

# Early Career Experiences of Pediatricians Pursuing or Not Pursuing Fellowship Training

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## abstract

**BACKGROUND AND OBJECTIVES:** Choosing career paths can be difficult decisions for residents contemplating fellowship training. This study compares the experiences of early career pediatricians who did and did not pursue fellowships.

**METHODS:** We analyzed national, weighted data from pediatricians 8 to 10 years after residency ( $n = 842$ ). Work environment, work–life balance, and satisfaction were compared for pediatricians who had pursued fellowship training (fellowship trained) and those who did not pursue fellowship training (generalist trained). Logistic and linear regression examined the independent effects of fellowship training while controlling for demographic differences.

**RESULTS:** A total of 39% of the pediatricians (328/842) pursued fellowship training. The fellowship-trained group was less likely than the generalist-trained group to spend time in direct patient care and more likely to report learning opportunities in their work environment. This group was also more likely to report an income of  $\geq \$150\,000$ , although no difference was found when only full-time pediatricians were examined. Generalist-trained pediatricians were more likely to work  $< 50$  hours per week, have flexibility with their schedules, and be satisfied with time spent with their own children. Pediatricians in both the fellowship-trained and generalist-trained groups generally found their work to be rewarding and were satisfied with their lives.

**CONCLUSIONS:** Although residents need to consider important life and career differences when contemplating fellowship training and general care, pediatricians in both groups can achieve overall life and career satisfaction.

**WHAT'S KNOWN ON THIS SUBJECT:** Choosing career paths can be a difficult decision for residents contemplating fellowship training. Limited resources are available to residents to help guide their choices.

**WHAT THIS STUDY ADDS:** This article provides additional descriptions and insight into actual lifestyle and workplace environments for pediatric residents who choose fellowship training compared with those who do not.

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Choosing a career path can be difficult for residents contemplating fellowship training. Limited resources are available to provide guidance. Information exists on characteristics of residents who are more likely to choose fellowships and factors that might contribute to this decision, but missing information includes what happens in their work and life after fellowship.

Certain subgroups of pediatricians have been found to be more likely to pursue subspecialty training. Men, international medical school graduates, and residents from larger residency programs are more likely to undertake subspecialty training.<sup>1-4</sup> Other related factors include market forces, indebtedness, mentor specialty, and work hours or the availability of part-time positions.<sup>3-6</sup> Published research has directly asked pediatricians what led them to pursue or not pursue subspecialty training. Surveys of pediatric residents and early career pediatricians found that structured hours and lifestyle were important factors to those who planned to pursue a career in general pediatrics.<sup>2,7</sup> Interest in specific diseases and patient populations remained the most important factor in postresidency career choice for residents planning to pursue fellowships.<sup>8,9</sup>

In the current study, our goal is to learn more about what happens in the work and life of pediatricians after fellowship. We examine the work environment, learning and financial characteristics, work-life balance, and overall satisfaction among pediatricians early in their careers who did and did not pursue fellowship training.

## METHODS

The American Academy of Pediatrics (AAP) Pediatrician Life and Career Experience Study (PLACES) is a national, longitudinal study that tracks the job paths and lives of early

career pediatricians. In the current study, we only examined a single year of cross-sectional data from PLACES.<sup>10</sup> We analyzed data collected in 2012 from a cohort of pediatricians completing residency between 2002 and 2004 to better understand the differences in career satisfaction and lifestyle of early career pediatricians who did and did not pursue fellowships.

## PLACES Description and Participants

PLACES includes 2 cohorts of pediatricians: the 2002 to 2004 cohort, who completed residency training from a categorical pediatric or pediatric combined training program between the years 2002 and 2004, and the 2009 to 2011 cohort, who completed residency between the years 2009 and 2011.<sup>10</sup> Because many members of the 2009 to 2011 cohort were still in fellowship training at the time of the initial data collection, this article includes analyses from only the 2002 to 2004 cohort; therefore, the following description and participants pertain only to these PLACES participants.

Pediatricians were identified from an AAP database that includes all pediatricians who completed a US residency program, comprising both AAP members and nonmembers. An additional small group of pediatric surgical and other specialists were included based on membership in an AAP specialty section and having an age consistent with the cohort residency graduation years.<sup>10</sup>

Random samples of pediatricians were selected from the respective target pool and invited to participate in PLACES.<sup>10</sup> A total of 2495 pediatricians were contacted by mail and e-mail; 969 were interested in participating and completed the study intake survey. The intake survey was administered (December 2011–April 2012) as part of PLACES recruitment. The first main survey (Annual Survey 1) was conducted (May–August 2012) via e-mail and

mail ( $\geq 6$  requests), depending on participant preference. Among those who completed their intake survey, 901 (93%) completed Annual Survey 1. Participants received a \$20 Amazon gift card for completing Annual Survey 1.

