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Research Paper

Resident satisfaction regarding surgical training programme in Eastern Saudi Arabia: A cross-sectional study

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ABSTRACT

Background: The satisfaction of surgical residents with their training programs is a key indicator for program effectiveness. This survey was conducted to assess the level of perceived satisfaction of surgical residents with the current training programs in Eastern Saudi Arabia.

Materials and methods: Resident satisfaction was measured by questionnaire in 119 selected participants at 9 training centers in Eastern Saudi Arabia, as part of the general surgery residency program of Saudi Commission for Health Specialties.

Results: The survey response rate was 69.7% (83/119) resident participants. A total of 37 (44.6%) residents expressed dissatisfaction with their current training programs. The residents were least satisfied with research opportunities (78.3%), followed by faculty didactic involvement (59%), mentorship (51.8%), and case volume (41%) offered in their programs.

Conclusion: The general low level of satisfaction among surgical residents in Eastern Saudi Arabia warrants a national review of the current programs. Resident satisfaction should be considered as a potent factor while conferring accreditation to surgical training programs across the country.

1. Introduction

Resident satisfaction is a key measure for assessing the effectiveness of surgical training programs [1]. Soliciting a residents' input is important in promoting learner well-being [2]. There is worldwide recognition of the vital role of residency programs in preparing physicians for high quality and safe patient care [3]. Residency programs provide trainees with multiple learning opportunities to enhance their skills in various fields. These include morning reports [4], web-based modules [5,6], self-directed learning [5,7], morbidity and mortality conferences [8], and classic on-the-job Halstedian education [9]. Continuing medical education (CME) programs hardly ever enhance patient outcomes, nor alter clinical practice [10–17]. Residents in training directly contributes to patients' experiences in academic institutions and thus exert a great influence on patients' satisfaction.

Resident satisfaction has been adopted in medical education as an important metric of evaluating residency curriculum [18,19]. Mostafaei and Hajebrahimi [20] identified a need for continuous assessment of residents' competence using established measures. One such metric is the perceived satisfaction of residents with their training programs, which is also taken as a key predictor for the clinical quality of future healthcare [18]. An ideal resident program would provide trainees with specifically tailored training and the required experience [21].

Medical residency training is designed to equip residents with the required skills not only to improve patient outcomes, but also to enhance job satisfaction. Since achieving job goals adds to job satisfaction, the design of training programs should focus on goal obtaining rather than the process itself. In this study, the researchers examined the satisfaction level of surgical residents as a measure of the quality of the current surgical programs across nine.

List of abbreviations: CME, continuing medical education; SCFHS, Saudi commission for health specialties; IRB, institutional review board; SPSS, statistical package for social science; EI, emotional intelligence.

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Training centers. By identifying the need for improvement in surgical training in the studied region, the study may also inspire further research assessing resident satisfaction in other regions of Saudi Arabia [1,22] and toward establishing a national standardized assessment system for surgical programs.

2. Materials and methods

The Saudi Commission for Health Specialties (SCFHS) is responsible for the oversight of surgery residency programs in Saudi Arabia. Nine SCFHS-accredited training centers in the Eastern Region were included in the survey. Questionnaires were manually distributed among 119 residents (identified by SCFHS) in the inpatient wards of the target centers. Rotating residents from other specialties were excluded from the study. The questionnaire was assessed using Cronbach's alpha, which showed a coefficient of global reliability of 0.79.

The variables collected by the 24-question survey include demographic characteristics, resident satisfaction, and perceived challenges. Resident satisfaction was assessed using a five-point Likert scale (1 “not satisfied,” 5 “very satisfied”) and covered didactics, case volume, mentorship, and research opportunities provided by the current program. The satisfaction reports were sorted into two subgroups: The first included very dissatisfied (1 point) and somewhat dissatisfied (2 points) as the “dissatisfaction” group; and the second included somewhat satisfied (4 points) and very satisfied (5 points) as the “satisfaction” group, while the neutral answers (3 points) were excluded from the statistical analysis.

