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Research Paper

Adult Neurology Rotations for Child Neurology Residents: Exploring the Resident Perspective

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ABSTRACT

Background: In 2014 the Accreditation Council for Graduate Medical Education modified adult training requirements for child neurology certification to reduce the number of hospital-based rotations and require inclusion of outpatient clinic and electives. We aimed to identify how these training requirements are being met and explored its impact on residents.
Methods: A REDCap questionnaire surveying resident opinion on impact of adult training on resident education, professional development, and wellness was e-mailed to 79 program directors in the United States for distribution in 2020. Results were analyzed using descriptive statistics and *t* test calculations. Qualitative analysis of narrative responses involved theme identification.
Results: A total of 116 child neurology residents participated (30.2% PGY-3, 37.9% PGY-4, and 31.9% PGY-5 residents); 20.9% had all adult rotations during the PGY-3 year, and 79.1% had adult rotations spread throughout residency. Adult training had a small positive impact on resident autonomy and a negative impact on resident wellness regardless of training structure. However, residents with 12 months of adult training during PGY-3 year scored worse on burnout, mood changes, work-life balance, and social well-being ($P < 0.05$). Some themes identified included residents feeling unsafe due to lack of supervision, that education was not prioritized, and that adult patient care lacked relevance to long-term career goals.
Conclusions: Adult neurology training was found to negatively affect child neurology resident wellness, with a larger negative impact when adult training was completed in 12 months during PGY-3 year. Other identified areas where change could be implemented include improving feelings of resident safety and prioritizing quality and relevance of education.

Introduction

The typical pathway for completing a child neurology residency includes two years of general pediatrics, one year of adult neurology, and two years of child neurology. Per the Accreditation Council for Graduate Medical Education (ACGME) guidelines, residencies must have at least 12 months of adult neurology training, including (1) six months on adult neurology inpatient rotations, (2) three months of outpatient clinical adult neurology, and (3) three months of elective adult neurology experiences that can include nonclinical rotations.[1,2]

The motivation for including adult neurology training in child neurology residency is largely based on the idea that experience in adult neurology allows trainees to develop stronger skills in history-

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taking, performing the neurological examination, localization, and clinical reasoning.[3] Some experts in the field believe that it is easier to learn functional neuroanatomy in the adult patient first, and that developing these foundations within adult neurology is indispensable to training child neurologists. Additional perceived advantages include eligibility for American Board of Psychiatry and Neurology certification in "Neurology, with special qualification in child neurology" implying competency to care for adults with neurological diseases, as well as maintenance of strong alliances with adult neurology mentors and national subspecialty organizations. However, over the last decade, there have been criticisms of this reasoning and the ACGME guidelines requiring 12 months of adult neurology training. A 2016 study surveying child neurology program directors found that the majority of respondents felt that the current adult neurology training was too long.[4] Other surveys of practicing child neurologists[5-7] who trained before the 2014 ACGME changes reported a majority of respondents favoring reduction of adult neurology rotations and redirection toward specific content areas such as neurogenetics.

The American Academy of Pediatrics 2015 workforce survey also reported that a majority of child neurology resident respondents favored fewer months of adult neurology training and identified preferred areas for additional training, while demonstrating a high level of enthusiasm for the intellectual stimulation of child neurology.[5] However, that study neither probed attitudes toward specific components of adult neurology training nor assessed effects on well-being. This study, which is the first to do so, aims to explore child neurology resident perspectives about the breadth and timing of adult neurology rotations and the impact of adult rotations on resident education, professional development, and wellness.

Methods

Between September 16, 2020, and November 1, 2020, PGY-3, 4, and 5 child neurology residents were recruited to participate in the study. Seventy-nine child neurology program directors in the United States were contacted through direct e-mail as well as through a communication from the Professors of Child Neurology to distribute a link to an online survey to their residents. PGY-1 and 2 child neurology residents were excluded from this study.

Participants were administered a survey via REDCap to collect information on the structure of their adult neurology rotations and to identify how specific rotations are being used to fulfill the adult training requirements. We also surveyed resident opinions on the impact of their adult neurology training on resident education, professional development, and wellness. The survey used did not go through a formal validation process but had been developed through an iterative process by the authors, including two current child neurology residents from different training programs and three residency program directors and educational researchers from three institutions. Questions may have contained inherent biases, and the survey has been included for reader review as a supplemental Figure. The survey consisted of 16 questions, including 5-point Likert scales, multiple choice, multiple selection, and open-ended questions inviting narrative comments. The initial survey was distributed as part of a medical education quality improvement project with no identifying information collected. The University of Rochester Research Subjects Review Board subsequently designated this study as not human subject research.

