



Research Paper

Surgical training in Saudi Arabia: Trainees' perspectives and the role of simulation

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ABSTRACT

The surgical training program in the Kingdom of Saudi Arabia (KSA) is still evolving. In order to improve future programs, we conducted a study of trainees' perspectives to explore their views on the value of simulation and the perception of non-technical skills developed during the current training program.

The structural survey was distributed among surgical trainees from all surgical specialties in KSA. Additionally, another survey was conducted regarding the point of view of surgical program directors, educators, senior surgical faculty and medical education leaders.

Results revealed weak aspects in acquiring non-technical skills. Regarding simulation, Saudi trainers and trainees strongly support the use of simulation to remedy these issues. Both groups studied strongly believe that simulation can improve the current training program (trainers: agree 100%; trainees: strongly agree, 89%).

We believe that surgical training in the KSA would benefit from further use of surgical simulation as a powerful addition to classical surgical training. It offers the opportunity to train both complex technical skills and non-technical skills in a safe environment.

Both trainers and trainees agree that it would greatly improve the training that is currently available and there is growing evidence in the literature that simulation improves technical skills and team work with the concomitant improvement in patient safety and outcome.

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1. Introduction

Surgical training in the Kingdom of Saudi Arabia (KSA), which is mainly conducted and overseen by the Saudi Commission for Health Specialties (SCHS), is currently undergoing considerable change. This can be seen through the recent expansion of medical colleges and the increase in the number of under- and post-graduate medical scholarships to North America and Europe that allow students to obtain a different perspective on clinical and medical training [1]. Among medical specialties, surgical training is highly demanding in terms of resources, faculty, and time, to graduate competent, safe surgeons. For better surgical training and in order to provide better education for Saudi medical trainees, we

studied trainees' perspectives to explore their views on the value of simulation and the perception of non-technical skills developed during the current training.

Currently, surgical trainees are not generally satisfied with their training. Al Shanafey et al. asserts, "Seventy-eight percent of the residents felt that current training does not meet their expectations" [2]. Moreover, the majority of trainees had the impression that training abroad was better than training locally and they were particularly dissatisfied with their bedside teaching and operative experience [2]. Khairy's study addressed the same concerns regarding surgical training, namely that more attention should be paid to the improvement of resident technical skills: "Changes are necessary to improve our surgical training program" [3].

Although the studies by Al Shanafey et al. and Khairy are insightful and consider some facets of surgical training; there are other questions regarding key aspects of the program that require further investigation. We have, therefore, undertaken a survey to assess current opinions both from trainers and trainees in the KSA

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regarding their perceptions of simulation use and surgical training including acquiring non-technical skills (teamwork, communication, leadership), and suggest solutions that would improve the current training.

2. Methods

2.1. Trainees

We designed a 34-question anonymized survey to evaluate the satisfaction of trainees regarding surgical training, educational environment, human factors, teamwork, leadership, transferring of technical and non-technical skills from trainers, and simulation. A 5-point Likert response scale was used (strongly disagree, disagree, neither disagree nor agree, agree, strongly agree) [4]. The survey was designed in collaboration with Oxford Simulation, Teaching and Research (OxSTaR). This study was approved by the ethical committee at the College of Medicine of Alfaisal University in Riyadh, as it was a multicenter cross-sectional study conducted in the KSA. Participation in the study was voluntary and the survey was conducted in the English language.

An online questionnaire provided by SurveyMonkey Inc. (Palo Alto, CA, USA) was sent to surgical trainees (residents and fellows) in the KSA to obtain a nationally and regionally representative sample. A total of 450 trainees were contacted via e-mail from a list obtained from the SCHS, which included trainees in major surgical subspecialties (general surgery, urology, plastic surgery, otolaryngology, and orthopedic surgery). The survey was carried out between June 21, 2014 and August 25, 2014.

The organization of the questionnaire covered the following domains:

- (1) training organization,
- (2) training quality (including technical and non-technical skills),
- (3) simulation,
- (4) personal information (the questionnaire was anonymized, data were gathered regarding stage of training etc.).

