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Original Research

No Miracles in Two Minutes: A Randomized Controlled Study on the Impact of Preparatory Expansive Posing on Anesthesiology Residents' Performance in Mock Structured Oral Examinations

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Introduction

Embodied cognition theories suggest that adopting certain motor displays may modify affective and behavioral outcomes.[1,2] Experiments have shown that body posture influences self-evaluation, self-esteem, mood, stress, and even rate of speech.[2-4] In their influential study, Carney and colleagues[5] found that participants who posed in a simple 2-minute expansive posture experienced a higher level of testosterone, lower cortisol, and increased feelings of power and tolerance for risk than did those who kept a contractive posture for 2 minutes. Expansive posing has been further shown to increase access to one's own personal power in the form of enhanced cognitive processing while also projecting confidence during stressful situations.[6-8] For example, participants who prepared for a simulated job interview with expansive posture were judged to have performed better on their interview and were more likely to be hired.[8] However, findings from subsequent studies found mixed results, largely supporting the affective effects (eg, felt power) and not the behavioral or hormonal effects.[1,9,10]

Structured oral examinations (SOEs), a component of the American Board of Anesthesiology (ABA) Applied Examination since 1939, assess domains critical to the practice of anesthesiology.[11] Mock structured oral examinations (MSOEs) are a common formative assessment tool that residency programs incorporate into their curricula to prepare trainees for the ABA SOE. However, empirical studies on MSOE curricula and strategies for successful resident performance are scarce.[11,12] The MSOE, as a type of formative and summative assessment, can be a highly stressful activity for residents because the experience simulates a "high-stakes" exam. One of the goals of our research was to evaluate or develop evidence-based tools for residents to use during or prior to SOEs to minimize anxiety and improve performance.

We aimed to contribute to the discussion of expansive posing by conducting a pilot study regarding the impact of engaging in preparatory expansive posing (PEP) on the performance of anesthesiology residents during an MSOE. Our primary hypothesis was that residents who engaged in PEP for 2 minutes prior to an MSOE would score higher than their counterparts who did not engage in PEP. Our secondary hypothesis was that PEP would increase self-assessment of performance and reduce perceived anxiety during an MSOE. The results will inform whether PEP should be taught as an innovative, yet simple, addition to traditional preparation for high-stakes exams and interactions.

Materials and Methods

Participants

A total of 42 clinical anesthesiology (CA) residents at a single institution participated in this prospective randomized controlled pilot study. The study institution incorporates a biannual MSOE as a standard part of the CA years (first, second, third) educational curriculum. As a result, all CA-year residents were eligible to participate in the study. The study received approval from the University of North Carolina institutional review board with the waiver of written consent (Study No. 16-1252).

Procedures

Four residents did not participate due to clinical care conflicts, leading to a total of 38 participants, with 19 participants allocated to each group (ie, allocation ratio = 1:1). Participants were divided into 2 subgroups (Figure 1), each participating in 1 of the 2 MSOE sessions conducted on 2 separate days in the School of Medicine simulation testing center. Upon arrival at the testing center for each session, the participants were assigned by a randomization scheme to 1 of 2 separate MSOE orientation rooms. The randomization scheme was prepared in advance by 1 of the authors (S.M.M.) in a way that each CA-year class had an envelope containing preprinted labels corresponding to either the intervention-group room or control-group room (ie, labels with text stating either "Control" or "Intervention"). The numbers of labels in each envelope corresponded to the class sizes of CA year. Upon a resident's arrival to the testing center, a label was randomly drawn from the envelope corresponding

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to the appropriate CA class. However, the label was not shown to the residents to maintain their blinding to the study's existence and their assigned group. The MSOE administrators were also blinded to the study treatments and did not deliver the exam or evaluate residents' performance. Thus, participants were randomized such that an equal distribution of CA-1, CA-2, and CA-3 residents were included in each study arm.

