Observational learning: Strategies to enhance resident skill acquisition

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Disclosures

• I do not have an affiliation (financial or otherwise) with a pharmaceutical, medical device, or communications organization.
Individuals can learn skills from observing others

- Researchers in psychology, sports science, and medical education are interested in how we learn from observing others.
- It is unclear how surgical residents and educators can apply the findings to surgical training.
We conducted a scoping review on observational learning through video

• Our main questions were:
  • How does observation improve skill acquisition in different domains?
  • Which findings can be applied to skill acquisition in surgical training?

• The studies we included:
  • Discussed observational learning through video
  • Studied healthy adults
We included 152 papers, which we grouped under three themes:

1. How observation improves skill acquisition
2. The effectiveness of observation compared to, and in combination with, other methods of learning
3. Factors that influence the effectiveness of observational learning
Observational learning for surgical skills: How does it work?

- Areas of the brain involved in identifying and preparing to perform skills, are also activated when observing someone else perform a skill.

- The more experience an individual has with observing and performing actions, the more easily they learn through observation.
Observational learning for surgical skills: Strategies for residents

• It is best to observe and physically practice skills - pay attention when others are practicing!

• Observation of error-free and imperfect performances (i.e., staff surgeons, fellows, and peers) is helpful

• While practicing skills outside of the operating room, concurrently observe an expert’s performance or your own via video
Observational learning for surgical skills: Strategies for educators

• Remind residents to engage in observation and imagery in the clinical setting

• If videotaping resident performance, encourage residents to request video feedback when they feel they need it
There are various ways to make use of observation for skill acquisition

• Observation of all types of performances (i.e., perfect, imperfect) is helpful for improving performance

• Use video to provide concurrent and delayed visual feedback of residents’ performances
Thank you! Questions?

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Summary of papers

• Types of papers:
  • 122 experiments
  • 18 reviews
  • 12 book chapters
  • 1 thesis

• Measures of skill improvement
  • 111 measured performance
  • 50 measured retention
  • 6 measured performance on a transfer task
Summary of experiments

• Types of skills
  • 41 studied fundamental motor skills
  • 61 studied sport skills
  • 5 studied medical/surgical skills
  • 8 studied musical skills (including dance)

• Participant information
  • 94 experiments studied undergraduate students, 9 studied athletes, and 4 studied health professional trainees (nurses, medical students, residents)
  • The mean age for the participants was 22.8