Data analysis

We analyzed survey results through mixed quantitative and qualitative methods. We used descriptive statistics and two-sample *t* test calculations to compare survey responses between different resident groups. Qualitative thematic analysis was undertaken to develop a more detailed understanding of the resident perspective. To conduct this analysis of participants' narrative responses, three study investigators (S.D., C.M., and R.T.S.) independently reviewed all narrative responses and coded emerging themes and subthemes. In a consensus-building meeting, the three coders discussed their independent themes and consolidated and refined them through discussion. As no identifying information was collected and only a set number of statements were available, further probing of responses could not be performed and saturation of themes could not be assumed, which is a limitation of the study.

Results

A total of 116 child neurology residents participated in this study, which represents an estimated 30% of current child neurology PGY-3 through five residents in the United States. Of those, 30.2% were PGY-3 residents (n = 35), 37.9% were PGY-4 residents (n = 44), and 31.9% were PGY-5 residents (n = 37); 20.9% of residents (n = 24) had all adult rotations during their PGY-3 year, and 79.1% (n = 91) had adult rotations spread throughout residency. Additional participant characteristics are included in Table 1.

During adult neurology training, residents rotated through a variety of inpatient rotations, as well as clinical and nonclinical ambulatory and elective rotations (Table 2).

Identified themes from the qualitative analysis were broadly categorized into adult training structure and resident experience themes (Table 3).

Overall resident experiences

Negative impressions

Adult neurology training adversely affected resident wellness. Residents perceived that adult training had a negative impact on personal wellness, feelings of burnout, mood, work-life balance, social well-being, and professional fulfilment (Table 4).

It was observed that 71.4% of residents (n = 80) indicated that adult neurology training affected mood, with anxiety (34.8% of residents) and depression (16.1% of residents) reported most frequently when specified (31.2% unspecified).

Residents were concerned about patient care safety, due to general feelings of being unsafe (n = 4), lack of supervision (n = 9), and difficulty with the transition from pediatrics to adult medicine (n = 10):

> *"You're expected to come in and manage adult medical problems, run code strokes, seeadults in the ER when you've had no adult training and have spent the last 2 years learning pediatric medicine. It feels incredibly unsafe and overwhelming."*

> *"Generally the year felt as if we were thrown off the deep end of a pool with weights on our ankles and had to figure out how to stay afloat."*

> *"…we're expected to do the same things that the adult neurology residents do even though we haven't had a year of internal medicine training [which] seems a little unfair. It is incredibly anxiety provoking, and I've never been more scared that I may kill a patient because of a mistake I made."*

Many residents specifically noted that their adult neurology training was not relevant to their future career as a child neurologist (n = 26) and several felt that adult neurology rotations involved too much adult medicine (n = 11):

TABLE 1.
Participant Characteristics

Characteristic	Overall Sample
	N (%)
Current training level (n = 116)	
PGY-3	35 (30.2)
PGY-4	44 (37.9)
PGY-5	37 (31.9)
Format of adult training (n = 115)	
12 months entirely in PGY-3 year	24 (20.9)
12 months over PGY-3 to PGY-5 years	91 (79.1)
Size of residency (n = 116)	
Small (1 resident per year)	12 (10.3)
Medium (2-3 residents per year)	60 (51.7)
Large (≥4 residents per year)	44 (37.9)
Location of adult training (n = 116)	
Home institution	70 (60.3)
Affiliated institution within walking distance	37 (31.9)
Affiliated institution not within walking distance	33 (28.4)
Career goals (n = 116)	
Academic medicine	64 (55.2)
Hospitalist	6 (5.2)
Outpatient or private practice	18 (15.5)
Undetermined	23 (19.8)
Other*	5 (4.3)

* Other career goals reported by residents included working in pediatric neurocritical care, in the military, or as a primary researcher.