In the PEP intervention group orientation room, participants stood as a group in a single horizontal line for 2 minutes with their arms and hands in a V shape above their heads and their feet approximately 1 ft apart (finish-line "victory" pose). These participants were told that the testing center was calibrating a new video-recording setup in the orientation room and wished to see whether the camera configurations captured all the possible ranges of motion of humans in the room. In reality, there were no cameras installed in these rooms. However, the other areas of the simulation center, including the exam rooms where the MSOEs took place, did have ceiling-mounted cameras in a variety of locations visible to the participants. Thus, such instructions were a plausible explanation. Conversely, in the control arm, participants sat quietly in chairs for 2 minutes while awaiting instructions and were told that the testing center was calibrating the cameras that would record the session. They were informed that the calibration would take 2 minutes, after which the orientation would begin.

All participants then received the same session orientation and MSOE per the existing curriculum. Faculty examiners gave standardized oral exams as a pair to each participant in the same manner as was done at the ABA; that is, 2 faculty examiners per examinee, mirroring all of the actual procedures for oral board examinations.[13] Faculty examiners were paired with at least 1 faculty member who was either an ABA oral board examiner or had greater than 5 years of experience delivering MSOEs. In addition, the scoring sheets had an instruction face page that explained how to conduct the grading. Faculty examiners and residents were blinded to all aspects of the study. The faculty examiners each completed a standardized rating form that closely mirrored the evaluations used by ABA examiners during the SOE portion of the Applied Examination.[13] At the completion of the MSOE, residents were given a worksheet that contained a checklist to guide their self-assessment of their performance. The self-assessment was completed and collected immediately following their MSOE and prior to the faculty debrief.

The purpose of the study was then disclosed to the residents after the 2-day MSOE sessions by the MSOE administrator. Residents were informed that they had the option to exclude their data from the analysis set. No written consent (opt-in) was requested. The informed consent design was approved by the University of North Carolina institutional review board because it preserved the ability of the residents to choose whether to participate in the study and also explained the deception in treatment instructions and why the deception was needed. No monetary rewards were provided to faculty and residents for participation. See Figure 1 for a summary of the enrollment, allocation, and analysis procedures.

Measures

MSOE Assessment

The examinations used were retired SOE testing materials distributed by the ABA to anesthesiology residency program directors to conduct MSOEs. The examination topics of the 2 MSOE sessions were different, but they both were key topics for oral examinations and of comparable difficulty levels.[13] For each assessment, faculty examiners scored residents' performance on 3 different sections (preoperative evaluation or postoperative management, intraoperative management, and "additional topics") in the attributes of application of knowledge, flexibility and adaptability, judgment, communication, organization, and presentation professionalism. Each module's holistic score was based on a 4-point scale in which 1 = *consistently*, 2 = *frequently*, 3 = *occasionally*, and 4 = *rarely* accurately answered the questions in a manner consistent with the qualities and attributes of a board-certified anesthesiologist. The Holistic Performance score is the sum of the 3 module scores (Module A, Module B, and Additional Topics), with a maximum possible score of 12. When calculating the Holistic Performance score, the scores were reversely coded so that a higher score correlated with better performance. The attributes of application of knowledge, adaptability, judgment, organization, and presentation were all evaluated on a 7-point scale in which 1 = *very weak*, 4 = *neutral*, and 7 = *truly outstanding*. In addition, faculty examiners provided comments on what went well and what could have been improved. Last, the faculty examiners indicated whether they thought the resident should be board-certified on the basis of the performance (as if it were a real exam) on a 4-point scale in which 1 = *definitely* and 4 = *definitely not*.

Separately, residents were asked to self-assess their performance using a worksheet that contained the assessment items for the 3 different MSOE sections. Residents were not asked to rate their own application of knowledge, adaptability, judgment, organization, presentation, or whether they should be board-certified or not, but they were asked to rate themselves on several MSOE experience perception items. These perception items were based on a 7-point scale, with 1 being *strongly disagree* and 7 being *strongly agree*. This self-assessment component was arranged for the purposes of this study only. Our standard MSOE sessions do not require residents to fill out a self-assessment before their debriefing.

Anxiety Score

Each resident's anxiety state was measured by the 6-item version of the Spielberger State-Trait Anxiety Inventory,[14] which was included on the resident self-assessment sheet.

