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Research Article

Residents' Satisfaction with the Current Residency Training Programs of Saudi Board of Otolaryngology-Head and Neck Surgery

Hadi Al-Hakami

Department of Otolaryngology-Head & Neck Surgery, King Saud bin Abdulaziz University for Health Sciences and King Abdulaziz Medical City, National Guard Health Affairs, Jeddah

***Correspondence to:** Dr. Hadi Al-Hakami, Assistant Professor King Saud bin Abdulaziz University for Health Sciences and Consultant Otorhinolaryngology Head and Neck Surgery, King Abdulaziz Medical City, Jeddah, Ministry of National Guard Health Affairs.

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Keywords: *Otolaryngology; Saudi Board; Residents; Satisfaction*

Abstract

Objectives

To determine the residents' satisfaction with the current Saudi board residency program and identify the contributing factors.

Method

The survey instrument in the form of self-administered close-ended questionnaires was distributed to all otolaryngology residents between second-year through fifth-year training. All residents were registered with Saudi board of otolaryngology-head and neck surgery in the academic year 2013-2014. The main variables included the demographic information, career satisfaction and the satisfaction with the surgical experience.

Results

The response rate was 67% (72/108). All the returned questionnaires were from current second through fifth-year otolaryngology residents. Overall residents' satisfaction ranged between 72-80%. 73% of residents were satisfied with surgical experience and mastery of skills while 47% of the residents were not satisfied with research experience. Factors affecting satisfaction related almost exclusively to training issues, such as education prioritized over service, opportunities for mentorship, the feasibility of hand-on surgical courses, and research experience.

Conclusion

Inspite of overall satisfaction with the quality of training programs, most of the residents were not satisfied with the research experience.

Introduction and Literature Review

The Residency Training Program of Otolaryngology-Head and Neck Surgery under Saudi Commission for Health Specialties (SCFHS) was established to train and graduate competent knowledgeable and skilled otolaryngology - head and neck surgeons who will "function as independent surgeons, enabling them to successfully pursue careers in general otolaryngology or to proceed with subspecialty fellowship training" [1]. "While it is understood that universities are responsible for training residents in many countries, currently the Saudi Commission for Health Specialties (a government organization) oversees all aspects of training. These include program design, training center accreditation, resident selection, the course and final exams, and physician certification and licensing" [2]. Health care in Saudi Arabia enjoys great support from many government sectors with multiple health care systems operating many hospitals with varying levels of health care [2]. The Saudi board training programs of otolaryngology-head and neck surgery have been undergoing constant changes. Residents' satisfaction is a very critical issue that significantly affects the output of training and patient outcomes [3]. It was addressed among literature including burnout, duty hours, job security and satisfaction levels. Career satisfaction is also associated with residents' ability to access quality services for their patients, workload, and organizational and managerial factors [4]. There are many potential intrinsic and extrinsic factors addressed including surgical experience, faculty role in the supervision and mentorship, quality and diversity of teaching, opportunity for research, and atmosphere in the training. Accessibility to advanced technology, proper utilization of simulations, and hands-on surgical courses foster improvement of residents' surgical skills [5]. Active involvement in research during residency training provides the skills needed for life-long self-learning and improves the residents' care of patients and professional practice [6]. To my knowledge, the residents' satisfaction of Saudi board otolaryngology training programs has not been assessed. This cross-sectional multicenter national survey was conducted to explore the satisfaction of otolaryngology residents with their training programs in Saudi Arabia and to identify the contributing factors.

Materials and Methods

Study Design and Participants

A survey instrument in the form of a self-administered close-ended questionnaire was designed to explore the view of otolaryngology-head and neck surgery residents regarding many aspects of their training programs. The survey was distributed to all otolaryngology residents registered with the Saudi board of otolaryngology-head and neck surgery in the academic year 2013-2014. First-year postgraduate residents were excluded as they are under general surgery rotations. In this way, we offered participation to every otolaryngology resident in all accredited Saudi board training programs. They were enrolled from various residency-training programs in Saudi Arabia, including Central, Western, Eastern, and Southern region.

