Simulation-based procedural skills training for advanced practice providers

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Background/Aims

Advanced practice providers (APPs) fill an important role in seeing patients in many settings, particularly in outpatient clinics. Training for basic procedural skills in the outpatient setting is essential for APPs as they may be performing a wide range of procedural tasks. Didactic material in educational courses provides background knowledge, but does not provide the learner with an opportunity to practice and perform the specific skill. Simulation is beneficial for learners by giving them the opportunity to repeat skills for mastery, practice critical thinking skills, and be observed by faculty with opportunities for feedback and debriefing. This study describes a new advanced practice provider (APP)-led course designed to provide fellow APPs with formal training in basic procedural skills.

Interventions

A needs assessment was performed and 13 skills were determined to be essential for APPs to master. Prior to attending, learners were given didactic material to review. During the course, learners divided into instructor-led groups and rotated through stations containing a hands-on simulation opportunity for practice of the skill as well as observation by the instructor with immediate feedback and debriefing.

Fig. 1 Learners at abscess incision and drainage station. Model abscess was created by placing a fluid-filled balloon under the skin of a chicken thigh.
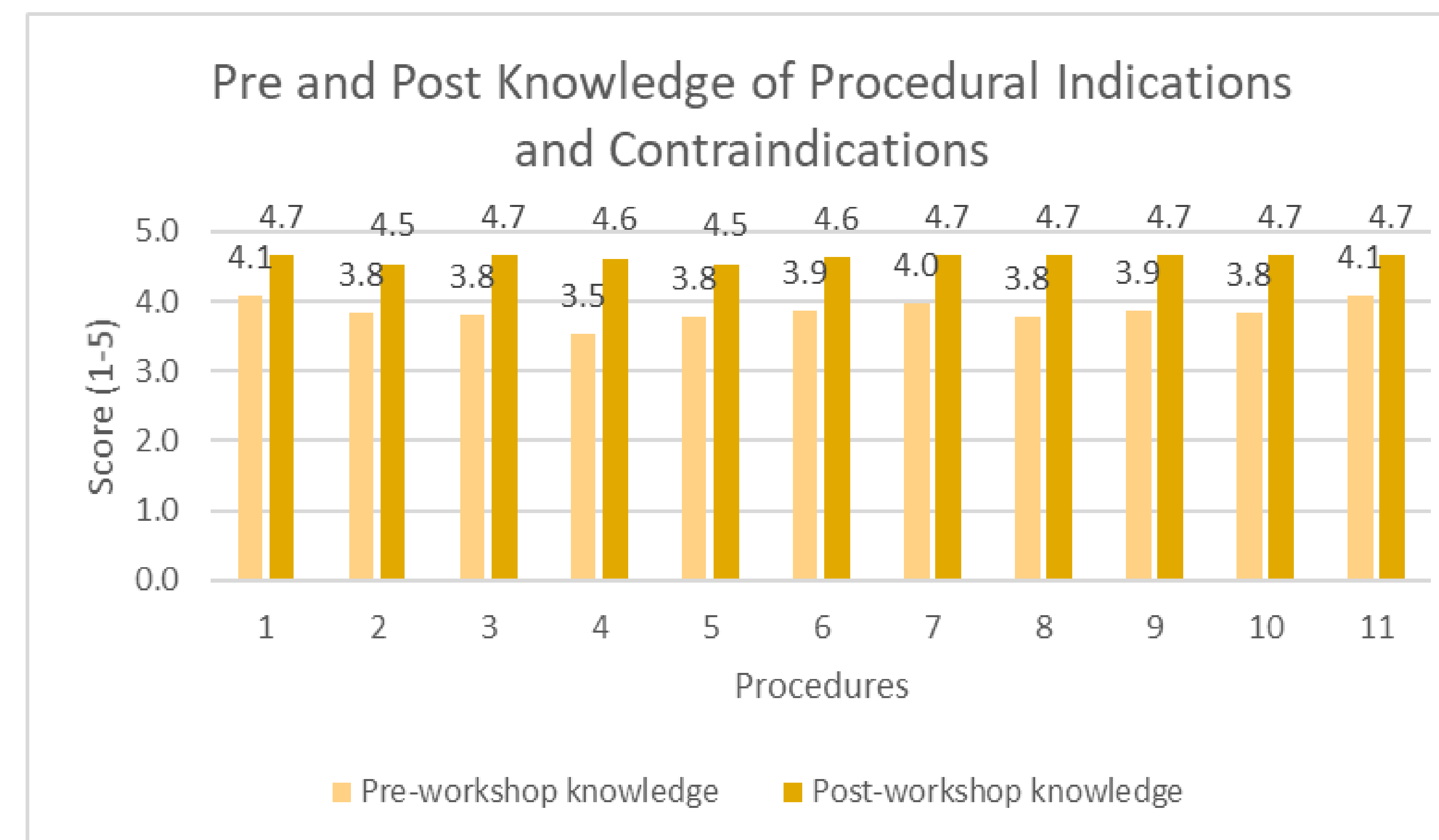
Fig. 2 Pre and post evaluation of knowledge of procedural indications and contra indications with mean score on scale of 1 (Strongly Disagree) to 5 (Strongly Agree) (n=36).
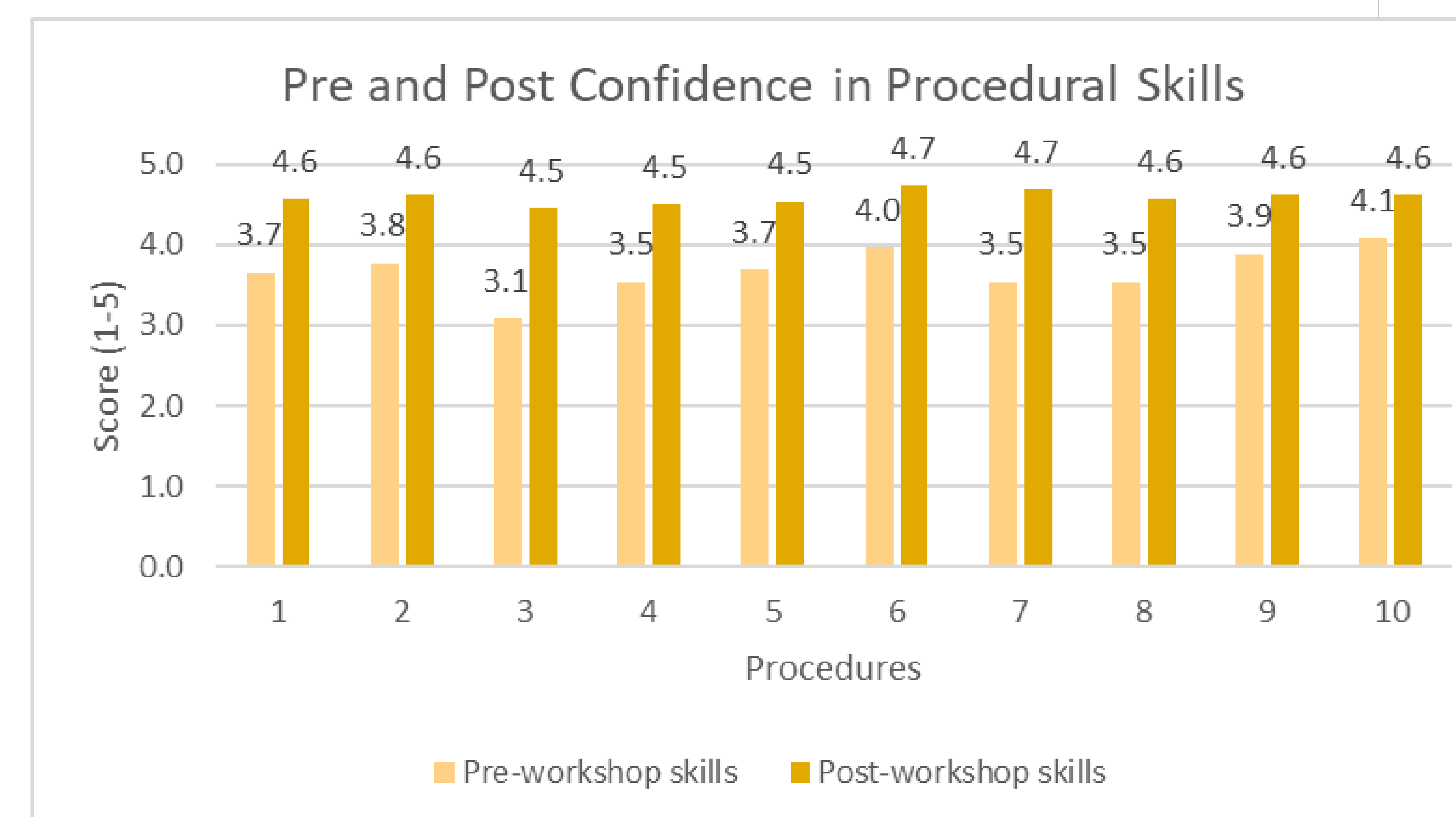