Analysis

Power analysis showed that a sample size of 20 in each group would have 80% power to detect an effect size of $d = 0.91$ using a 2-group t test with a 5% two-sided significant level. The effect size of $d = 0.91$ was used because it was previously reported in one of the most influential PEP studies.[5] The power analysis was conducted using the G*Power software.[15] Chi-square tests were conducted to examine the distribution of gender (ie, female and male), day (ie,

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Day 1 and Day 2), and training year (ie, CA-1, CA-2, and CA-3) by study arm. Intraclass correlation coefficients (ICCs) were estimated to assess the interrater reliability.[16] Absolute-agreement 2-way random effects models were used in which both resident effects and examiner effects were random. On the basis of the interrater reliability results, we used the average faculty scores for residents as the primary outcome measures. Normality of data was assessed both graphically using QQ plots and numerically using Shapiro-Wilk tests. On the basis of the normality assessment results, descriptive statistics (eg, frequency, median, interquartile range) of the sample were summarized in terms of the outcomes. Mann-Whitney *U* and Kruskal-Wallis tests were used to compare the primary outcomes (ie, holistic total score of faculty evaluation for residents) among gender, day, and training year. The Mann-Whitney *U* test was used to compare the measures between the 2 study arms. To evaluate the effect sizes, Hodges-Lehmann estimates of the location shift of the measures between the 2 arms, together with the 95% confidence interval, were calculated. The cutoff of significance was $\alpha = .05$. Data analysis was completed using SAS 9.4 software (SAS Institute).

Results

In terms of the holistic total score of faculty evaluations for residents, there were no significant differences on the basis of gender (median [interquartile range, or IQR]: female = 8.25 [3.50], male = 9.75 [3.00], $P = .44$) or day (median [IQR]: Day 1 = 9.50 [3.50], Day 2 = 9.00 [2.00], $P = .10$). The holistic total score of residents from different CA years differed significantly (median [IQR]: CA-1 = 8.00 [2.50], CA-2 = 9.00 [2.25], CA-3 = 11.00 [1.00], $P = .001$). The two PEP arms were balanced on resident experience on the basis of gender ($P = .10$), training year ($P = .92$), and day ($P = 1.00$). The sample distributions by PEP arm and these variables are summarized in Table 1. The ICC average measures indicated moderate to good interrater reliability (Table 2). Thus, the average scores of the 2 faculty ratings of resident performance were used as the outcome measures.

As summarized in Table 3, Wilcoxon-Mann-Whitney test results suggested no statistically significant difference between the underlying distribution of the 2 groups in terms of any of the measures used, including (1) the holistic total score of faculty evaluation for residents, (2) faculty evaluation on application of knowledge, adaptability, judgment, organization, presentation, and certification decision, (3) resident self-assessment of their own performance, (4) resident self-reported anxiety, and (5) the other perception metrics. The Hodges-Lehmann estimates indicate that we can expect a median of about half a point higher faculty rating and a median of about a point higher self-assessment in terms of the holistic performance score in the control group than in the PEP group. The medians of score difference in application, adaptability, judgment, organization, presentation, and certification decision between the 2 groups are within the range of −0.5 and 0.5. No size or a trivial size of score location shift was observed in resident self-reported anxiety and the other perception metrics.

Discussion

There was no evidence to support the primary hypothesis that residents who engaged in PEP for 2 minutes prior to an MSOE would perform better than their control counterparts. Furthermore, there was no evidence to support our secondary hypotheses that PEP improves self-assessment of one's performance or reduces perceived anxiety during an MSOE.

Although the use of power posing has been studied in many medical fields including anesthesiology, to our knowledge, this is the first randomized control study investigating the use of PEP in anesthesiology resident education.[17,18] One strength of our study design is that we investigated the effects of PEP in conditions closely resembling a high-stakes exam, which is rare and an important contribution to the expansive posing literature.[1] In addition, we purposefully designed our study to follow the points Carney et al[7] highlighted in their 2010 study as opposed to other studies that failed to replicate these significant findings: We (1) concealed the experimental purpose to avoid expectation bias from the participants, (2) involved a performance task right after the postural manipulation, and (3) used postural manipulations that were comfortable, easy, and short in duration. Still, we did not find any significant differences between the 2 study arms with regard to the measures used in this study. Although 4 residents did not participate in the study due to clinical care conflicts, which made our study slightly underpowered on the basis of the priori power analysis and sample calculation, most of the estimated effect sizes obtained in our study are too trivial compared with the large effect size of $d = 0.91$ revealed previously[5,19] and the results are unlikely to be significant even if all eligible residents participated in the study. Thus, our study findings appeared to be consistent with the conclusions that Simmons and Simonsohn[20] and Edlund et al[10] achieved; namely, that the behavioral and physiological effects of expansive posing should be treated as hypotheses lacking in empirical support. Even the affective effects (eg, higher self-evaluation and lower level of anxiety), which are better supported by the PEP literature relative to the behavioral effects, were not revealed in our study.