Questionnaire Administration

We distributed questionnaires through postal mailings and soft copies to maximize participation. In addition, a representative of the chief resident level was available in each setting of the training program to facilitate the process of questionnaires' distribution and data collection. Confidentiality was maintained and participation was completely voluntary. We included returned questionnaires for analysis if they were from current second- year through fifth-year otolaryngology residents. Ethical approval was obtained from King Abdullah International Medical Research Center (KAIMRC) (see Appendix 1).

Questionnaire Content

We modified the satisfaction questionnaire from different examples collected from many published studies used to explore residents' career satisfaction [7,8]. One epidemiologist had his input in designing the questionnaire, and five clinicians were consulted to review and suggest any modifications. A pilot study was done to validate the questionnaire. Seven out of 15 (47%) answered the questionnaires and suggested certain changes and recommendations. Based on their suggestions the final version of the satisfaction questionnaire was finalized and sent to the entire study group (Appendix 2).

1. The first part of the questionnaire was related to the socio-demographic Profile. Residents need to fill the first gender, the marital status, the setting of training by region (Central, Western, Eastern and Southern), and the level of training.

2. The second part of the questionnaire was devoted to quality of training and satisfaction. Thirty-one items were developed based on a list of factors related to residents' satisfaction with the quality of their training programs that were identified by a review of the relevant literature. Residents were asked to rate their opinion of those thirty-one items and statements regarding their residency training on a 5-point Likert scale ranging from "very dissatisfied" (score of 1) to "very satisfied" (score of 5). The items and statements were subdivided into four subscales.

a. Educational and Clinical Experiences. It consisted of 12 items.

b. Surgical Experience. It consisted of 5 items.

c. Institutional support. It consisted of 9 items.

d. The atmosphere in the training program. It consisted of 5 items.

We measured the means of each item to calculate a subscore. Then we summed all the means in each subscale. We categorized the level of satisfaction into three categories (low, moderate and high). We considered (1) and (2) options of Likert scale equal to "dissatisfied" which means a low satisfaction level [1]. A response of (3) means "neither satisfied nor dissatisfied" as equals to moderate satisfaction level [2], while (4) and (5) were equal to "satisfied" which means a high satisfaction level [3]. Then finally we calculated the means of all four subscales to determine overall satisfaction level.

Statistical Analysis

We performed statistical analysis using Excel spreadsheet and SPSS Statistics version 19.0 statistical package ((SPSS, Inc., Chicago, IL, USA). Data were summarized using appropriate descriptive statistics. Numerical variables are presented as the mean + standard deviation. A 95% confidence interval was determined for the level of residents' satisfaction. We (1) used Chi-square tests for associations between discrete categorical variables, (2) employed One way ANOVAs for comparison between means of continuous outcomes and discrete categorical variables, (3) used Pearson correlation coefficient to measure the strength of the linear association between variables, and (4) considered comparisons and associations to be statistically significant if P-values less than 0.05.

Results

Demographics and Response Rate

Out of 108 distributed questionnaires, 72 were returned completed (67% response rate). All of returned questionnaires were from current second-through fifth-year residents. A total of 48 out of 72 residents were males (67%) and the remaining (33%) were females. Distribution across training years was even. Table 1 demonstrated the demographic profile of residents including gender, marital status, setting of training, and the level of training.

Table 1: *Residents' demographic characteristics*

Variable	N	%
Gender		
Male	48	67
Female	24	33
Setting		
Central	30	42
Western	23	32
Eastern	14	19
Southern	5	7

Training Level		
R2	12	17
R3	23	32
R4	19	26
R5	18	25
Marital Status		
Single	20	28
Married	51	71
Divorced	1	1