For the current study, we used data from the intake survey and Annual Survey 1. Because our focus was on pediatrician choice to pursue subspecialty training, the small group of pediatricians who are surgical or other specialists and who did not train in a categorical or combined pediatrics residency program and pediatricians currently in fellowship training were excluded (final study sample size = 842). The study was approved by the AAP Institutional Review Board.

## Survey Content

Steps taken to develop PLACES survey content included content prioritization by a project advisory committee; literature review to identify related, existing questions; and cognitive interviews and pilot tests to ensure that questions were interpreted correctly by respondents.<sup>10</sup> Participants completed a 2-page demographic survey and Annual Survey 1, a 12-page survey with many questions adapted from other physician studies,<sup>11-35</sup> including the Physician Worklife Study,<sup>28,33</sup> the Minimizing Error, Maximizing Outcome study,<sup>23</sup> the Jefferson Scale of Lifelong Learning,<sup>11,35</sup> a study of female emergency physicians,<sup>17</sup> national surveys,<sup>12,22,27</sup> and the AAP Periodic Survey of Fellows.<sup>15</sup>

## Measure of Fellowship Training

The 842 pediatricians in this study were categorized into 2 groups, fellowship trained and generalist trained (did not pursue fellowship training), based on whether they reported that they previously had a fellowship position after residency or were board certified or board eligible in a subspecialty. The

fellowship-trained group is based on pediatricians' participation in fellowship training rather than their current position (eg, generalist or subspecialist). Data were examined for work and life differences between those who pursued fellowship and those who did not, referred to as the fellowship-trained and generalist-trained groups for consistency purposes.

### Analysis Weights

Study participants were compared with the target sample and with data from the American Board of Pediatrics Web site, through *t* tests and 1-sample proportion tests. Participants were significantly more likely to be female, AAP members, and graduates of US medical schools.<sup>10</sup> We calculated nonresponse and poststratification weights<sup>36</sup> and applied a combined weight to all analyses presented in this article.

### Data Analysis

Data were analyzed for work and life differences between the fellowship-trained and generalist-trained groups. All comparisons represent differences between these 2 groups. We used  $\chi^2$  and *t* tests to compare demographic characteristics, work environment, learning characteristics, work-life balance, financial characteristics, and satisfaction between fellowship-trained and generalist-trained pediatricians. For the continuous outcome variables, we dichotomized responses based on the distribution (eg, mean), and for the categorical variables we collapsed the first 2 responses of each scale (eg, *strongly agree* and *agree*) and compared them with the other responses (eg, *strongly disagree* and *disagree*).

Multivariable logistic and linear regression models examined the independent association of fellowship training with work environment, learning characteristics, work-life balance, financial characteristics, and satisfaction while controlling for demographic characteristics (gender,

race, marriage, children, and medical school location). Adjusted odds ratios (aORs), parameter estimates, and 95% confidence intervals (CIs) are presented to indicate the magnitude of the independent associations. The number of cases in each analysis varied slightly because of missing values for specific questions. All data presented, including numbers, are weighted as described earlier;  $P \leq .05$  was used for all analyses.

## RESULTS

Of the 842 study participants, 39.0% reported that they participated in fellowship training (fellowship-trained group). The most common subspecialties that fellowship-trained pediatricians were either board certified or board eligible in were neonatal-perinatal medicine (15.4%), hematology-oncology (15.3%), gastroenterology (9.2%), critical care (8.3%), cardiology (7.4%), emergency medicine (6.8%), allergy (5.5%), pulmonology (4.6%), endocrinology (4.4%), developmental-behavioral pediatrics (3.8%), infectious disease (3.8%), nephrology (3.5%), and genetics (3.4%).

### Demographic Characteristics

Sixty-three percent of the study pediatricians were women. The majority were white, non-Hispanic (62.5%). Most (83.9%) have children. At recruitment half of the pediatricians were not members of the AAP.

Pediatrician demographics varied between the fellowship-trained and generalist-trained groups (Table 1). The largest difference showed there were more women in the generalist-trained group than in the fellowship-trained group (68.5% vs 53.0%,  $P < .001$ ).

