A National Survey: Desire of Dermatology Residents to Train in Cosmetic Dermatology and Its Association With Learning Medical Dermatology

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Abstract- The main challenge for training in cosmetic dermatology is the difference in the attitudes of residency programs and residents about the necessity and amount of education during the residency period. A national online survey conducted between September 6th and November 21st, 2017. Residents, members of the Iranian Board of Dermatology, faculty members and program directors (PDs) were asked to participate in the survey.174 participants from 12 residency programs participated in this study and the response rate of residents, professors, and Dermatology Board Directory Members (Boardmans) and PDs was 89.8%, 61.7%, and 81.8%, respectively. Residents declared greater tendency towards practicing medical dermatology (mean score, 5.165±0.8335) over the five years after graduation than that of was perceived by professors (4.043±1.2988), and Boardmans and PDs (4.059±1.0290) (P<0.001). The first residents' priority was practicing in medical dermatology (5.165±0.8335) during 5-years after graduation. However, professors (5.261±0.8282) and Boardmans and PDs (5.176±0.7276) predicted residents' first priority would be practicing cosmetic dermatology (P<0.001). Forty one (60.3%) of the professors, Boardmans, and PDs agreed or strongly agreed that residents' desire to learn more about cosmetic procedures resulted in their decreased interest in learning medical procedures (P=0.18). Medical dermatology is still clearly the basis for training in residency programs,and even for residents who have a high tendency to practice cosmetic dermatology, there is a strong tendency to work in the field of medical dermatology as well.

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Introduction

The attitudes of residency program directors (PDs) about teaching cosmetic procedures during the residency period are varied in different studies. Some PDs consider cosmetic dermatology an important aspect of dermatology education while others consider it unimportant (1,2). The most important concern of residency programs is the undesirable effects of cosmetic education on residents' amount of interest, studying, and learning about medical dermatology (3). However, in some studies, residents stated that learning cosmetic skills did not interfere with their learning of medical dermatology (4).

Furthermore, due to society's increasing demand for cosmetic procedures as well as the fact that most of these procedures are performed by non-physicians and untrained physicians, there are many adverse events, the number of which is unfortunately unclear (2). Many residents try to practice in the field of cosmetic dermatology after they graduate. If there is an educational gap, this problem may affect patient safety. Therefore, it is important for dermatology residents to be wellprepared in this area (2,4).

In this study, we examine the attitudes of residents and faculty members of dermatology departments about the desire of dermatology residents to learn cosmetic dermatology and the association of this desire on learning medical dermatology.

Materials and Methods

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In this cross sectional study, through oral interviews with professors and residents of University's Department of Dermatology (MUDD) and using an overview of related discussions in online dermatology groups, the main research topics were identified,and the initial questions were designed. Then, a panel of five faculty members from MUDD was established to assess the validity of the questionnaires. The content validity was evaluated by using content validity coefficient of item (CVCI) and content validity coefficient of scale (CVCS). The validity of the questionnaires confirmed an 80% confidence factor. Then, in order to investigate the reliability of the questionnaires, 11faculty members and 14residents were asked to answer questions 2times, with an interval of 2 weeks in between. The results of the test and retest showed the reliability of questionnaires.

Survey questions solicited information from the residents and faculty members in the following 6 areas: 1) demographic information; 2) The level of residents' desire to train in cosmetic procedures and the association of this desire with their interest in learning medical dermatology; 3) Attitudes of the faculty members about the association of residents' increased desire to train in cosmetic dermatology and the association of this desire on their interest and expertise in medical dermatology; 4) Residents' self-reported intention and faculty members' prediction about the activities of residents in different fields of dermatology over the five years after graduation as measured on a 1-to-6 Likert type scale (1, non-activity; 2, very low; 3, low; 4, moderate; 5, high; 6, very high); 5) Faculty members' perceived evaluation of academic achievement in medical dermatology for residents who spent more time learning cosmetic dermatology than medical (1, very bad; 2, bad; 3, moderate; 4, good; 5, very good); 6) The residents' scores of annual in-service training examination (ITE) andIranian Board of Dermatology (IBD) certification exam.

The questionnaires were designed online in Google Docs (https://docs.google.com/forms). A link to the questionnaires and a cover letter for completing the form were sent electronically to all residents who were in their 4th year or had recently completed the 4th year and all faculty members, including Dermatology Board Directory Members (Boardmans), PDs, and professors from all residency programs in Iran. They were sent electronically two times, with an interval of one month in between, September 6th and November 21th, 2017. A paper questionnaire was also provided to some faculty members.