The collected data was analyzed using the SPSS version 24 statistical package. Descriptive data was used in frequency tables for each question in the survey. Resident demographics were collected to describe the cohort and included age, gender, future subspecialty, and marital status. A chi-squares test or Fisher Exact test were used for statistical comparisons, along with association between resident satisfaction and call frequency and psychiatric treatment.

3. Results

Out of the 119 questionnaires distributed, 83 residents responded, resulting in a response rate of 69.7% (see Table 1).

While 77 (92.8%) of the respondents had plans of pursuing a fellowship after completing their residency, 4 (4.8%) left the question unanswered, and 2 (2.4%) did not have such plans. Out of the 83 respondents, 14 (16.9%) had applied for overseas residency programs, including 4 (4.8%) in Europe, 4 (4.8%) in the U.S., 3 (3.6%) in Canada, and 1 (1.2%) in some other country.

With regard to perceived challenges, 25 (30.5%) respondents reported transportation difficulties traveling to the training centers. Moreover, 57 (70.4%) respondents believed that their training programs had a negative impact on their social lives, the most affected aspects including time spent with family members, marriage, and friendship. Furthermore, while 25 (30.1%) respondents had never suffered from any psychiatric illness, the rest 58 (69.9%) had suffered from one or more of the following conditions: depression, anxiety disorders, and sleep deprivation. Notably, 28 (33.7%) respondents had experiences of sleep disorders. However, only 4 (5.3%) respondents had visited a psychiatrist or specialist for medication. Finally, 17 (20.5%) respondents had considered changing their specialty programs due to site-specific training difficulties.

Resident satisfaction reports showed that 14 (16.9%) respondents were very dissatisfied with the current program, while only 2 (2.4%) respondents were fully content with their training. Specifically, 18 (21.7%) respondents gave a 1 point for didactic satisfaction, while 2 (2.4%) gave a 5-point answer; 10 (12%) respondents found case volume utterly disappointing, as compared to 2 (2.4%) who reported the opposite. In a closer look at the residents' call frequencies, it was noted that the majority (90.4%) handled 4–7 calls per month, and 6 (7.2%) residents handled up to 8–10 calls per month. More dissatisfaction was oriented at mentorship of the program, which completely disappointed 25 (30.1%) respondents, winning favor from only 3 (3.6%) respondents. Worse still, 44 (53%) respondents found the program severely lacking in providing research opportunities, and only 1 (1.2%) respondent expressed approval.

All the fifth-year residents expressed confidence in practicing general surgery independently the following year. Among the 10 procedures suggested, namely, laparoscopic cholecystectomy, open cholecystectomy, open colectomy, low anterior resection, trauma laparotomy, open splenectomy, laparoscopic splenectomy, thyroidectomy, axillary dissection, and stoma creation, trauma laparotomy was the only specialty with shared procedural confidence.

No statistically significant association was found between overall resident satisfaction and any demographic characteristic. These include gender ($p = .397$), marital status ($p = .955$), Saudi citizenship ($p = 1.000$), graduation from a Saudi medical school ($p = .681$), and year of residency ($p = .406$). Other variables including post-residency fellowship plans ($p = .220$), place of applied residency ($p = .199$), perceived influence on social lives ($p = .459$), psychiatric treatment ($p = .510$), and consideration about program changes due to site-specific training difficulties ($p = .078$) were also not associated with overall satisfaction.

However, didactic satisfaction was significantly associated with post-residency fellowship plans ($p = .025$). Call frequency ($p = .052$) and psychiatric treatment ($p = .054$) were also related to resident satisfaction at a 0.1 level of significance.

4. Discussion

The overall results suggest that residents are largely dissatisfied with the residency programs and their dissatisfaction tends to grow as they progress in their training. Nevertheless, this dissatisfaction presents an opportunity for improving the current system. With the source identified, the focus can be placed on entry-level residents who are likely to experience difficulty adjusting to a new environment and dealing with increasingly challenging curricula during the first two years. Additional assistance in the form of learning resources, instructional scaffolding, etc., for these vulnerable trainees might reverse this trend and reduce dissatisfaction among first-year residents. This yields significant implications for educators as dissatisfaction is correlated with student dropout rates. Ultimately, this intervention would help achieve the institutional goals of increasing resident retention and graduation rates.

