

INTRODUCTION

During Anesthesiology training, residents have little opportunity to acquire the skills necessary to supervise other anesthesia providers. Supervision is indeed one of the major responsibilities of faculty anesthesiologists. The term supervision encompasses “all clinical oversight functions directed toward assuring the quality of clinical care whenever the anesthesiologist is not the sole anesthesia care provider” (1). The characteristics of an effective supervisor have been studied in different educational fields. There seems to be agreement on the importance of aspects such as opportunity to perform procedures, direct involvement in patient care and constructive feedback (2-4). Other features identified by trainees as important qualities in a supervisor include the supervisors’ teaching and interpersonal communication skills (5, 6). Regarding psychological traits, an effective supervisor is supportive, flexible, focused, practical, respectful, and is interested in supervision (7, 8). Finally, serving as a role model and providing feedback, have been important aspects identified for effective supervision (9).

In the context of the complexity of interactions between supervisor and trainees in the clinical setting, training for supervisors is necessary (10 - 13), and probably essential in anesthesiology, since residents abruptly transition from being supervised trainees to become supervisor attending anesthesiologists. De Oliveira Filho instrument (15) was used to assess evaluation of individual anesthesiologist’s supervising performance a 9-item instrument, and self-perception were evaluated before and after an educational intervention consisting of seminar and workshops.

METHODS

Administered the 9-item supervision scale by de Oliveira de Filho (Table 1) to junior residents (CA-1) supervised by a senior anesthesia resident (CA-2, CA-3). The encounters took place during clinical cases under the overarching supervision of an attending anesthesiologist. Additionally, self-perception as a supervisor was evaluated in senior residents by an 8-item questionnaire that forms part of a validated instrument to assess learning environment and supervision (16).

After the administration of the aforementioned questionnaires, the senior residents attended the 90-minute seminar.

After the seminar, a second set of supervision encounters with participating junior and senior residents took place.

Finally, junior residents were asked to complete the 9-item quality of supervision questionnaire, and senior residents to complete the self-perception survey.

Overall, thirty-six encounters occurred before the educational intervention and thirty-six encounters after the intervention.

Quality of supervision

The questionnaire evaluating quality of supervision consists of 9 items, each evaluating a single dimension of supervision. Each question is graded in a 4-point Likert scale (never=1, rarely=2, frequently=3 and always=4). The supervision score equals the mean of the scores for each item (1, 14).

Descriptive statistics were used to interpret the responses of the supervisees and supervisors. Means, standard deviations (SDs) and 95% confidence intervals (CIs) were calculated for the perceived supervisory quality. Student’s independent *t*-test was used to identify differences between the responses before and after the intervention. Statistical significance was defined as a *P*-value <0.05

RESULTS

There was a significant difference between the overall means for quality of supervision as perceived by junior residents before and after the educational intervention program (3.11±0.29 vs 3.96±0.17, *p*<0.01). All aspects included in the quality of supervision questionnaire showed significant improvement except for the items regarding “instructor discussed with me prior to starting a procedure” and “instructors are present during critical moments”. Figure 1 shows the improvement in individual aspects of the supervision quality.

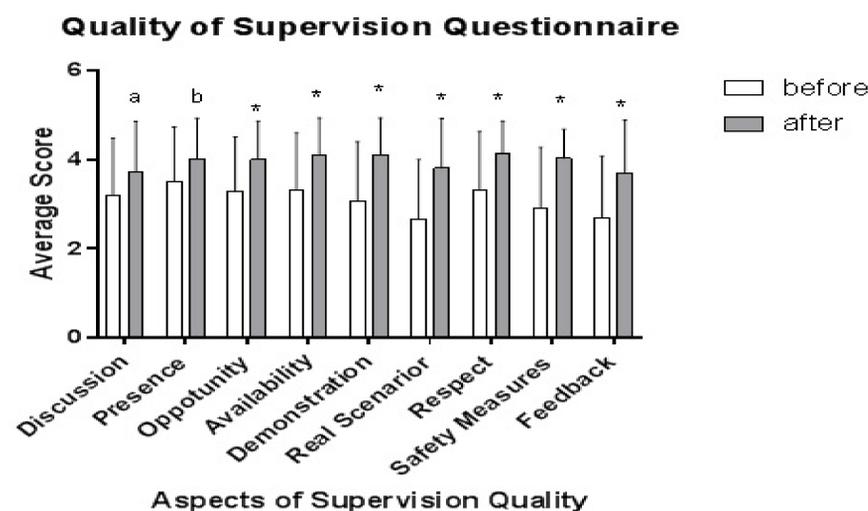


Figure 1. Comparison of different aspects of quality of supervision before and after the educational intervention