This study has several limitations. First, as discussed in the previous paragraph, this study is slightly underpowered due to the small attrition of participants for reasons that were not associated with the study group assignment. However, as discussed, even if no attribution happened, we were unlikely to find significant findings due to the large gap in the effect size we identified in our study compared with that reported in the early study from which we found the effect size used for the power analysis. Second, although we found the PEP and control groups were overall balanced in terms of training year and gender, which suggests that the random assignment properly addressed the bias these confounding variables could have on the relationships of interest, the 2 groups may still have had differences in terms of baseline knowledge level (eg, In-Training Examination scores) or other unmeasured covariates (eg, scholarly productivity) given the small sample. A future study could include these covariates in analysis when investigating the effect of PEP. Third, the measures used were all based on 4-point or 7-point Likert-scales, which might not be sensitive enough to discriminate

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varying levels. Fourth, all the participants were clinical residents from a single anesthesiology program, which further limits the generalizability of inference from this study. Replication studies involving larger, more heterogeneous samples are warranted to achieve more liable inferences of the relationship between PEP and MSOE performance and experience perception. A multisite study that involves a larger sample would also enable additional analyses on the impact of PEP including subgroup comparisons (eg, male versus female residents) and different settings (eg, solo versus group intervention). Last, although we followed a standard process to create an authentic SOE experience, it is possible that the MSOE was not high stakes enough to cause the same level of stress as that the ABA SOE induces or as those situations tested in the studies in which expansive posing helped (eg, simulated job interview). However, similar studies at the ABA SOE are not feasible due to ethical and logistical considerations.

Despite the popularity of the expansive posing concept and its appealing simplicity in implementation and integration into instructional design, our study did not identify any evidence that supported PEP's positive effect on anesthesiology residents' MSOE performance and experience in terms of the measures examined. The significance of this study should not be diminished by the null results, though, because our findings contribute to the accumulation of scientific and educational evidence on expansive posing, which might have been subjected to publication bias.[10,20] Such investigation is especially valuable considering that the effect of expansive posing may be context-dependent,[1] and our results serve as a useful source of reference not only for study design and sample calculation planning but also for meta-analysis of PEP in professional education.

To conclude, the findings of the study add to the existing literature on embodied cognition in medical education by showing that PEP neither improved anesthesiology residents' MSOE performance or self-assessment of their performance nor reduced perceived anxiety. A simple 2-minute PEP exercise is likely not a useful technique in improving the performance of residents in structured oral exams. Nonetheless, more research efforts are warranted to identify and investigate techniques that have the potential to improve trainees' performance.