Residents' Satisfaction

Reliability analysis of each satisfaction subscale showed acceptable alpha values: 0.85 for educational and clinical experiences; 0.77 for institutional support; 0.74 for surgical experience and 0.81 for atmosphere in the training program. According to the Nunnally & Bernstein guideline of Cronbach's Alpha of $\alpha > 0.70$, the Cronbach Alpha coefficients for the present study are all within the acceptable range [9]. Table 2 demonstrated the mean + SD for each subscale of satisfaction separately and for all means of subscales together. Notably most of items' means were between 3 and 4 out of 5 Likert scale options. Table 3 illustrated the items with means < 3. A one-way ANOVA between subjects was conducted to compare the effect of gender, setting of training, level of training and marital status on the means of residents' career satisfaction (Table 4). There was a significant effect of marital status on satisfaction means at the p-value < 0.05 for different marital status [$F(1, 70) = 4.52$, $p = 0.04$]. Post hoc comparisons using the Tukey HSD test indicated that the mean score for single status ($M = 3.55$, $SD = 0.51$, 95% CI [3.31, 3.79]) was significantly different than married status ($M = 3.21$, $SD = 0.64$, 95% CI [3.03, 3.39]), $p = 0.04$. The other significant effect of setting of training on satisfaction means was also seen at the p-value < 0.05 for different training settings [$F(2, 69) = 6.54$, $p = 0.002$]. Post hoc comparisons using the Tukey HSD test indicate that the mean satisfaction score for the Eastern-Southern setting ($M = 3.68$, $SD = 0.58$, 95% CI [3.40, 3.96]) was significantly different than the Central setting ($M = 3.27$, $SD = 0.58$, 95% CI [3.05, 3.48]) and Western setting ($M = 3.04$, $SD = 0.56$, 95% CI [2.80, 3.29]), $p = 0.002$. Comparisons between effect of gender and training level on satisfaction means were not statistical significant. Spearman's rho correlation was computed to assess the relation between surgical experience satisfaction and overall career satisfaction which demonstrated weak positive correlation ($r = 0.41$).

Table 2: *The frequencies of the subscales of satisfaction including the Mean ± SD*

	Overall educational and clinical experiences	**Overall surgical experience**	**Overall institutional support**	**Overall atmosphere in the training program**	**Means of four satisfaction subscales**
Mean	3.3	3.14	3.2	3.4	3.26
Std. Deviation	0.7	0.93	0.6	0.7	0.73

Table 3: *Satisfaction items with means < 3*

Item	Mean	Std. Deviation
(Institutional Support Q1) Rewards (e.g., benefits, etc.)	2.51	1.02
(Educational and Clinical Experiences Q10) Opportunities for research	2.57	1.09
(Educational and Clinical Experiences Q9) Education prioritized over service	2.72	1.01
(Surgical Experience Q2) Feasibility of hand-on surgical courses	2.82	1.09
(Surgical Experience Q5) Ability to do most of surgical procedures alone	2.82	1.09
(Institutional Support Q2) Learning resources (e.g., libraries, computers, etc.)	2.85	1.13
(Educational and Clinical Experiences Q11) Opportunities for mentorship (trusted counselor)	2.89	1.00
(Atmosphere Q3) Available time for personal pursuits (spare-time activity)	2.89	1.03
(Institutional Support Q4) Quality of physical facilities (e.g., offices, etc.)	2.93	1.04
(Institutional Support Q5) Size of training program (number of residents)	2.96	1.09

Table 4: *ANOVA summary results of the effect of control variables on satisfaction*

	N	Mean	Sd	*P-value*
Setting of Training				
Central	30	3.27	0.58	0.002
Western	23	3.04	0.56	
Eastern-Southern	19	3.68	0.58	
Marital status				
Single	20	3.55	0.51	0.04
Married	52	3.21	0.64	
Training level				
Junior (R2-R3)	34	3.26	0.67	0.56
Senior (R4-R5)	37	3.35	0.59	
Gender				
Male	48	3.27	0.64	0.79
Female	19	3.32	0.58	