TABLE 2.
Scheduling of Residents on Adult Neurology Rotations*

Adult Rotation	Overall Sample
	N (%)
Inpatient rotations (n = 116)	
Inpatient service	116 (100)
General inpatient	89 (76.7)
Stroke inpatient	81 (69.8)
Combined inpatient	39 (33.6)
Consult service	112 (96.6)
General consults	82 (73.2)
Stroke consults	69 (61.6)
Combined consults	52 (46.4)
Neuromedical intensive care unit	71 (61.2)
Epilepsy monitoring unit	57 (49.1)
Other†	18 (15.5)
Ambulatory rotations (n = 114)	
Movement	86 (75.4)
Neuromuscular	83 (72.8)
Epilepsy	75 (65.8)
General adult neurology	74 (64.9)
Neuroimmunology	68 (59.6)
Headache	56 (49.1)
Cognitive/dementia/memory care	53 (46.5)
Neuro-ophthalmology	41 (36)
Stroke	39 (34.2)
Sleep medicine	30 (26.3)
Neuro-oncology	24 (21.1)
Other‡	9 (7.9)
None	1 (0.9)
Nonclinical rotations (n = 115)	
EEG	75 (65.2)
EMG	65 (56.5)
Neuroradiology	54 (47)
Neuropathology	52 (45.2)
Research	22 (19.1)
None	4 (12.2)
Other§	1 (0.9)
Supervisory roles during adult rotations (n = 116)	
Yes	44 (37.9)
No	72 (62.1)

Abbreviations:
EEG = Electroencephalography
EMG = Electromyography
* Rotations sorted from most to least frequently rotated on as reported by residents.
† Other inpatient rotations residents reported rotating on included night float and combined adult and pediatric consults.
‡ Other ambulatory rotations residents reported rotating on included behavioral neurology, concussion clinic, ethics, neurointerventional radiology, neurorehabilitation, and vestibular neurology.
§ Other nonclinical rotations were not specified by this resident.

> *"[The] differential and workup in adult neurology is vastly different than child neurology and much of this training does not translate to child neurology."*

> *"The expectations regarding my ability to manage comorbid medical problems (e.g., decompensated heart failure...) on the primary service did not contribute to my career goals as a child neurology [trainee] whatsoever."*

Delayed professional development was another concern for residents. Some residents experienced delays in establishing interests, mentorship, or research (n = 6), and others felt they had limited ability to develop autonomy during their adult training (n = 4):

> *"Spending 3rd year doing adult [neurology] definitely delayed my ability to rotate in areas of interest and develop pediatric focused research."*

> *"There is no opportunity for supervisory roles, very little autonomy is granted to the residents (in any training year), and we rarely get to teach the medical students because we are so busy."*

Some residents reported feeling negativity surrounding their adult neurology training environment including lack of support (n = 10), education not being prioritized (n = 20), and the experience of emotional or physical isolation (n = 9):

> *"There were times when I felt I was used primarily as a body to fill in empty slots in coverage as opposed to receiving a targeted learning experience that would aid me as a future neurologist."*

> *"One significant change is the social isolation and being in a new environment with so many new people every month and different expectations from different attendings and seniors."*

Positive impressions

Some of the benefits of adult neurology training identified by residents included improving foundational and examination skills in neurology and areas within professional development. Specifically, residents felt that adult neurology experiences contributed the most to their education with regard to diagnosing and managing pediatric neurocritical care disease processes (mean survey score 4.1, with score of 1 indicating no contribution, score of 3 indicating moderate contribution, and score of 5 indicating strong contribution). Mean survey scores seemed to indicate a slight positive impact of adult training on development of autonomy (in contrast to some of our written survey responses), but it did not have a clearly positive impact on other areas of professional development (Table 4). There was a significant difference found in certain areas of professional development when comparing residents who took on senior roles during adult rotations with those who did not. Residents who had senior roles during adult rotations reported greater positive impact on development of teaching skills (mean scores 4.0 vs 3.4, P value <0.01, with score of 1 indicating strong negative impact, 3 indicating no impact, and 5 indicating strong positive impact) and preparation for supervisory roles (mean scores 3.8 vs 3.1, P value <0.01).