Participation in this study was completely voluntary and anonymous. Data were analyzed with Statistical Package for the Social Sciences Version 16.0 (SPSS, Inc. Chicago, IL, USA).The normal distribution of data was assessed using the Kolmogorov-Smirnov test. The Mann-Whitney test and the Kruskal-Wallis test were used to compare the Likert scores between two or more groups. The significance level of the two domains was considered to less than 0.05. Chi-square test was used for comparing categorical variable among study groups. This study was approved (code number: IR.MUMS.fm.REC.1396.258) by the Ethics Committee of the Mashhad University of Medical Sciences.

Results

One-hundred seventy-four participants from 12 residency programs participated in this study, including 106 residents, 50 professors, and 18 Boardmans and PDs. The response rate for residents, professors, and Boardmans and PDs was 89.8%, 61.7%, and 81.8%, respectively. The number of 4th-year residents was 53 (50%), and those who had recently completed the 4th year in 2017 was 53 (50%). 125 (71.8%) of all the respondents were female. The average age of residents was 32.34±3.64 years, for professors it was 43.97±9.85, and for Boardmans and PDs, it was 55.62±6.69 (P<0.001).

Professors' perceived evaluations of academic achievement in medical dermatology for residents who spent more time learning cosmetic dermatology than medical were bad (1, 2%), moderate (30, 60%), good (16, 32%) and very good (3, 6%), while Boardmans' and PDs' perceived evaluations of that were very bad (1, 5.6%), bad (2, 11.1%), moderate (8, 44.4%), good (6, 33.3%) and very good (1, 5.6%) (P=0.21).

Forty-one (60.3%) of the professors, Boardmans, and PDs agreed (35, 51.5%) or strongly agreed (6, 8.8%) that residents' desire to learn more about cosmetic procedures resulted in their decreased interest in learning medical dermatology. However, others disagreed (19, 27.9%) or were neutral (8, 11.8%) about it (P=0.18).

Thirty-two (30.2%) of residents said that they spent more time and focused on learning cosmetic skills than medical dermatology. In this group (n=32), for the question about how much spending more time and focusing on learning cosmetic skills affected their interest in learning medical dermatology, responses included no differences from the past (16, 50%), a significant increase in interest (13, 40.6%), a significant decrease in interest (2, 6.3%) and a little increase in

interest (1, 3.1%). Thirty-one of these residents (96.8%) responded to the question about the effect of spending more time and focused on learning cosmetic skills on the amount of studying and learning medical dermatology. Most of them (16, 51.6%) said that learning cosmetic dermatology took place in the daily operating room program and was part of the routine of a residency program, and that it did not interfere with studying and learning medical dermatology (Figure 1).

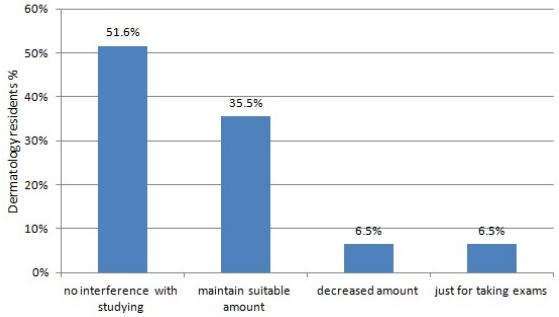

Figure1. The association of much more focus to learn cosmetic with the amount of studying medical dermatology

Finally, the residents were asked about the reason for their increased desire to learn cosmetic skills compared to medical skills. 59.4% (n=19) stated that during the residency period, less attention was paid to training in cosmetic ones and that the post-graduation period was not a suitable time to learn and gain experience. Other answers included interest and enjoyment in performing cosmetic procedures (16, 50%), a higher future income (10, 31.3%), achievement of job security due to the overlap in the fields of specialty practice in cosmetic procedures and the excessive activity of non-physicians and untrained physicians in cosmetic dermatology (10, 31.3%). The total percentages equal more than 100% because respondents could choose more than one option.