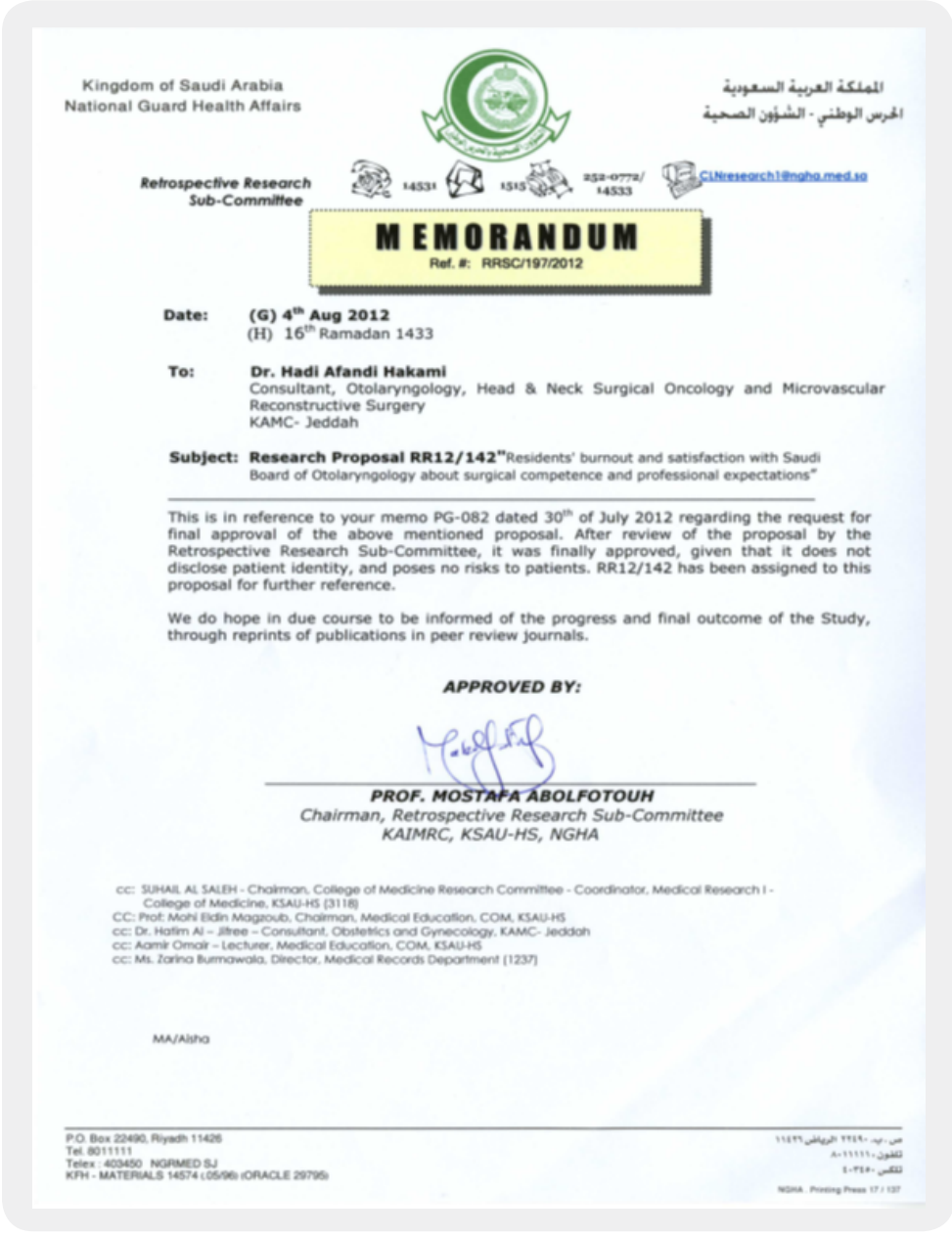
Discussion

For many reasons, the field of otolaryngology- head and neck surgery is an excellent study model for resident self-perceived satisfaction. First, because of its relatively small size which allows for surveying all residents. Second, because of its dual medical/surgical nature which make it more representative of medicine as a whole than any single exclusively medical or surgical field [10]. Up to my knowledge, our study is the first national study addressing otolaryngology residents' satisfaction with Otolaryngology-Head and Neck Surgery programs across Kingdom of Saudi Arabia. This study evaluated different settings of local training programs, and our response rate of 67% is among the highest found in the literature for surveys on residents' satisfaction. Surveying residents across the kingdom is crucial because differences between individual programs could produce a critical sampling bias. Overall residents' satisfaction in our study ranged between 72-80% with mean of 76% which almost similar among different setting of training. 47% of residents were not satisfied with research experience. Around 73% of residents were satisfied with surgical experience and mastery of skills. Level of overall satisfaction and surgical experience satisfaction was better in Eastern and Southern regions where the number of residents is less in compare with Central and Western. Residents identified many areas of weakness in the Otolaryngology-Head and Neck Surgery programs that could be improved including: opportunities for mentorship, feasibility of hand-on surgical courses, research experience, and education prioritized over service. Our study showed a significant effect of marital status on the level of satisfaction i.e. single residents are more satisfied than married. There was no effect of gender and level of training on the residents' satisfaction which was a similar result of different studies in the literature. A study done by Msaouel Pavlos *et al* 2010 investigated Greek medical residents' satisfaction on aspects of their training. Residents' gender, marital status and parenthood did not significantly modify any of the satisfaction scores while age significantly correlated i.e. older residents were more likely to be dissatisfied with peer interactions [11]. A study done by Thien-Tuong Vi Vu *et al* 2010 evaluated residents' satisfaction with Canadian Otolaryngology-Head and Neck Surgery programs revealed no difference in both overall and item score was identified between sexes [8]. A study done by Davenport DL *et al* indicated that surgery residents' satisfaction correlated positively with perceived quality of patient care, effective ancillary staff and services, empathetic nurses, attending staff teaching, appreciation, and openness to suggestions [12]. Career satisfaction varied across specialties. A multi-institutional study done by Leigh *et al* evaluated career satisfaction across 42 Specialties Data was obtained from Round 4 (2004-2005) of the Community Tracking Physician Study (CTS). Each specialty was compared to the satisfaction score for family medicine. Otolaryngology mean satisfaction score of 0.35 which was number 18 out of 42 specialties [3]. Ranking of specialty satisfaction is not constant. It usually varies among different period and across different countries. In Leigh *et al* study, ranking during 1996-1997 the lowest four specialties in satisfaction were otolaryngology, obstetrics and gynecology, ophthalmology and orthopedic surgery. While in 2004-2005, neurological surgery, pulmonary critical care medicine, nephrology and obstetrics and gynecology were the lowest [3]. The limitations of the study include potential recall bias or response bias from the nonresponders and unequal residents' distribution among four settings of training which compromise some of statistical comparison data.