### Work Environment

The fellowship-trained group had >4 times the odds (aOR = 4.62; 95% CI = 3.32 to 6.42) of the generalist-trained group of working  $\geq 50$  hours per week (Table 2). Fellowship-trained pediatricians were less likely to work part-time hours and in suburban areas ( $P < .001$ ) and more likely to spend time in research, administration, and teaching ( $P < .001$ ). They also reported a lower percentage of time in a typical work week spent on direct patient care than those in the generalist-trained group (19.55 fewer percentage points, 95% CI = -22.84 to -16.25).

When asked about the proportion of their time that is spent in general pediatric and subspecialty care, most fellowship-trained pediatricians (77.6%) reported spending at least half of their clinical time in subspecialty care, with 23.4% spending at least a portion of their time in general pediatric care. Most of the pediatricians in the generalist-trained group (90.0%) reported spending at least half of their clinical care time in general pediatric care, with 4.9% spending at least a portion of their time in subspecialty care.

**TABLE 1** Pediatrician Demographics: Fellowship-Trained Versus Generalist-Trained

	Fellowship-Trained, <i>n</i> = 328	Generalist-Trained, <i>n</i> = 514	<i>P</i>
Women, %	53.0	68.5	<.001
Race, %			<.01
White, non-Hispanic	65.9	60.3	
Asian	20.4	18.7	
Hispanic	9.8	10.3	
Black or African American	3.0	6.0	
Other	0.9	4.7	
Married, %	87.2	91.5	.046
Have children, %	80.8	85.8	.053
Medical school outside US (international medical school graduates), %	21.3	19.1	.420

**TABLE 2** Work Environment: Fellowship Trained Versus Generalist Trained

	Fellowship Trained, n = 322	Generalist Trained, n = 498	aOR, 95% CI
Work ≥50 h per week, %	60.6	23.4*	4.62, 3.32 to 6.42**
Work part time, %	13.7	33.3*	0.34, 0.22 to 0.53**
Work in suburban area, %	18.1	51.1*	0.21, 0.15 to 0.30**
Ever on call, %	83.4	78.1	1.41, 0.97 to 2.06
<7 h of sleep per 24-h period	30.2	25.9	1.20, 0.87 to 1.65
	Fellowship Trained, n = 322	Generalist Trained, n = 498	Parameter Estimate, 95% CI
Time spent in direct patient care, mean %	67.9	87.6*	-19.55, -22.84 to -16.25**
Time spent in research, mean %	14.2	0.7*	13.46, 11.37 to 15.55**
Time spent in administration, mean %	10.5	7.1*	3.16, 1.45 to 4.87**
Time spent in medical teaching, mean %	5.8	2.6*	3.16, 2.12 to 4.21**
Time spent in other activities, mean %	1.6	2.0	-0.18, -1.80 to 1.45

Each model controls for the fellowship group as well as gender, race, married, have children, and medical school location. \* $\chi^2 P \leq .05$ ; \*\*regression  $P \leq .05$ .

### Learning Characteristics

Fellowship-trained pediatricians were significantly more likely than the generalist group to strongly agree or agree that they routinely participate in continuing medical education (CME), that they routinely communicate with colleagues to gain new knowledge and skills, and that their current work allows them adequate opportunity to gain new knowledge and skills,  $P < .001$  (Table 3). All pediatricians were equally likely to make time for self-directed learning.

### Work-Life Balance

Fellowship-trained pediatricians were significantly less likely to agree that their schedule allows the flexibility needed to lead a balanced lifestyle (aOR = 0.64; 95% CI = 0.48 to 0.86) and to be satisfied with the amount of time they have to spend with their

spouse, partner, or significant other (aOR = 0.68; 95% CI = 0.51 to 0.92) or their own children (aOR = 0.62; 95% CI = 0.46 to 0.85) (Table 4). They were more likely to work in a somewhat hectic or hectic/chaotic work setting (aOR = 1.88; 95% CI = 1.40 to 2.53). Pediatricians in both groups were equally likely to agree that their colleagues support their efforts to balance personal and work responsibilities.

### Financial Characteristics

Fellowship-trained and generalist-trained pediatricians reported similar amounts of education debt at completion of residency (\$80 815 and \$80 762, respectively) and at the time of being surveyed in 2012 (\$40 084 and \$38 650, respectively) (Table 5). Fellowship-trained pediatricians were more likely than the generalist group to report an annual income of  $\geq$ \$150 000 (66.6% vs 53.3%,  $P < .001$ ). This

difference disappeared when part-time pediatricians were excluded (Fig 1).

### Satisfaction

More than 90% of pediatricians in both the fellowship-trained group and the generalist-trained group were satisfied with their training during residency (Table 5). The majority in both groups also found their present work to be personally rewarding and were satisfied with their life as a whole. Fellowship-trained and generalist-trained pediatricians were equally likely to report satisfaction with their residency training, present work, and life as a whole.

