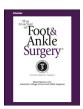
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The Residency Training Experience in Podiatric Medicine and Surgery

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ABSTRACT

The podiatric medicine and surgery residency is currently characterized by 3 years of comprehensive training. Contemporary issues have recently influenced the direction of training in the profession of podiatric medicine. Formal investigation into the residency training experience has, nonetheless, been limited. The purpose of the present study was to conduct a learning needs assessment of podiatric residency training. An electronic survey was developed, with comparable versions for program directors and residents. The specific topics investigated included the use of minimum activity volume numbers, learning resources, duty hours, strengths and weaknesses of residents, motivation of hosting student externship positions, noncognitive residency traits, meetings between residents and directors, resident satisfaction, and director satisfaction. A total of 197 program directors nationwide were sent the survey electronically, and 109 (53%) responded. Of 230 residents receiving the survey, 159 (78%) responded. Several statistically significant differences, and notable similarities, were observed between the 2 groups encompassing many aspects of the survey. A majority opinion, among both directors and residents, was found that the use of procedural assessment tools might improve resident evaluation. The responding directors and residents agreed that the following 3 topics were weaknesses in podiatric training: practice management, biomechanics, and performing podiatric research. Direct feedback immediately after surgery was the most valuable learning resource reported by the residents. The results of our study reflect the current status of the podiatric medicine and surgery residency and could facilitate improvement in the residency training experience.

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The residency in podiatric medicine and surgery has undergone constant transformation. Although 1-year rotating residencies were formerly common, residency training in the profession of podiatric medicine is now characterized by a standard 3 years of comprehensive training.

The Council on Podiatric Medical Education (CPME) is designated by the American Podiatric Medical Association (APMA) as the accrediting agency in the profession of podiatric medicine (1). CPME document 320 delineates the standards and requirements for approval of podiatric medical and surgical residencies (PMSRs). Compliance with these standards, which are separated into institutional standards and program standards, is necessary for both initial and continuing approval. Program standard 6.0 states broadly: "The podiatric medicine and surgery residency is a resource-based, competency-driven, assessment-validated program that consists of three

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years of postgraduate training in inpatient and outpatient medical and surgical management. The sponsoring institution provides training resources that facilitate the resident's sequential and progressive achievement of specific competencies." CPME document 320 standards also involve learning activities; for example, "Didactic activities that complement and supplement the curriculum shall be available at least weekly" (program standard 6.7), and, "A journal review session, consisting of faculty and residents, shall be scheduled at least monthly to facilitate reading, analyzing, and presenting medical and scientific literature" (program standard 6.8).

Currently, the CPME requires that graduating residents complete a minimum number of case activities and procedure activities, defined together as patient care activity requirements. The required numbers for each of these activities is referred to as the minimum activity volume (MAV). The CPME 320 document defines MAVs as "patient care activity requirements that [en]sure that the resident has been exposed to adequate diversity and volume of patient care" (1).

One contemporary issue in podiatric medicine is the residency training shortage. According to the American Association of Colleges of Podiatric Medicine, residency programs were short 86 positions for the classes of 2012 and 2013 (2). Strategies to correct the residency training shortage have been discussed in various podiatric statements

Table 1Value of learning resources, sorted by resident and director scores

Variable	Residents			Directors			p Value
	Mean Score	n	SD	Mean Score	n	SD	
Direct feedback immediately after surgery	4.62	143	0.54	4.67	103	0.58	.4880
Personal communication with residency faculty	4.55	145	0.62	4.64	102	0.50	.2258
Cadaver foot/ankle laboratory sessions	4.54	145	0.61	4.46	102	0.71	.3441
Personal communication with other residents	4.49	144	0.72	4.73	102	0.60	.0063*
Personal communication with residency director	4.44	145	0.77	4.72	103	0.55	.0018*
Podiatric surgical texts	4.37	145	0.76	4.39	103	0.66	.8296
Radiology conferences	4.33	80	0.69	4.00	75	0.82	.0073*
Orthopedic surgical texts	4.23	145	0.78	4.08	103	0.84	.1497
Podiatric journals	4.13	143	0.89	4.20	102	0.83	.5332
Surgical videos, free	4.03	145	1.00	3.56	103	0.97	.0003*
Morbidity and mortality conferences	4.02	89	0.89	3.62	78	0.90	.0045*
Orthopedic journals	3.99	145	0.98	4.00	103	0.86	.9337
Journal clubs	3.93	145	0.84	4.11	103	0.79	.0896
Surgical videos, paid	3.89	145	1.01	3.81	102	0.85	.5141
Anatomic textbooks	3.86	144	0.94	3.83	101	0.90	.8026
Grand rounds	3.83	144	1.01	4.04	103	0.88	.0907
International training opportunities	3.83	64	1.15	3.08	49	1.29	.0015*
Pathology conferences	3.66	50	1.21	3.33	52	0.90	.1203
Other online podiatry education websites	3.37	143	1.12	3.02	103	1.01	.0124*
PRESENT Podiatry (online)	3.35	142	1.21	3.08	103	1.27	.0926