These findings were reflected in the narrative analysis as well. Some residents (n = 5) reported experiencing greater autonomy:

TABLE 3.
Identified Themes Categorized Into Training Structure and Residence Experience Themes*

Theme	*N* Resident Statements (%)
Training structure themes	
Too much adult neurology training time	44 (37.9)
Usefulness of specific rotations	
More outpatient and elective time	20 (17.2)
Consults more useful than inpatient floor rotations	11 (9.5)
Less inpatient time, overall	7 (6.0)
Less irrelevant outpatient and elective time	6 (5.2)
Adult training condensed or spread out	
Prefer adult neurology spread out	27 (23.3)
Prefer adult neurology condensed in PGY-3 year	10 (8.6)
Call burden too high	17 (14.7)
Resident experience themes	
Areas for improvement	
Training environment	
Education not a priority	20 (17.2)
Lack of support	10 (8.6)
Isolation	9 (7.8)
Relevance	
Adult neurology not relevant	26 (22.4)
Adult medicine not relevant	11 (9.5)
Safety and supervision	
Generally feeling unsafe	4 (3.4)
Lack of supervision	9 (7.8)
Difficult transition from pediatrics to adult medicine	10 (8.6)
Professional development	
Delayed professional development opportunities	6 (5.2)
Minimal autonomy	4 (3.4)
Positive experiences	
Increased foundational and knowledge skills in neurology	20 (17.2)
Increased autonomy	5 (4.3)
Inclusion/positive learning environment	9 (7.8)

* Themes were identified through review of participants' narrative responses to open-ended survey questions.

"Adult neurology rotations [were] the first time I felt I was exposed to true evidence-based medicine with logical thought processes and encouraged me to have my own autonomy and confidence in my reasoning."

Many residents (n = 20) reported benefit of adult training on developing foundational skills and knowledge:

"…even though the adult year is hard I do think it made me a better neurologist. I am often more comfortable with stroke, neurologic emergencies, and other systemic medical diseases because of the time I spent in adult neurology."

Certain residents also felt positively about the culture within adult neurology, emphasizing feelings of inclusion and being part of a team (n = 9).

Adult training structure experiences

The resident respondents reported on how the structure and requirements of the overall curriculum impacted their educational experience; 66.4% of residents (n = 75) felt that adult neurology training was too long, whereas 32.7% (n = 37) reported training time was just right, and 0.9% (n = 1) reported training time was not enough. In the narrative responses, some residents specifically commented on wanting to have more time for adult outpatient and elective rotations (n = 20), some felt that the call burden was too high (n = 17), whereas others commented on adult consult rotations being more useful than inpatient floor rotations (n = 11) and that less inpatient time was needed overall (n = 7).

Differences in the impact of adult training structure were examined further with comparisons between residents who had their adult training completed within one year and those who had their training spread out. Residents who completed 12 months of adult neurology in their PGY-3 year had significantly more negative survey scores on burnout, mood changes, work-life balance, and social well-being compared with residents who had adult training spread throughout residency (Table 4). Among residents who had adult training spread throughout residency, there were no significant differences found in survey scores in wellness and professional development domains among residents with less than six months, six to nine months, or more than nine months of adult rotations in the PGY-3 year. Although 58.9% of residents (n = 66) overall reported liking the format of their adult neurology training, only 47.8% of residents (n = 11) who did 12 months of adult training in their PGY-3 year compared with 62.1% of residents (n = 54) who had training spread out were happy with their training format. In addition, 82.6% of residents (n = 19) who did 12 months of adult training in their PGY-3 year felt that the length of adult training

TABLE 4.
Impact of Adult Training Format on Resident Wellness and Professional Development

Domain	Mean Scores*			*P* Value
	Overall	Format of Adult Training		
		12 Months in PGY-3 Year	12 Months Over PGY-3 to PGY-5 Years	
Resident wellness				
Personal wellness	2.4	2.0	2.4	>0.05
Burnout	2.0	1.6	2.1	0.01†
Mood changes	2.2	1.8	2.3	0.02†
Work-life balance	2.2	1.8	2.3	0.04†
Social well-being	2.4	1.8	2.6	<0.01†
Resilience	3.1	3.2	3.1	>0.05
Professional fulfilment	2.8	2.7	2.8	>0.05
Professional development				
Preparation for career	3.6	3.6	3.6	>0.05
Preparation for choosing a subspecialty	3.5	3.5	3.5	>0.05
Establishment of mentorship	3.2	3.2	3.2	>0.05
Preparation for research	3.1	3.1	3.1	>0.05
Preparation for supervisory roles	3.3	3.5	3.3	>0.05
Development of autonomy	3.9	4.2	3.8	>0.05
Development of teaching skills	3.6	3.5	3.6	>0.05

* Mean scores range from score of 1 indicating strong negative impact, score of 3 indicating no impact, and score of 5 indicating strong positive impact.
† Statistically significant results found on two-tailed *t* test when comparing scores of the two different adult training formats.

time was too much, compared with 61.8% of residents (n = 55) who had training spread out.