Conclusion

This is the first national study to provide insight into Otolaryngology-Head and Neck Surgery residents' perspective on their residency training. The residents studied experienced average overall satisfaction to quality of training program including surgical experience and mastery of skills. Most of the residents were not satisfied about the professional practice in term of research opportunities. Further studies are warranted to identify specific areas to address in an effort to improve residents' satisfaction. Program directors should consider modifying their curricula to address residents' expressed dissatisfaction with current institutional learning support and research experience.

Appendix 1: *Approval letter from the King Abdullah International Medical Research Center*



Kingdom of Saudi Arabia
National Guard Health Affairs

المملكة العربية السعودية
الحرس الوطني - الشؤون الصحية

Retrospective Research Sub-Committee

14531 1515 252-0772/ 14533 CLINresearch1@ngha.med.sa

MEMORANDUM
Ref. #: RRSC/197/2012

Date: (G) 4th Aug 2012
(H) 16th Ramadan 1433

To: **Dr. Hadi Afandi Hakami**
Consultant, Otolaryngology, Head & Neck Surgical Oncology and Microvascular Reconstructive Surgery
KAMC- Jeddah

Subject: **Research Proposal RR12/142"**Residents' burnout and satisfaction with Saudi Board of Otolaryngology about surgical competence and professional expectations"

This is in reference to your memo PG-082 dated 30th of July 2012 regarding the request for final approval of the above mentioned proposal. After review of the proposal by the Retrospective Research Sub-Committee, it was finally approved, given that it does not disclose patient identity, and poses no risks to patients. RR12/142 has been assigned to this proposal for further reference.

We do hope in due course to be informed of the progress and final outcome of the Study, through reprints of publications in peer review journals.

APPROVED BY:

PROF. MOSTAFA ABOLFOTOUH
Chairman, Retrospective Research Sub-Committee
KAIMRC, KSAU-HS, NGHA

cc: SUHAIL AL SALEH - Chairman, College of Medicine Research Committee - Coordinator, Medical Research I - College of Medicine, KSAU-HS (3118)
CC: Prof. Mohi Eldin Magzoub, Chairman, Medical Education, COM, KSAU-HS
cc: Dr. Hatim Al – Jifree – Consultant, Obstetrics and Gynecology, KAMC- Jeddah
cc: Aamir Omair – Lecturer, Medical Education, COM, KSAU-HS
cc: Ms. Zarina Burmawala, Director, Medical Records Department (1237)

MA/Aisha

P.O. Box 22490, Riyadh 11426
Tel. 8011111
Telex : 403450 NGRMED SJ
KFH - MATERIALS 14574 (05/96) (ORACLE 29795)