A 5-point scale was used for scoring purposes. The section about simulation included questions to evaluate opinions and perceptions of the value of simulation in surgical training. The final part of the survey included questions about demographics and personal information.

A preliminary study with the survey was designed with 36 questions and performed with 15 Saudi surgical trainees who were working in Saudi hospitals. The design and structure of the questionnaire were revised based on feedback and observations of the questionnaire process. After modification, 34 questions were included and two questions were taken off to avoid confusion and repetition.

2.2. Trainers

The purpose of the trainers' survey was to determine their views about the status of surgical training nationally and determine program strengths, weaknesses, and areas in need of improvement. A group of Saudi surgical training leaders were invited to participate in a 43-question survey to evaluate their viewpoints and perspectives about Saudi surgical training programs including organization, quality, transferring of surgical technical and non-technical skills to trainees, human factors, teamwork, and satisfaction with the quality of the training program. The selection criteria for participants of this group required the following: fifteen or more years of experience as a senior surgeon (Consultant); a senior leadership position in surgical departments or academic institutions (including medical school deans, surgery training program

directors, and heads of surgical departments); current involvement in Saudi surgical training programs. The trainer survey was distributed in the same way as the trainee survey between June 21, 2014 and August 25, 2014.

3. Statistical analysis

3.1. Results

3.1.1. Trainees

Of the surveys sent, 71 responses were returned. Most respondents were male (74%) and aged 25 to 34 years (81%). Most respondents were from the capital city Riyadh (Fig. 1).

Most participants replied that they believed that the local surgical training program needed improvement (agree, 24%; strongly agree, 68%) and that they would prefer an internationally accredited training program over the local training program.

There was variation of trainee responses to the questions about the contribution of the attending surgery consultants in training and allocating adequate time for feedback and discussion (strongly disagree, 8%; disagree, 24%; neither disagree nor agree, 33%; agree, 29%; strongly agree 6%) (strongly disagree, 14%; disagree, 29%; neither disagree nor agree, 21%; agree, 31%; strongly agree, 5%).

Forty-seven percent (47%) of trainees replied that the surgical training curriculum did not focus on communication skills with patients and colleagues such as anesthesiologists and nurses.

Forty-two percent (42%) of trainees had more negative responses about the statement that the quality of organization of their current training department was good (disagree 37%; strongly disagree, 5%).

3.1.2. Trainers

There were 11 senior surgical trainers who participated in this survey, including medical school deans, training program supervisors, and heads of surgical departments. 10 trainers (90%) returned completed questionnaires. Most trainer respondents were aged 35 to 44 years (60%), all were male, and 80% were working full-time at university hospitals, indicating a strong motivation to explore training challenges.

Most trainers replied that they believed that they participated directly and contributed to training of trainees with necessary guidance and observation (agree, 45%; strongly agree, 54%). The majority of trainers (81%) believed that their departments were well organized. All participants replied that providing good training was part of their department's main objective (agree, 55%; strongly agree,

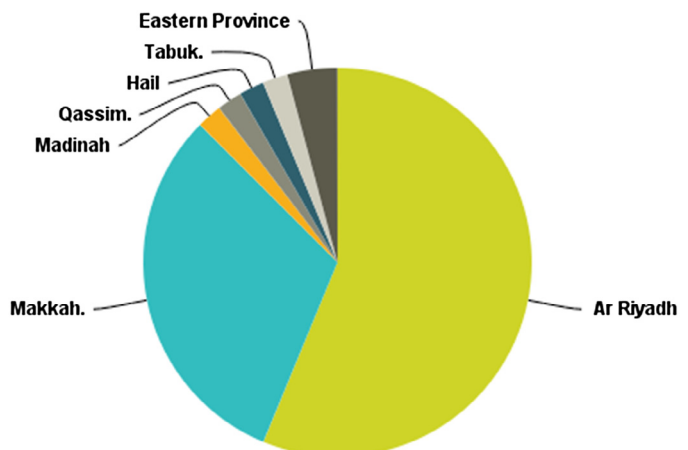


Fig. 1. Geographic distribution of trainee respondents. The majority of respondents (56%) were from Ar Riyadh Province.

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