Fig. 3 Pre and post evaluation of confidence of procedural skills with mean score on scale of 1 (Strongly Disagree) to 5 (Strongly Agree) (n=36).

Procedures on Questionnaire	
1. Cerumen impaction removal	7. Application of Dermabond
2. Foreign body removal of skin, ear, nose	8. Staple application and removal
3. Corneal abrasions	9. Abscess incision and drainage
4. Trepanation of subungual hematoma	10. Wound irrigation and debridement
5. Administer local anesthesia/block	11. Vaginal exam and specimen collection
6. Suturing	

Measures and Results

An 11-question pre and post-workshop evaluation was given. Learners recorded each skill they practiced during the course as an observed procedure.

As the data were not were not initially paired, a pairwise comparison could not be performed. Given that the assumptions of normality and independence were uncertain, non-parametric methods were used. The responses for the pre-test evaluation of learner's knowledge of procedural indications and contraindications were pooled and compared to the pooled responses for the post-test evaluation. The responses for the pre-test evaluation of learner's confidence in performing a procedural skill were pooled and compared to the pooled responses for the post-test evaluation. The Kruskal-Wallis Test was used to examine the differences between pre and post workshop data. Workshop participation was shown to be statistically significant (Table 1). Mean pre and post workshop data (n=36) are shown (Fig. 2 and 3).

	χ^2	df	p
Pre and Post Workshop Knowledge	129.6	1	<0.0001
Pre and Post Workshop Skills	138.7	1	<0.0001

Table 1. Kruskal-Wallis Test statistics examining the differences in learners' pre and post workshop Knowledge and Skills (n=36).

Conclusion

Learners demonstrated an increase in knowledge and skill confidence after participating in the course. Future plans include adding additional skills to the course.

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