### DISCUSSION

Using data from the AAP PLACES, collected in 2012, we found that 39% of pediatricians who graduated residency between 2002 and 2004 pursued fellowship training. Fellowship-trained pediatricians were more likely than generalist-trained pediatricians to report working more hours per week, spending their time in research, administration, and medical teaching, and having opportunities at work and with colleagues to gain new knowledge and skills. Generalist-trained pediatricians were more likely to spend their time in direct patient care and have flexible work schedules and time with their spouse or partner and children. Most fellowship-trained and generalist-trained pediatricians were

**TABLE 3** Learning Characteristics: Fellowship Trained Versus Generalist Trained

	Fellowship Trained, n = 328	Generalist Trained, n = 511	aOR, 95% CI
I routinely communicate with colleagues to gain new knowledge and skills, % strongly agree or agree <sup>a</sup>	95.7	84.9*	4.02, 2.25 to 7.26**
I routinely participate in continuing medical education, % strongly agree or agree <sup>a</sup>	89.6	83.1*	1.67, 1.08 to 2.57**
My current work allows me adequate opportunity to gain new knowledge and skills <sup>a</sup>	84.0	74.6*	1.62, 1.12 to 2.34**
I routinely make time for self-directed learning, % strongly agree or agree <sup>a</sup>	75.3	71.0	1.23, 0.89 to 1.71

Each model controls for the fellowship group as well as gender, race, married, have children, and medical school location.

\* $\chi^2 P \leq .05$ ; \*\*regression  $P \leq .05$ .

<sup>a</sup> 4-point scale responses dichotomized: strongly agree/agree versus disagree/strongly disagree.

**TABLE 4** Work–Life Balance: Fellowship Trained Versus Generalist Trained

	Fellowship Trained, <i>n</i> = 328	Generalist Trained, <i>n</i> = 512	aOR, 95% CI
Colleagues support efforts to balance personal and work responsibilities, % agree or strongly agree <sup>a</sup>	71.1	67.9	1.10, 0.80 to 1.50
Schedule allows flexibility to lead balanced life, % agree or strongly agree <sup>a</sup>	53.8	64.3*	0.64, 0.48 to 0.86**
Busyness of work setting, % somewhat hectic or hectic/chaotic <sup>b</sup>	52.8	38.0*	1.88, 1.40 to 2.53**
Amount of time to spend with own children, % satisfied or very satisfied <sup>c</sup>	46.7	58.8*	0.62, 0.46 to 0.85**
Amount of time to spend with spouse, partner, or significant other, % satisfied or very satisfied <sup>c</sup>	45.6	52.6	0.68, 0.51 to 0.92**

Each model controls for the fellowship group as well as gender, race, married, have children, and medical school location. \* $\chi^2 P \leq .05$ ; \*\*regression  $P \leq .05$ .

<sup>a</sup> 5-point scale responses dichotomized: strongly agree/agree versus neither agree nor disagree/disagree/strongly disagree.

<sup>b</sup> 5-point scale responses dichotomized: hectic, chaotic/somewhat hectic versus busy, but reasonable/somewhat calm/calm.

<sup>c</sup> 5-point scale responses dichotomized: very satisfied/satisfied versus neutral/dissatisfied/very dissatisfied.

satisfied with their residency training, present work, and life as a whole.

The results of our study are unique and complement existing literature on predictors and motivators for pursuing fellowship training. We found that men were more likely than women to pursue fellowships, as previously reported,<sup>1,2</sup> but we did not find any significant differences for medical school location. Unique findings from the current study focus on work environment, learning, additional financial characteristics, work–life balance, and overall satisfaction with residents' career choices. Pediatricians choosing to pursue fellowship are more likely to work  $\geq 50$  hours per week. Even

several years after fellowship training is complete, they have  $>4$  times the odds of working more hours. Similarly, they are less likely to work part-time. A 2010 study of pediatricians of various ages found an increase in part-time work from 2000 to 2006 for both generalists and subspecialists, with 26% of generalists and 17% of subspecialists reporting part-time positions in 2006.<sup>37</sup> In our cohort limited to early career fellowship-trained pediatricians, somewhat less, 14%, reported part-time positions, and an increasing number of generalist-trained pediatricians work part-time (33%) compared with the broader cohort in the earlier study.<sup>37</sup> The

PLACES study will continue to follow this group of early career pediatricians over time to better define changes in full- or part-time work status over both generalist-trained and subspecialist-trained careers.