Residents who found benefit with completing 12 months of adult neurology training in their PGY-3 year reported:

> *"I liked having all my adult training in one year, rather than broken up into a few months per year, because it allowed for continuity and complete dedication to learning specific skills that I was working on in adult neurology."*

Residents who were dissatisfied with that format reported:

> *"More exposure to pediatric neurology early on may have made me feel better about the stresses of the adult neurology year. I was often frustrated that as a PGY-3, I still barely had exposure to the specialty that I had come to residency to learn…More of [pediatric neurology] interspersed into the adult year may have reduced my feeling of burnout."*

Residents who found benefit completing their adult neurology training throughout residency reported:

> *"I would have struggled tremendously with having all or most of PGY-3 year dedicated to Adult Neurology. Even with ~6 months of the year on "adult" services, I felt enough connection to Child Neurology to remain inspired, motivated, and invigorated. I also think that distributing adult neurology blocks through all three years allows for better (and more varied) learning opportunities… Additionally, rotations in PGY-4 and/or PGY-5 years allow for the possibility of assuming leadership roles, another valuable learning experience."*

Discussion

This study investigated the child neurology resident perspective concerning adult neurology training and identified several areas where program directors could consider making improvements. Overall, residents who had their adult rotations spread out over the three years were more likely to be satisfied with the format of their training than residents who had adult training only during the PGY-3 year. The majority of residents felt that the adult training time was too long, and they perceived this to have negative impacts on their professional development, including delaying exploration of areas of interest, establishing mentorship, and beginning research experiences. The study results did suggest some benefits of adult neurology training that have previously been reported in the literature, including development of autonomy and increasing foundational knowledge and skills in neurology.[3,8]

We found that adult neurology training had a negative impact on child neurology resident wellness, similar to what has been reported elsewhere. For example, a previous study of adult neurology resident and fellows found that 73% of 354 respondents experienced burnout.[9] Importantly, we found not only greater burnout but more negative effects on mood, work-life balance, and social well-being when child neurology residents trained for 12 consecutive months on adult rotations. It is important to note that this survey was administered in fall 2020, during the height of the coronavirus disease 2019 (COVID-19) pandemic, and in the context of increased knowledge and awareness of burnout in graduate medical education. It is likely that these findings align with national trends in burnout during this time, and also noteworthy that burnout symptoms were higher among those respondents completing 12 consecutive months.

Factors that likely detracted from resident wellness were evident in the qualitative themes. Some residents felt they were being placed in unsafe situations potentially related to both lack of adequate supervision and/or difficulty with the pediatrics to adult transition period. Some expressed a sense of social isolation and lack of support during adult training. Some residents felt burdened by rotations that were perceived as having little relevance to long-term career goals (e.g., managing adult medical co-morbidities on inpatient floor services), frequent calls, and the feeling of being used solely to fill gaps in adult scheduling without prioritizing education. Similar factors have been previously identified as influencing resident wellness, including autonomy, building competence, social relatedness, adequate sleep, and having time away from work.[10]

Overall, our results highlight various ways that adult training experiences can be improved within the current ACGME requirements. We found that spreading the adult rotations over the three years of training led to a higher satisfaction rate and lower burnout metrics. In addition, allowing for some pediatric rotations during the PGY-3 year could help address some of the concerns residents had about delayed professional development. Programs could consider increasing the use of nonclinical electives, such as neurophysiology, neuroradiology, and neuropathology, as allowed by the ACGME, to meet adult requirements. Only 45% to 65% of residents reported having these rotations during their adult training (Table 2). These nonclinical rotations could potentially include a mixture of adult and pediatric cases to increase their relevance. Presuming increased flexibility of these rotations, they could be scheduled during the PGY-4 or 5 years, which could allow for more pediatric rotations during the PGY-3 year. A possible limiting factor might be program location in a pediatric department within a separate children's hospital. For programs in pediatric departments, some financial or logistical barriers might exist to scheduling mixed adult/pediatric rotations.