A comparison of the mean scores of annual in-service training examination (ITE) andIranian Board of Dermatology (IBD) certification exam of residents who spent more time and focus on learning cosmetic skills with others who did not, showed that the mean scores were higher in the second group, except for the mean scores on the annual ITE for 4th-year residents, which was higher in the first group (122.611±11.4488). However, there was no statistically significant association between any of the scores and the groups (Table 1).

Table 1. Comparison of the mean scores of annual ITE and IBD certification exam in two groups of residents based on much focus on learning cosmetic skills

	Much more focus on learning cosmetic	Not much more focus on learning cosmetic	*P*
	Mean±SD	Mean±SD	
Mean annual ITE scores of 1-Year residents	90.742 ± 12.1682	91.545 ± 13.7898	0.82
Mean annual ITE scores of 2nd -Year residents	99.452 ± 13.6695	104.045 ± 13.5003	0.19
Mean annual ITE scores of 3rd -Year residents	109.400 ± 12.4419	112.727 ± 13.2125	0.18
Mean annual ITE scores of 4th -Year residents	122.611 ± 11.4488	121.464 ± 11.7520	0.96
Mean scores of IBD certification exam	123.588 ± 11.9690	127.619 ± 8.6225	0.39

Residents stated greater tendency towards practicing medical dermatology (mean score, 5.165±0.8335) over the five years after graduation than that of was perceived by professors (4.043±1.2988), and Boardmans and PDs (4.059±1.0290) (*P*<0.001). The mean scores of tendency towards cosmetic activity in the professor's group (5.261±0.8282) and Boardmans and PDs group (5.176±0.7276) were higher than those of the residents' group (4.890±.8750) (*P*=0.08).The first residents' priority was practicing in medical dermatology (5.165±0.8335) during 5-years after graduation. However, professors (5.261±0.8282) andBoardmans and PDs (5.176±0.7276) predicted residents' first priority would be training cosmetic dermatology (Table 2).

An evaluation of the relationship between residents' priority of practicing in the fields of cosmetic and medical dermatology during the five years after graduation showed that 30 (62.5%) of residents who intended practice cosmetic dermatology and placed a high priority on this also highly prioritized their intent to

practice medical dermatology. 18 (69.2%) of residents who very highly intended to practice cosmetic dermatology also intended to practice medical dermatology to a very high degree (P<0.001) (Table 3).

Table 2. The attitudes of respondents on residents' intentions to practice in different fields during 5-years post-graduation*

	Residents' intention	Perceptive estimation of Professors	Perceptive estimation of Boardmans and PDs	*P*
Medical dermatology	5.165 ± .8335	4.043 ± 1.2988	4.059 ± 1.0290	< 0.001
Surgical dermatology	4.418 ± .9783	4.500 ± .7528	4.235 ± .7524	.56
Cosmetic dermatology	4.890 ± .8750	5.261± .8282	5.176 ± .7276	.080
Academic and teaching	2.857 ± 1.6369	2.630 ± .8262	3.059 ± .8993	.48
Hospital based	2.989 ± 1.4719	2.522 ± .8625	2.824 ± .9510	.13
Private office	4.769 ± 1.3002	5.304 ± .8912	5.176 ± .7276	.09
Research	2.725 ± 1.5134	2.109 ± .9713	2.647 ± .8618	.03
Pediatric dermatology	2.835 ± 1.3521	2.630 ± 1.0616	2.824 ± 1.0744	.60
Dermatopathology	2.242 ± 1.2591	2.261 ± .9294	2.647 ± .8618	.22

*Based on a 1-to-6 Likert-type scale (1,no activity; 6, very high activity)

Table 3. Evaluation of the relationship between residents' priority of practicing in the fields of cosmetic and medical dermatology during the five years after graduation

			Residents' priority of practicing in medical dermatology				Total	*P*
			Low or Very low	Moderate	High	Very high		
Residents' priority of practicing in cosmetic dermatology	Very low	Number	1	0	0	0	1	<0 .001
		cosmetic group %	100%	0%	0%	0%	100%	
		medical group %	25%	0%	0%	0%	1%	
	Low	Number	3	0	1	1	5	
		cosmetic group %	60%	0%	20%	20%	100%	
		medical group %	75%	0%	2.2%	2.4%	4.9%	
	Moderate	Number	0	7	7	9	23	
		cosmetic group %	0%	30.4%	30.4%	39.1%	100%	
		medical group %	0%	53.8%	15.6%	22%	22.3%	
	High	Number	0	5	30	13	48	
		cosmetic group %	0%	10.4%	62.5%	27.1%	100%	
		medical group %	0%	38.5%	66.7%	31.7%	46.6%	
	Very high	Number	0	1	7	18	26	
		cosmetic group %	0%	3.8%	26.9%	69.2%	100%	
		medical group %	0%	7.7%	15.6%	43.9%	25.2%	
Total		Number	4	13	45	41	103	
		cosmetic group %	3.9%	12.6%	43.7%	39.8%	100%	
		medical group %	100%	100%	100%	100%	100%	