References

1. Elkjaer E, Mikkelsen MB, Michalak J, Mennin DS, O'Toole MS. Expansive and contractive postures and movement: a systematic review and meta-analysis of the effect of motor displays on affective and behavioral responses. *Perspect Psychol Sci.* 2022;17(1):276-304.
2. Awad S, Debatin T, Ziegler A. Embodiment: I sat, I felt, I performed—posture effects on mood and cognitive performance. *Acta Psychol (Amst).* 2021;218:103353.
3. Briñol P, Petty RE, Wagner B. Body posture effects on self-evaluation: a self-validation approach. *Eur J Soc Psychol.* 2009;39(6):1053-64.
4. Körner R, Petersen L-E, Schütz A. Do expansive or contractive body postures affect feelings of self-worth? High power poses impact state self-esteem. *Current Psychology.* 2021;40:4112-24.
5. Carney DR, Cuddy AJ, Yap AJ. Power posing: brief nonverbal displays affect neuroendocrine levels and risk tolerance. *Psychol Sci.* 2010;21(10):1363-68.
6. Cuddy AJC, Schultz SJ, Fosse NE. P-curving a more comprehensive body of research on postural feedback reveals clear evidential value for power-posing effects: reply to Simmons and Simonsohn (2017). *Psychol Sci.* 2018;29(4):656-66.
7. Carney DR, Cuddy AJ, Yap AJ. Review and summary of research on the embodied effects of expansive (vs contractive) nonverbal displays. *Psychol Sci.* 2015;26(5):657-63.
8. Cuddy AJC, Wilmuth CA, Yap AJ, Carney DR. Preparatory power posing affects nonverbal presence and job interview performance. *J Appl Psychol.* 2015;100(4):1286-95.
9. Gronau QF, Erp SV, Heck DW, et al. A Bayesian model-averaged meta-analysis of the power pose effect with informed and default priors: the case of felt power. *Compr Results Soc Psychol.* 2017;2(1):123-38.
10. Edlund JE, Cuccolo K, Irgens MS, Wagge JR, Zlokovich MS. Saving science through replication studies. *Perspect Psychol Sci.* 2022;17(1):216-25.
11. Martinelli SM, Chen F, Isaak RS, et al. Educating anesthesiologists during the coronavirus disease 2019 pandemic and beyond. *Anesth Analg.* 2021;132(3):585-93.
12. Rochlen LR, Woodrum DT, Zisblatt L. American Board of Anesthesiology mock standardized oral examination faculty development workshop. *MedEdPORTAL.* 2021;17:11173.
13. Sun H, Warner DO, Patterson AJ, et al. The American Board of Anesthesiology's standardized oral examination for initial board certification. *Anesth Analg.* 2019;129(5):1394-1400.
14. Marteau TM, Bekker H. The development of a six-item short-form of the state scale of the Spielberger State-Trait Anxiety Inventory (STAI). *Br J Clin Psychol.* 1992;31(3):301-6.
15. Faul F, Erdfelder E, Lang AG, Buchner A. G*Power 3: a flexible statistical power analysis program for the social, behavioral, and biomedical sciences. *Behav Res Methods.* 2007;39(2):175-91.
16. Koo TK, Li MY. A guideline of selecting and reporting intraclass correlation coefficients for reliability research. *J Chiropr Med.* 2016;15(2):155-63.
17. Ge W, Schaefer DS, Basile LM. A randomized controlled trial of power posing on timed Up and Go test. *J Allied Health.* 2020;49(2):125-28.
18. Forkin KT, Dunn LK, Kaperak CJ, et al. Influence of sex and body language on patient perceptions of anesthesiologists. *Anesthesiology.* 2019;130(2):314-21.
19. Fritz CO, Morris PE, Richler JJ. Effect size estimates: current use, calculations, and interpretation. *J Exp Psychol Gen.* 2012;141(1):2-18.
20. Simmons JP, Simonsohn U. Power posing: P-curving the evidence. *Psychol Sci.* 2017;28(5):687-93.

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Abstract

Background: The objective of this study was to evaluate the impact of engaging in preparatory expansive posing on the performance of anesthesiology trainees during a mock structured oral examination.

Methods: A total of 38 clinical residents at a single institution participated in this prospective randomized controlled study. Participants were stratified by clinical anesthesia year and randomly assigned to 1 of 2 orientation rooms to prepare for the examination. The preparatory expansive posing participants stood for 2 minutes with their hands and arms above their heads and with their feet approximately 1 ft apart. Conversely, the control participants sat quietly in a chair for 2 minutes. All participants then received the same orientation and examination. Faculty evaluation of resident performance, residents' self-assessment of performance, and anxiety score were collected.

Results: There was no evidence to support our primary hypothesis that residents who engaged in preparatory expansive posing for 2 minutes prior to a mock structured oral examination would score higher than their control counterparts (P = .68). There was no evidence to support our secondary hypotheses that preparatory expansive posing increases self-assessment of one's performance (P = .31) or reduces perceived anxiety during a mock structured oral examination (P = .85).