Other areas that may warrant attention include improving feelings of resident safety and thoughtful curricular planning. Targeting increased supervision during the initial transition period from pediatric to adult rotations could be beneficial. Some residents also brought up specific ways to improve education, including increasing consult service time over floor service time, as well as re-evaluating outpatient rotations and prioritizing clinics that may have more overlap or relevance to the training child neurologist.

In addition, although residents felt they gained more autonomy during adult neurology training overall, residents who had supervisory roles had greater development of supervisory and teaching skills. Offering senior roles for residents while on adult rotations after the initial transition period may be another way to further professional development. Addressing these resident concerns would ideally contribute to improved resident wellness and satisfaction.

An additional implication of our findings, and motivation for making changes, involves recruiting and maintaining the child neurology workforce. Child neurology applicants are placing greater value on quality-of-life factors when choosing a residency program.[11]

This study was limited by its sample size, with an estimate of approximately 30% of all current child neurology residents responding to the survey. The true response rate may be higher, however, as we have no means to confirm whether program directors forwarded our survey. We also recognize the possibility of selection bias in this study, as personal attributes of respondents, such as interest in medical education or time available to complete the survey, may have impacted who chose to participate. In addition, this study was conducted early in the academic year, so responses could have varied based on timing of when the survey was administered. Responses also could have been impacted by which rotation the resident was on at the time of taking the survey and

what rotations they had yet to experience. Other external factors could have impacted response as well. For instance, the survey was distributed during the COVID-19 pandemic, which could have impacted rotation experiences and thus influenced survey responses. Regarding the qualitative analysis, we did not capture detailed, thick description of resident ideas and experiences (e.g., through in-depth interviews), so the depth of responses captured was limited. When detailing the numbers of narrative statements reported, some residents may have relayed their opinions via the quantitative portion of the survey and chosen not to add comments. Thus, our reported qualitative statement numbers may underestimate the percentage of residents who shared a particular perspective.

In conclusion, this study has comprehensively reported on the child neurology resident perspective on their adult neurology training, indicating an overall preference for reducing the number and distributing the scheduling of adult rotations over three years, and identifying numerous areas where change could be implemented to improve resident wellness, education, and professional development.

Supplementary data

Supplementary data related to this article can be found at https://doi.org/10.1016/j.pediatrneurol.2022.05.014.

References

1. ACGME program requirements for graduate medical education in child neurology. ACGME-approved focus revision: Feb 3 2020. Available at: https://www.acgme.org/globalassets/PFAssets/ProgramRequirements/185_ChildNeurology_2020_TCC.pdf?ver=2020-02-25-141113-677&ver=2020-02-25-141113-677. Accessed December 28, 2020.
2. Maski KP, Jeste SS, Darras BT. Child neurology: past, present, and future: part 2: present training structure. Neurology. 2010;74:e17–e19.
3. Schor NF. Adult neurology training during child neurology residency. Neurology. 2012;79:815–818.
4. Valencia I, Feist TB, Gilbert DL. Program director survey: attitudes regarding child neurology training and testing. Pediatr Neurol. 2015;57:17–21.
5. Gilbert DL, Horn PS, Kang PB, et al. Child neurology recruitment and training: views of residents and child neurologists from the 2015 AAP/CNS workforce survey. Pediatr Neurol. 2017;66:89–95.
6. Gilbert DL, Patterson MC, Pugh JA, Ridel KR, Reynolds TQ, Valencia I. Views of recently first-certified US child neurologists on their residency training. J Child Neurol. 2013;28:332–339.
7. Weisleder P. It is time to leave the wilderness: a commentary on Valencia et al.'s 'Program director survey: attitudes regarding child neurology training and testing'. Pediatr Neurol. 2016;57:3–4.
8. Bodensteiner J. Neurology training for the child neurologist. Semin Pediatr Neurol. 2011;18:66–68.
9. Levin KH, Shanafelt TD, Keran CM, et al. Burnout, career satisfaction, and well-being among US neurology residents and fellows in 2016. Neurology. 2017;89:492–501.
10. Raj KS. Well-being in residency: a systematic review. J Grad Med Educ. 2016;8:674–684.
11. Dixon SM, Binkley MM, Gospe Jr SM, Guerriero RM. Child neurology applicants place increasing emphasis on quality of life factors. Pediatr Neurol. 2021;114:42–46.