The low resident satisfaction revealed in this study is consistent with the results of similar satisfaction surveys [1,23] which showed that the majority of Saudi surgical trainees were not satisfied with their training programs. Collectively, these results indicate that surgical residents are mostly dissatisfied with the current training programs in Saudi Arabia. The existence of these weaknesses in the existing programs may motivate the supervisory body to take effective measures to strengthen the monitoring system.

These worrisome findings also reveal a pressing need for a thorough assessment of the current surgical training programs, taking into consideration neglected aspects such as trainees' emotional needs. Previous studies have shown that meeting trainees' emotional needs is essential to promoting resident satisfaction. However, Alosaimi et al., found that most of the residency training programs in Saudi Arabia failed to cater to these needs [24]. Consequently, residents who suffer from emotional stress may experience difficulty in learning the required skills to perform in a real surgical ward. Some of the most common stressors include

Table 1
Survey participant demographics.

Question asked	Answer choice options	Answer choice frequency
Gender	Male	60.2% (50 of 83)
	Female	39.8% (33 of 83)
Marital status	Single	47% (39 of 83)
	Married	51.8% (43 of 83)
	Separated	1.2% (1 of 83)
Citizenship	Yes	97.6% (81 of 83)
	No	2.4% (2 of 83)
Age	≤30 years	90.4% (75 of 83)
	≥31 years	9.6% (8 of 83)
Saudi medical school graduate	Yes	89.2% (74 of 83)
	No	10.8% (9 of 83)
Year of residency	First-year	31.3% (26 of 83)
	Second-year	18.1 (15 of 83)
	Third-year	20.5% (17 f 83)
	Fourth-year	19.3% (16 of 83)
	Fifth-year	10.8% (9 of 83)
Applied for residency outside Saudi Arabia	Yes	16.9% (14 of 83)
	No	83.1% (69 of 83)
Planning to do fellowship	Yes	92.8% (77 of 83)
	No	2.4% (2 of 83)
	Unanswered	4.8% (4 of 83)
Subspecialty (fellowship)	Breast surgery	9.6% (8 of 83)
	Breast and Endocrine	7.2% (6 of 83)
	Colorectal surgery	15.6% (13 of 83)
	Endocrine surgery	3.6% (3 of 83)
	Head and Neck surgery	1.2% (1 of 83)
	Otorhinolaryngology	1.2% (1 of 83)
	Critical care	1.2% (1 of 83)
	Hepatobiliary surgery	4.8% (4 of 83)
	Laparoscopic surgery	2.4% (2 of 83)
	Minimal invasive sur.	1.2% (1 of 83)
	Oncology surgery	2.4% (2 of 83)
	Pediatric surgery	7.2% (6 of 83)
	Thoracic surgery	7.2% (6 of 83)
	Plastic surgery	6.0% (5 of 83)
	Trauma surgery	7.2% (6 of 83)
	Upper GI surgery	3.6% (3 of 83)
	Vascular surgery	8.4% (7 of 83)
	General surgery	3.6% (3 of 83)
	Still thinking	2.4% (2 of 83)
	Unanswered	3.6% (3 of 83)

homesickness, academic, and work-related stressors [25]. The high level of perceived stress reported in this study implies that residents in Saudi Arabia are at a relatively higher risk for emotional stress as compared to their international counterparts. Sameer et al., report similar findings in their study [26]. To remedy this situation, trainers need to find effective ways to reduce the impact of these stressors to help residents stay mentally healthy in order to get the most out of their training.