Figure 2 reflects the residents' priority of practicing field during 5-years after graduation by sex. Women declared more intention to practice medical dermatology was more than men. In contrast, the desire to do cosmetic dermatology was more in men. However, none of these results were statistically significant.

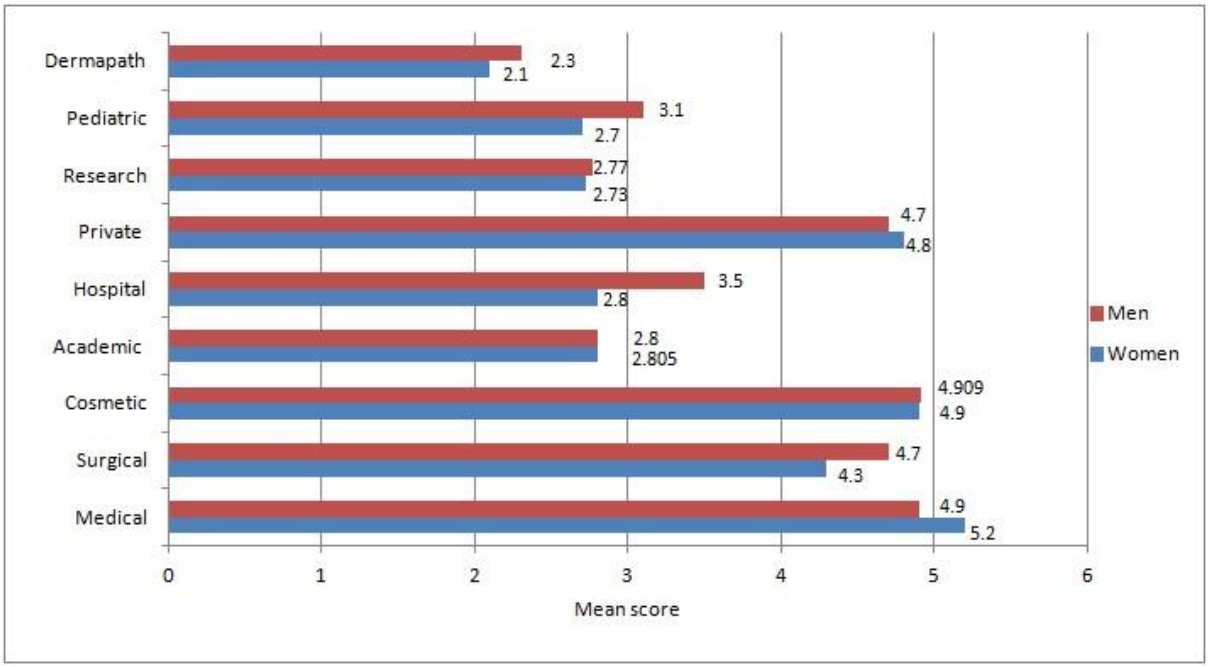

Figure 2. Residents' priority of practicing field after graduation by sex. Dermpath indicates dermatopathology. Data are based on a 1-to-6 Likert-type scale (1,no activity; 6, very high activity)

Discussion

Based on the results of this study, most faculty members believed that due to residents' desire forlearning cosmetic procedures, their interest in learning medical dermatology was reduced. About one-third of our residents reported spending more time and focus on learning cosmetic skills, and half of them stated that their interest in learning medical dermatology did not differ much from the past; some of them even stated that their interest in learning medical dermatology was significantly increased. Most of the residents who had a high or very high tendency to practice cosmetic dermatology also intended high or very high to practice medical dermatology. The same was true of those who had a high or very high desire to perform medical dermatology. In other studies, PDs believed that residents had a greater desire to learn about cosmetic dermatology compared to medical dermatology, and this increased tendency in cosmetic dermatology reduced their interest and expertise in medical dermatology (2,3). However, in another study, most residents said that learning cosmetic dermatology did not reduce their desire and interest in learning medical dermatology, and they did not feel that they were not well prepared for working in the field of medical dermatology (4).