Conclusions: Preparatory expansive posing did not improve anesthesiology residents' mock structured oral examination performance or self-assessment of their performance, nor did it reduce their perceived anxiety. Preparatory expansive posing is likely not a useful technique in improving the performance of residents in structured oral examinations.

Keywords: Anesthesiology, expansive posing, graduate medical education, self-assessment, structured oral examination

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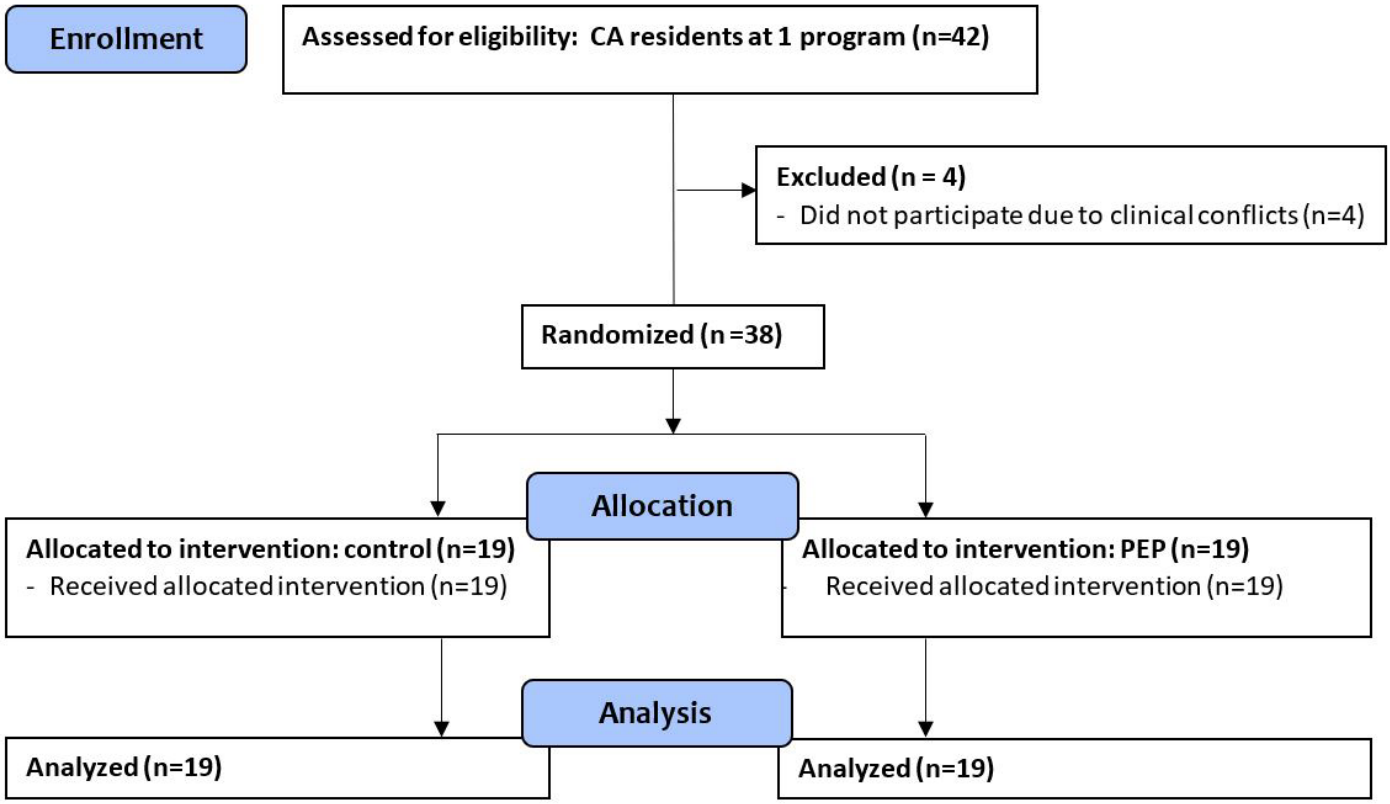
Figure

Figure 1. *Participant enrollment, allocation, and analysis CONSORT flow diagram. Abbreviations: CA, clinical anesthesiology; PEP, preparatory expansive posing.*