Abbreviation: SD, standard deviation.

and commentaries (3–5). A second contemporary issue in podiatric medicine is the APMA Board of Trustees Vision 2015. The goal of Vision 2015 is, "to ensure that podiatrists are universally accepted and recognized as physicians consistent with their education, training, and experience" (6). The training of residents in the profession of podiatric medicine, in this context, is a central and critical issue (7).

Formal investigation of podiatric training institutions has the potential to improve the educational experience for both program directors and residents. The purpose of the present study was to identify the learning needs of PMSR programs through the use of a national survey. The goal was to provide insight into the wide range of issues affecting the future of these programs.

Materials and Methods

An online survey was designed using Qualtrics, a Web-based survey tool (Qualtrics LLC, Provo, UT). We collectively developed a survey for residents and one for directors. The existing published data on resident training was reviewed before the construction of the 2 surveys. To improve content validity, feedback was then solicited from 5 experienced podiatric physicians with exposure to academic podiatry and podiatric residency training. This feedback was used to add questions, remove questions, and refine the language or phrasing of the existing questions. Notably, the decision to address the topic of MAVs was generated through this portion of the feedback process. As a method of trialing the survey, 5 geographically diverse residency directors were then sent the survey. Feedback from these responses was used to further refine the questions. The final version included questions covering the following topics: residents'

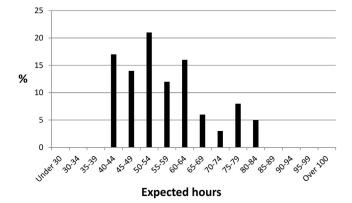


Fig. 1. Directors' expectation of resident work hours, against the percentage of directors (N=103 directors).

learning resources, resident work hours, supplemental resident hours, strengths and weaknesses of residents, motivation of hosting student externship positions, noncognitive residency traits, meetings between residents and directors, MAVs, resident satisfaction, and director satisfaction. The survey distributed to the directors is presented in Supplemental Appendix SA.

Electronic mail (e-mail) addresses were available for 197 of the 208 residency directors through the Central Application Service for Podiatric Residencies/Centralized Residency Interview Program website (available at: http://casprcrip.org). An introductory e-mail was sent describing the purpose of the study and other relevant information. In the introductory e-mail, the directors were asked to forward the e-mail to each of their active residents. The e-mail included separate links for residents and directors. All the responses were anonymous. Three weekly reminder e-mails were sent. At 3 weeks after the last reminder e-mail was distributed, the online survey was closed.

Data analysis was performed using an independent unpaired t test for all continuous variables, with the exception of trends by resident year. Trends by resident year were evaluated using 1-way analysis of variance. A chi-square test was used for all categorical variables. Statistical significance was defined at the 5% ($p \le .05$) level. Pearson correlation coefficients were calculated to determine the trends with regard to resident satisfaction, director satisfaction, residency year, and program size. The local institutional review board approved the present study. The survey began with a brief question obtaining informed consent.

Results

Of 197 program directors contacted, individual questions were answered by 98 (50.0%) to 103 (52.3%) program directors. This

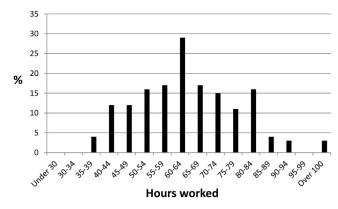


Fig. 2. Resident work hours self-reported by residents, against the percentage of residents ($N=159\ residents$).

^{*} Statistically significant.

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