Appendix 2: *Resident Satisfaction Questionnaire*

Gender		**Level of Training**				**Marital Status**		
M	F	R2	R3	R4	R5	Single	Married	Others (Divorced,..)
Setting of Training								
Central		Western				Eastern	Southern	

Educational and Clinical Experiences	**Very Dissatisfied (1)**	**Dissatisfied (2)**	**Neither Satisfied Nor Dissatisfied (3)**	**Satisfied (4)**	**Very Satisfied (5)**
Quality of supervision in the clinic					
Diversity of patient population					
Clinical reputation of faculty					
Diversity of training settings					
Quality of teaching and other academic activities as conferences, symposia, etc.					
Fairness in evaluation of residents					
Number of "on-call" duties					
Progression in level of clinical responsibility					
Education prioritized over service					
Opportunities for research					
Opportunities for mentorship (trusted counselor)					
Opportunities for teaching junior residents and other health care professionals					
Surgical Experience					
Quality of supervision in the operating room					
Feasibility of hand-on surgical courses					
Diversity and vole of surgical cases					
Ability to master surgical skills					
Ability to do most of surgical procedures alone					

Institutional support					
Rewards					
Learning resources (e.g., libraries, computers, etc.)					
Autonomy given to residents for patient care					
Quality of physical facilities (e.g., offices, recreation,..)					
Size of training program (number of residents)					
Opportunities for continuity of care					
Safety of environment					
Professional abilities of program director (e.g., administrative abilities)					
Responsiveness of program to feedback from residents					
Atmosphere in the training program					
Morale (team spirit) in department					
Level of support from peers (colleague)					
Available time for personal pursuits (spare-time activity)					
Quality of other residents in the program					
Respect of faculty for residents					

Acknowledgement

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Disclosure

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Declaration

This paper has not been published or submitted for publication elsewhere.

Source of Support

None

Conflicts of Interest

None

Bibliography

1. Saudi Council for Health Specialties. *Saudi Board in Otolaryngology-Head and Neck Surgery.* Program Curriculum and Manual 2014.

2. Al Shanafey, S., AlZahrani, A., AlBallaa, A. & Alballaa, A. (2009). *Surgical resident satisfaction with the current surgical training program in the Riyadh area*. Ann Saudi Med., 29(5), 388-392.

3. Leigh, J. P., Tancredi, D. J. & Kravitz, R. L. (2009). Physician career satisfaction within specialties. *BMC Health Serv Res., 16,* 9(166).

4. Lepnurm, R., Dobson, R., Backman, A. & Keegan, D. (2006). Factors explaining career satisfaction among psychiatrists and surgeons in Canada. *Can J Psychiatry, 51*(4), 243-255.

5. Philibert, I. & Amis, S. (2012). The ACGME 2011 Duty hour standards: Enhancing quality of care, supervision, and resident professional development. The Accreditation Council for Graduate Medical Education (ACGME).

6. Kanna, B., Deng, C., Erickson, S. N., Valerio, J. A., Dimitrov, V. & Soni, A. (2006). The research rotation: competency-based structured and novel approach to research training of internal medicine residents. *BMC Med Educ., 6,* 52-59.

7. Elliott, R. L., Yudkowsky, R. & Vogel, R. L. (2000). Quality in Psychiatric Training: Development of a Resident Satisfaction Questionnaire. *Academic Psychiatry, 24*(1), 41-46.

8. Thien-Tuong-Vi Vu & Nguyen (2010). Residents' satisfaction with Canadian otolaryngology-head and neck surgery programs. *J Otolaryngol Head Neck Surg., 39*(2), 207-213.

9. Nunnally, J. C. & Bernstein, I. H. (1994). Psychometric theory (3rd ed.). New York: McGraw Hill.

10. Lemkau, J., Rafferty, J. & Gordon, R. Jr. (1994). Burnout and career-choice regret among family practice physicians in early practice. *Fam Pract Res J., 14*(3), 213-222.

11. Msaouel, P., Keramaris, N. C., Tasoulis, A., Kolokythas, D., Syrmos, N., Pararas, N., *et al.* (2010). Burnout and training satisfaction of medical residents in Greece: Will the European Work Time Directive makes a difference? *Hum Resour Health, 8,* 16.

12. Davenport, D. L., Henderson, W. G., Hogan, S., *et al.* (2008). Surgery resident working conditions and job satisfaction. *Surgery, 144*(2), 332-338.e5.