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Tables

Table 1. *Sample Distributions by Gender, Training Year, and Day*

Variable	PEP	Control	*P* Value
Entire Sample	19	19	
Gender			.10
Female	11	6	
Male	8	13	
Training Year			.92
CA-1	7	6	
CA-2	7	7	
CA-3	5	6	
Day			1.00
Day 1	13	13	
Day 2	6	6	

Abbreviations: CA, clinical anesthesiology resident (first year, second year, third year); CONSORT, Consolidated Standards of Reporting Trials; PEP, preparatory expansive posing.

Table 2. *Reliability Between 2 Faculty Examiner Ratings*

Measure	ICC(2,2) [95%CI]	Evaluation of Reliability[a]
Module A (holistic)	0.85 [0.69, 0.93]	Good
Module B (holistic)	0.66 [0.30, 0.83]	Moderate
Additional topics (holistic)	0.86 [0.68, 0.94]	Good
Application of knowledge	0.79 [0.58, 0.89]	Good
Adaptability	0.79 [0.59, 0.89]	Good
Judgment	0.73 [0.45, 0.86]	Moderate
Organization	0.82 [0.65, 0.90]	Good
Presentation	0.74 [0.51, 0.87]	Moderate
Certify	0.85 [0.72, 0.92]	Good

Abbreviation: ICC, intraclass correlation coefficient.

[a] Values less than 0.5 are indicative of poor reliability, values between 0.5 and 0.75 indicate moderate reliability, values between 0.75 and 0.9 indicate good reliability, and values greater than 0.90 indicate excellent reliability.[16]

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Table 3. *Comparison of Residents' Mock Oral Performance, Self-Assessment and Anxiety by Group*

Measure	Median (IQR)		N[a]		*P* Value	Shift [95%CL][b]
	Ctrl	PEP	Ctrl	PEP		
Performance Graded by Faculty (average)						
Holistic performance	10.0 (3.0)	9.0 (3.5)	17	17	.68	0.5 [−1.0, 2.0]
Application of knowledge	5.5 (1.0)	5.0 (1.0)	19	19	.23	0.5 [.0, 1.0]
Adaptability	5.5 (1.5)	5.0 (1.0)	19	19	.33	0.5 [−.5, 1.0]
Judgment	5.5 (1.5)	5.0 (1.0)	19	19	.33	0.5 [−.5, 1.0]
Organization	5.5 (1.5)	5.5 (1.5)	19	19	.64	0.5 [−.5, 1.0]
Presentation	5.5 (1.5)	5.5 (1.5)	19	19	.65	0.0 [−1.0, 0.5]
Certification	2.0 (1.5)	2.5 (1.0)	19	19	.14	−0.5 [−1.0, 0]
Resident Self-Assessment						
Holistic performance	7.5 (3.0)	6.0 (3.0)	18	16	.31	1.0 [−1.0, 2.0]
Confident about the accuracy of self-assessment	4.0 (1.0)	5.0 (1.0)	19	19	.98	0.0 [−1.0, 1.0]
The scenarios are difficult content-wise	4.0 (2.0)	4.0 (2.0)	19	19	.62	0.0 [−1.0, 1.0]
Did the best I could have done	5.0 (2.0)	4.0 (2.0)	19	19	.45	0.0 [−1.0, 1.0]
Too nervous to show the best of me	4.0 (2.0)	5.0 (2.0)	19	19	.11	−1.0 [−2.0, .0]
Couldn't remember important things I know	4.0 (1.0)	5.0 (2.0)	19	19	.42	0.0 [−1.0, 1.0]
Anxiety	15.0 (4.0)	16.0 (7.0)	18	19	.85	0.0 [−2.0, 3.0]

Abbreviations: Ctrl, control; IQR = interquartile range; PEP, preparatory expansive posing.

[a] Sample sizes used in evaluating the outcomes varied due to missing values on certain metrics.

[b] Hodges-Lehmann estimation of location shift (control-treatment); 95%CL = 95% confidence limits, which indicates the 95% confidence interval on the score difference (location shift) between the PEP group versus the Ctrl.