There was no significant difference between the overall means for the self-perception of the senior residents before and after the intervention program (3.51±0.54 vs. 3.48±0.20). However, the overall means for the positive aspects (items 1-10) decreased after the program (3.8±0.30 vs. 3.41±0.2, *p*=0.01), and the overall means for the negative aspects (items 11-14) increased after the program (2.80±0.22 vs. 3.64±0.08, *p*=0.01). None of the individual aspects showed any significant changes before and after the program (Figure 2).

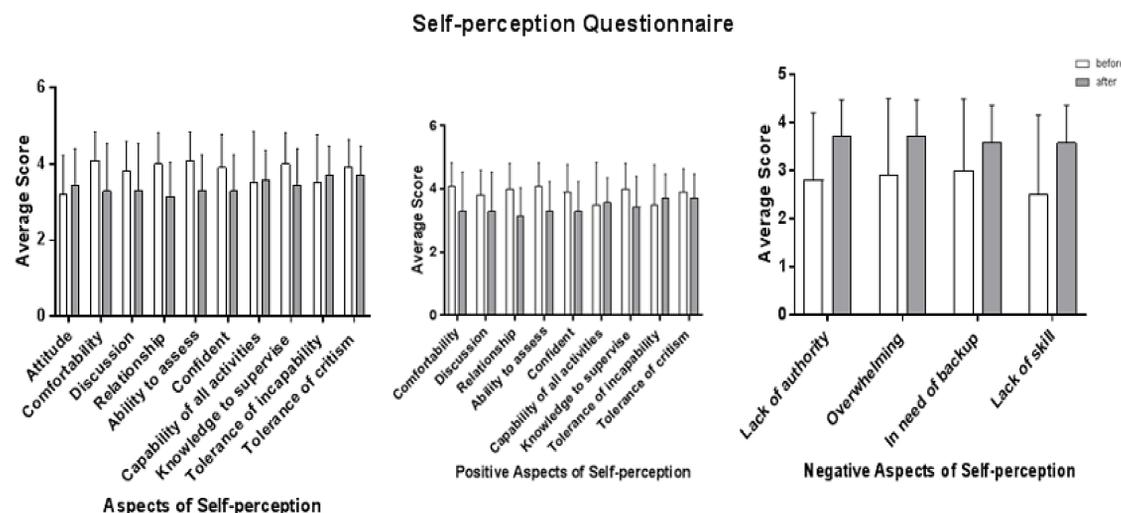


Figure 2. Effect of educational intervention on individual aspects of self-perception as supervisor

CONCLUSIONS

- An education model states that a trainee progresses through a sequence of skill acquisition in four steps: unconscious incompetence, conscious incompetence, conscious competence and unconscious competence (17). Residents are moving in the right direction but need additional interventions and reinforcement to complete the four steps of competence before graduation.
- Perception of own authority, perception of simultaneous supervision as overwhelming, perception of insufficient knowledge to supervise, and perception of need of attending backup, showed worse scores after the intervention. Overall, these findings show that in the process of development of the supervisory competence, the supervisor resident transitioned from a state of unconscious incompetence to one of conscious incompetence, which is reflected in poor self-perception.
- It is possible that educational programs such as the one we used in this study achieve better results if implemented early in training. Delegating responsibility to someone else is a new experience that generates anxiety. Developing the competence to supervise is a process that should start in a controlled safe educational environment such as the period during residency.

CLINICAL IMPLICATIONS

Our study showed the effectiveness of an intervention administered to training anesthesia providers in terms of quality of supervision.

Training of residents in technical skills may not be sufficient when those same residents have to supervise other anesthesia providers after graduation. We expect that this intervention translate into better patient care.

Future research should focus on evaluation of supervision directed towards other groups of anesthesia providers. Follow-up studies should address progression of residents from conscious incompetence to unconscious competence in terms of supervision of anesthesia providers during residency training.

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