

Surgical Education

What supports students' education in the operating room? A focus group study including students' and surgeons' views



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KEYWORDS:

Operating room;
Teaching;
Workplace-based
education;
Surgical teaching

Abstract

BACKGROUND AND METHODS: We conducted a focus group analysis with students and surgeons on factors which influence medical school students' education in the operating room (OR). The interviews were analyzed using grounded theory.

RESULTS: The analysis resulted in 18 detailed and easily applicable themes, which were grouped into the four categories: "Students' preparation and organizational aspects", "Learning objectives", "Educational strategies for the teacher", and "Social-environmental aspects".

CONCLUSION: By including students and surgeons, we were able to extend existing knowledge and enable better understanding of factors influencing teaching in the OR.

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A significant part of surgical education at medical schools takes place in the operating room (OR). This workplace-based education is self-evidently important to eventually apply competence but demanding for learners; they report highest levels of anxiety.^{1,2} In 2003, Lyon published an article stating the significance of the environment as essential for benefiting from participation in the OR: using a multi-measure approach, she established a framework encompassing 3 challenges: the physical environment, the educational task, and the management of social relations.³

Within the last 10 years, teaching in the OR has increasingly become a focus of interest. Many studies have built on Lyon's findings, and a summary of these is provided in the following paragraphs.

Lyon's first domain concerns the management of the demands of the working environment and the emotional impact of surgery as work. There is consensus that students manage this domain well if they are properly introduced to the OR: in a randomized trial, Patel et al⁴ demonstrated the value of an OR introduction curriculum for novices. Del Blanco et al suggested using video games to help the students become accustomed to the OR. The preliminary questionnaire results of her study, which employed a freely available video game, suggest that benefits can be derived from the serious application of such games in medical education.⁵

The authors declare no conflicts of interest.

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Manuscript received December 2, 2014; revised manuscript January 7, 2015

The difficulties students have in determining the learning objectives and the relevance of these objectives (Lyon's second domain) were investigated in a questionnaire study.⁶ Students responding to the questionnaire found "the learning objectives unclear." Stark⁷ studied teaching in clinical settings in general. With a focus group analysis, they detected confusion regarding the focus of these particular teaching episodes.

The role modeling of the surgeon, the team experience, and the feeling of legitimacy exert a great influence on Lyon's third domain. In a following publication, she described that the establishment of trust, legitimacy, and peripheral participation positively influenced this domain.⁸ In 2007, a questionnaire survey including 54 medical students showed that students' learning experiences varied widely depending on how welcome they felt in theatre. They ranked the "friendliness of staff" as the single most important factor contributing to a positive learning atmosphere.⁶ In another questionnaire study surveying 27 variables during 114 teaching episodes, participants ranked the surgical faculties' behavior as a powerful factor in creating a favorable learning environment.⁹ Although tools to measure the quality of the learning environment are being developed,¹⁰ determining factors are not well assessed and possibilities for improving this third domain remain unknown.

In summary, there is an increasing understanding of the challenges of learning in the OR. However, so far, published studies have mainly focused on single domains^{4-6,11,12} and the students' perspective.^{4-6,9,12-15} Studies including the surgeons' perspective are rare.^{3,8,11}

The aim of this study was therefore to investigate factors which influence learning in the OR in its entirety, to elaborate Lyon's findings and supplement her work with practical aspects. To reach a better and more comprehensive understanding, we included both major stakeholders in our analysis: medical school students and surgeons.

Methods

Because there is little available data on the overall perception of teaching in the OR, especially considering the surgeons' point of view, we decided to follow a qualitative approach with interpretivism as research paradigm. Focus groups have become increasingly popular in health professions education research, as they provide a rich understanding of people's lived experiences and perspectives, situated within the context of their particular circumstances and settings.¹⁶ These qualities convinced us that focus groups were the most appropriate method for our study. The study was reported abiding by the recommendations of the standards for reporting qualitative research¹⁷ criteria.

Setting

The study was conducted at the University Hospital of Tuebingen, Germany. The school offers a 6-year medical

curriculum. Surgical education begins in year 2, with a seminar on OR proceedings, scrubbing, and working under sterile conditions. Upon completion of the seminar, students receive an "OR license." A seminar on surgical physical examination takes place in year 3, followed by lectures from all surgical specialties in year 4. Regular small group teaching in the OR is embedded in year 5. The surgical education is completed after a 4-month surgical clerkship in year 6. This clerkship can be performed either at the university hospital of the medical school or associated teaching hospitals. Students may additionally choose electives in surgical disciplines.

Data collection took place between July and September 2013. Students and surgeons were interviewed separately to reduce bias and allow discussion without reservations.

Participants

Students. To enable the students to contribute to the focus group meaningfully, experience in the OR was required. A minimum of 4-week experience in a surgical department (elective or clerkship) was stipulated as an inclusion criterion. The target population consisted of medical students of the University of Tuebingen with such experience. To recruit participants, all medical students from year 3 onwards (of the 2012/2013 university semester) received an e-mail via their course speakers, inviting them to participate. Additionally, students were invited during regular clerkship seminars. The students who expressed their willingness to participate and who met the inclusion criterion were allocated to different focus groups according to timetable preferences.

Surgeons. Teaching coordinators from all operating disciplines were contacted by telephone or e-mail and asked to pass on the invitation to participate in our study within their department. The inclusion criterion was a minimum of 1 year of teaching experience in a surgical department, full qualification as a surgeon was not required, and residents were included into the group of surgeons. Ten physicians replied and were also allocated to 3 focus groups according to time preferences.

No compensation, financial or otherwise, was provided. Students' focus groups were held during their clerkship time, while surgeons' focus groups were conducted after their working hours. Participants were assured that all data would be handled confidentially.

Procedures

Six focus group sessions were held in total, 3 for each group of stakeholders (surgeons and students). The number of participants varied from 3 to 6: students' groups: S1 = 6, S2 = 6, S3 = 5; surgeons' groups: C1 = 3, C2 = 3, C3 = 4. The groups lasted between 80 and 120 minutes. The decision to interview students and surgeons separately was grounded on

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