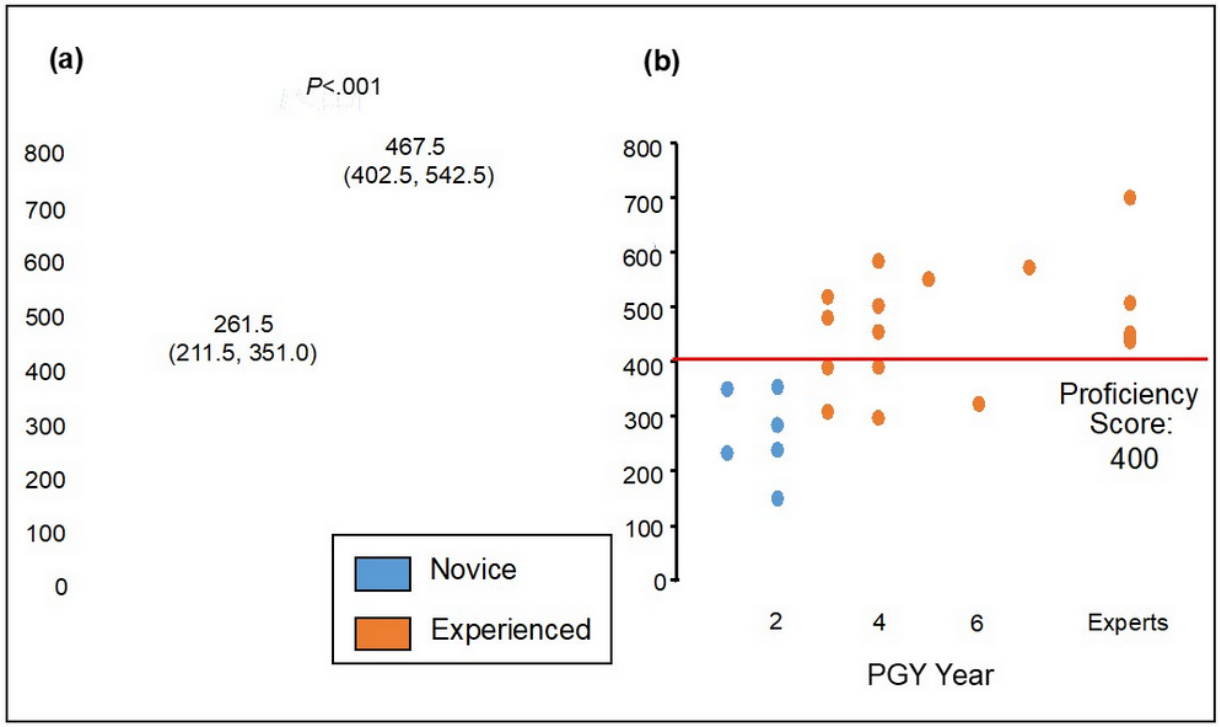

Figure 1. (a) total task performance score between Novice and Experienced groups (b) total task performance scores for each participant. Red line represents the proficiency score. Novice group: post-graduate year (PGY) 1-2. Experienced: PGY 3-7 and faculty.