A Systematic Review: The Effect of Clinical Supervision on Patient and Residency Education Outcomes

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Tags
Clinical domain
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Teaching and learning
(Post)graduate
(Residency training)

Background
In an era of increasing public accountability by education institutions and attention to patient safety, learner supervision is a hot topic. Graded supervision no longer means “see one, do one, teach one.” While simulation is touted as an intermediate solution to permit learners to gain competence, it can never replace authentic performance. In a previous episode of KeyLIME we discussed the impact of resident participation in bariatric laparoscopic surgery on patient outcomes (KeyLIME Podcast Episode 56 - Krell et al.). Recent ACGME guidelines explicitly define expectations of learner supervision, including senior learner supervision of junior learners. If competency-based education requires work-based assessment as a key element, what is the impact of supervision on patient and learner outcomes?

Purpose
"We performed a systematic review of the literature to describe the effect of clinical supervision on residency patient- and education-related outcomes.”
This is the first systematic review of this topic. Previous narrative reviews and observational studies have suggested that increasing learner supervision improves education and patient outcomes.

**Type of paper**

Systematic review

**Key Points on the Methods**

The authors used an outstanding methodology to identify, select and grade included studies, following the PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) guidelines.

Key elements:
- English language only
- North American studies only
- 1966-2010
- comparison group ("controlled" – pre post, cohort, RCT)
- 1400+ studies identified; 24 included

**Key Outcomes**

**Types of supervision**
- direct; supervisor in presence of trainee/pt (n=6)
- indirect; (n=4)
  - supervisor available on-site as needed
  - supervisor available by phone and able to return on-site as needed
- oversight; post-hoc review of care (n=7)

**Types of specialties**
- Surgery and subspecialties (n=6)
- Psychiatry (n=4)
- Emergency medicine (n=4)
- Internal medicine (n=3)
- Radiology (n=2)
- Obstetrics and Gynecology (n=1)
- Anesthesiology (n=1)
- Pediatrics (n=1)

**Setting**

5/24 focused on ambulatory setting, remainder in-hospital setting (e.g. ward, OR, emergency dept.)

**Study Quality**

- Average MERSQI = 11.8 (out of 18)
- Small sample size
- Single center
- Only 3 studies RCT
Very limited objective measures of supervision

**Effect of Supervision on Patient Outcomes (n=21)**
- “no” effect on mortality
- decrease in intubation complications, OR time, pain
- decrease in diagnostic error (smaller difference in radiology v. emergency medicine because of less objective criteria)
- no effect on resource utilization
- increase in guideline adherence

**Effect of Supervision on Educational Outcomes (n=6)**
- no difference on comfort/anxiety with overnight supervision
- no difference on exam scores
- decrease in scores of work-based assessment

**Key Conclusions**

The authors conclude... “Based on the results of this review, there is not sufficient evidence to definitively support continuous, on-site, attending-level supervision for trainees;” but “Studies demonstrated that enhanced supervision in already-supervised activities resulted in improved patient- or education-related outcomes”

This study effectively summarizes the literature on clinical supervision, identifying a large knowledge gap for (post) graduate medical education. Not surprisingly, supervision improves patient outcomes and may improve the quality of education. However, the literature is not clear on the optimal type of supervision. Moreover, the limited quality of the included studies warrants caution in unanimously endorsing the findings of this review.

**Spare Keys – other take home points for clinician educators**

MERSQI – The medical education research study quality index (By Reed et al. <PMID: 18612715>) is a useful scale to rate the quality of quantitative medical education research. However, it has been criticized (as a universal scale) because it does not include (by design) any qualitative studies, which are an important element of health professions education research.