Further research is needed to investigate whether Saudi resident trainees handle more cases compared to non-Saudi residents with regard to satisfaction concerning operative experiences. A study on the effectiveness of U.S. surgery programs established that nearly 61% of the graduates had limited technical skills, which had reduced their chances of becoming competent surgeons in their fields [27]. On this note, a number of surgical institutions are seeking ways to enhance students' technical skills to ensure that they acquire the needed competencies to succeed in future careers [28]. One effective way to achieve this is through technology-enhanced training [27]. Another challenge that surgical trainees battle against is burnout [29], which is found to have serious adverse effects on the quality of services provided by professionals in the healthcare sector [29]. Thus, effective measures to deal with cases of work-related stress are needed to reduce the instances of burnout in both practitioners and trainees [30].

In essence, the level of job satisfaction for trainers in surgical programs plays a critical role in determining the outcomes of their trainees. For example, trainers with low levels of job satisfaction tend to be less committed and innovative, which is essential in devising the best-suited instruction for their classes [31]. Consequently, trainees of these insufficiently delivered classes are likely to have underdeveloped technical skills, which would in turn adversely affect their satisfaction level, eventually reducing their readiness for independent practice [31].

Moreover, a study to examine the relationships between emotional intelligence (EI), job satisfaction, and work performance revealed that high levels of EI would enhance productivity and job satisfaction [32]. Respondents within the first and second years of residency reported higher dissatisfaction levels compared to their final year residency counterparts. This difference can be attributed to variations in training levels, working environments, and stress conditions. For instance, residents in the initial years tend to be exposed to tougher and more competitive working conditions than the final year residents.

A number of studies have been conducted to explore the diversity of individual resident satisfaction and to compare practices across various systems around the world. One study on the differences in job satisfaction levels between female and male resident surgeons revealed no significant differences [33]. Apart from gender, a study focusing on the potential influence of location revealed varying satisfaction levels for surgeons working in different parts of the world [34]. For instance, trained surgeons working in low-income countries acknowledged that family support was critical to their satisfaction [35].

4.1. Limitations and future study

In completing the study, the researchers acknowledged several limitations, including the lack of adequate financial resources and time, and limited the number of respondents (119). The use of such a small sample size to generalize the whole field could affect the validity or feasibility of the findings. Consequently, using responses from only 119 trainees to generalize on the public could have adverse effects. To improve the effectiveness of the study a longitudinal study design should be used. Furthermore, future studies should seek to establish the feelings of the training staff towards the required changes to improve the quality of training programs and thus enhance satisfaction levels.

It is important to note that given the nature and context of the study, and interpretation of results, that the first and second year students account for 49.4% of total responses, which yields significant implications for interpretation and any corrective action. This suggests that resident attitude towards training may change throughout their residency. Therefore, further research can target individual residency year groups to identify the specific causes of dissatisfaction. Longitudinal studies are also needed to track the changes in residents' responses and to explore the factors leading to their possible attitude change.

5. Conclusion

The results of this study showed a low overall satisfaction among residents with the current surgical training programs in the Eastern Region of Saudi Arabia. General dissatisfaction was reported in regard to didactics, mentorship, operative experiences, and research opportunities provided by the programs. This alarming result points to great weaknesses in the current regional programs and calls for changes in the monitoring mechanism to improve not only resident satisfaction levels but also the non-technical skills required to thrive in future surgical careers. Pedagogically, this study highlights the value of teaching transportable skills to prepare residents for real-life scenarios. It also provides actionable data to faculty in making positive changes to the current curriculum. Further research is needed to identify the effective means to improve focus and reduce stress levels of the residents.

Ethical approval

Ethical approval was obtained from the Institutional Review Board (IRB) of the King Fahad Specialist Hospital, Dammam, Saudi Arabia on 9th May 2017 (IRB Study Number – SUR0313).

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Author contribution

All authors (MYD, MN, FM, TS, AJ, HB) participated in the study design, data collection, and literature search. Data was analyzed by MYD. MYD wrote the paper. All authors read and approved the final manuscript.

Conflicts of interest statement

The authors declare no conflict of interest.

Guarantor

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Registration of research studies

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Consent

The consent was approved by the ethical committee and attached along with the survey.

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