In our study, there is also a difference between the viewpoint of faculty members of residency programs and residents. Residency programs are mainly concerned that training in medical dermatology may become compromised by training cosmetic dermatology, but residents also want to learn more about cosmetic dermatology skills with an emphasis on maintaining their interest and expertise in the field of medical dermatology. This difference of opinion is one of the most important challenges in dermatology residency education.

This study shows that most faculty members' perceived evaluation of academic achievement in medical dermatology was moderate for residents who spent more time learning cosmetic dermatology than medical. A comparison of the mean annual ITE and IBD certification exam of these residents showed that those residents with increased interest in cosmetic dermatology scored lower than the others, except for the annual ITE scores of 4th-year residents. However, there was no statistically significant relationship between any of the scores and the groups. Therefore, it cannot be said with any certainty that residents' greater tendency to concentrate on cosmetic skills has any negative effects on their academic achievement.

In our study, a majority of residents stated that practicing in medical dermatology would be their first priority within the next five years after graduation, and

cosmetic dermatology was their second priority; however, according to faculty members' predictions, practicing cosmetic dermatology would be the residents' first priority after graduation.

According to a 2009 practice profile survey by the AAD, although more than half of dermatologists did cosmetic procedures, they spent less than 10% of their time on cosmetic procedures, and medical dermatology was still their first priority (5). The results of our research from the perspective of the residents are similar to the AAD study in that the residents' first priority is activity in the field of medical dermatology. Carrying out studies in Iran similar to the AAD's study may provide a more appropriate and accurate assessment of the realities of the labor market for residents because residency programs have an important role in modifying attitudes.

Our study shows that the motivations of half of the residents who spent more time and focus on learning cosmetic skills were the interest and enjoyment in performing procedures, but more than half of them considered the main cause of their motivation was the decreased attention to training in cosmetic skills during the residency period, and they felt that post-graduation was an inappropriate time for training and gaining experience. A significant number of the residents stated that their main reasons for learning cosmetic dermatology were earning a better income in the future and achieving job security due to the overlap in the specialty practices of cosmetic procedures, and the large number of non-physicians and untrained physicians in cosmetic dermatology.

Although the concern among residency PDs' and board members about residents' increased desire to train in cosmetic dermatology is understandable, this subject is multi-factorial and should be viewed realistically. In order to improve residency programs' policies according to society's ever-increasing demands for safe cosmetic services, a periodic revision of educational curricula, as well as the insertion and implementation of new cosmetic procedures into these programs, will increase the quantity and quality of training; furthermore, continuing hands-on training for residents and dermatologists at dermatology conferences, enforcing policies required by Ministry of Health, Iranian Council of Medicine against non-physicians and non-specialist physicians performing most of these cosmetic procedures can lead to a better outlook for future work, job assurance and financial security, and the increased credibility of post-graduate training in cosmetic skills. The quality of medical dermatology training most certainly will be influenced effectively and desirably if dermatology departments and associations apply these recommendations.

Our findings suggest that most female residents have more intention than men to practice in the fields of medical dermatology, academics and teaching, private practice, and dermatopathology in the five years after graduation. In contrast, men had a greater tendency to practice surgical, cosmetic, hospital-based dermatology, research, and pediatric dermatology. In another study, female residents mentioned more interest in practicing cosmetic and pediatric dermatology and male residents were more interested in doing academic activities, research, teaching, and dermatopathology. Considering that the majority of dermatology residents were women, they recommended more effort to involve women in academic dermatology (6). Unlike this study, men were more interested in doing surgical and cosmetic dermatology in our investigation,and it may be due to more financial and job security concerns in men.

Study limitations

The currentstudy indicates but doesn't explicate the mismatch between the perceptive estimation of professors, PDs, and boardmans and residents' intention about practice field in the future work. we also recognize that residents' perspectives on the practice field in the future may change as they enter practice, so following studiesof recent residents after graduation could provide more perceptionon the evolution of attitudes.

Medical dermatology is still clearly the basis for training in residency groups, and those residents who intend to practice cosmetic skills also intend to practice medical dermatology; additionally, those residents who are highly inclined to work in the field of medical dermatology also have a strong desire to do cosmetic procedures.

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