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Can I handle the scalpel?

Nieboer, Patrick; Cnossen, Fokeltje; Bulstra, Sjoerd; Stevens, Martin ; Jaarsma, Debbie

IMPORTANT NOTE: You are advised to consult the publisher's version (publisher's PDF) if you wish to cite from it. Please check the document version below.

Publication date:
2016

[Link to publication in University of Groningen/UMCG research database](#)

Citation for published version (APA):

Nieboer, P., Cnossen, F., Bulstra, S., Stevens, M., & Jaarsma, D. (2016). *Can I handle the scalpel? Different views on critical subtask assessment between residents and expert surgeons*. Poster session presented at International Meeting for Behavioural Sciences Applied to Surgery and Acute Care Settings, Aberdeen, United Kingdom.

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6) Differences between supervisors and residents in critical tasks assessment of one single surgical procedure.

P. Nieboer, MD, F Cnossen, PhD, Prof. S.K. Bulstra, MD, PhD, M. Stevens, PhD, Prof. D.A.D.C Jaarsma, PhD

Department of orthopaedic surgery, University Medical Centre Groningen, The Netherlands

Institute of Artificial Intelligence and Cognitive Engineering, University of Groningen

Department of medical education, University Medical Centre Groningen, The Netherlands

Background: Success of surgical procedures largely depends on good judgment and decision making and these skills are mostly taught implicitly in the OR. Cognitive task analysis (CTA) has been used successful to elicit tacit expert knowledge to determine the decision points in a medical procedure and then use this in medical skill instructions.

For instructions to be effective, it is also important that they are timed properly, that is, during low mental workload in the resident.

Aim(s): As a start for further research, we therefore asked residents to indicate their mental workload during the steps of an orthopaedic procedure. Because in the OR, residents are commonly guided by supervisors, we also investigated which steps supervisors find mentally demanding.

Methods: A task analysis of a total hip replacement procedure was constructed. Subsequently we asked both 17 orthopedic surgeons (supervisors) and 21 residents to rate (5-point scale) how much mental effort they invest in each subtask. They were asked to explain ratings above average (>3).

Results: Although there were subtasks where supervisors and residents disagreed on the level of attention required, overall, supervisors and residents agreed for most subtasks. High attention was related to subtasks that require decision making skills. However, the reasons were different. In residents, high ratings were associated with subtasks that they found difficult, or where they were anxious about doing it accurately. Supervisors' ratings were more correlated with the evaluation of crucial, i.e., point-of-no-return steps where quality of execution has important consequences for later steps, end result or complications.

Discussion/Conclusion: Supervisors pay more attention to steps that will become important later in the procedure, whereas residents are more anxious about their own performance in crucial steps. It may be useful for supervisors and residents to be aware of this difference in interpretation of "important steps".