Pediatricians who are fellowship-trained are more likely to routinely participate in CME and communicate with colleagues to gain new knowledge and skills. Working in suburban practices and working part-time might reduce the opportunities that generalist-trained pediatricians have for collegial interactions and regular CME participation. Many fellowship-trained pediatricians are more likely to practice in academic or hospital settings, perhaps providing more accessible educational opportunities. It may also be that learning new procedures is more important for some subspecialties. Although CME opportunities are generally plentiful even in the private practice setting, generalist-trained pediatricians should be aware of potential challenges for continued education after residency.

Income level varied between the fellowship-trained and generalist-trained groups when part-time pediatricians were included in the analyses. When only full-time pediatricians were examined, we did not find a difference. Rochlin and Simon<sup>38</sup> examined the financial impact of fellowship training in

**TABLE 5** Financial and Satisfaction: Fellowship Trained Versus Generalist Trained

	Fellowship Trained, <i>n</i> = 322	Generalist Trained, <i>n</i> = 507	Parameter Estimate, 95% CI
Mean educational debt at completion of residency, \$ <sup>a</sup>	\$80 815	\$80 762	1552, –9603 to 12 708
Mean educational debt at time of 2012 survey, \$ <sup>a</sup>	\$40 084	\$38 650	1998, –5818 to 9815
	Fellowship Trained, <i>n</i> = 328	Generalist Trained, <i>n</i> = 513	aOR, 95% CI
Satisfied with training during residency, % very or somewhat satisfied <sup>b</sup>	93.6	91.4	1.39, 0.80 to 2.42
I find my present work personally rewarding, % strongly agree or agree <sup>c</sup>	89.6	85.4	1.45, 0.93 to 2.28
Satisfied with life as a whole, % completely or very satisfied <sup>d</sup>	69.8	74.3	0.79, 0.57 to 1.09

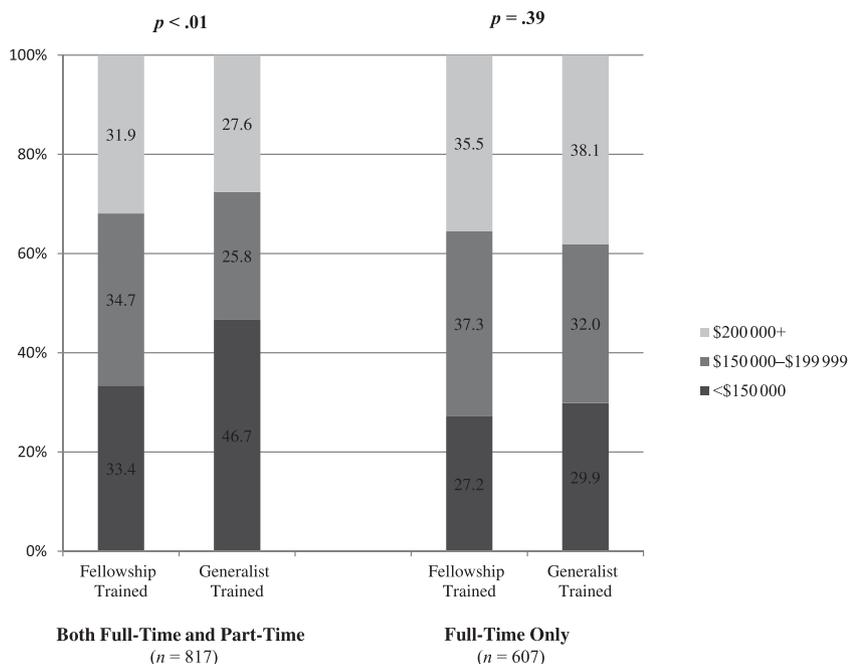
Each model controls for the fellowship group as well as gender, race, married, have children, and medical school location.

<sup>a</sup> Includes some pediatricians without any debt (\$0).

<sup>b</sup> 5-point scale responses dichotomized: very satisfied/somewhat satisfied versus neither satisfied nor unsatisfied/somewhat unsatisfied/very unsatisfied.

<sup>c</sup> 5-point scale responses dichotomized: strongly agree/agree versus neither agree nor disagree/disagree/strongly disagree.

<sup>d</sup> 5-point scale responses dichotomized: completely satisfied/very satisfied versus somewhat satisfied/not very satisfied/not at all satisfied.



**FIGURE 1**

PLACES pediatrician income categories by fellowship group. *P* value represents  $\chi^2$  result for comparison of income group and fellowship group.

pediatrics and reported that fellowships in cardiology, critical care, and neonatology provided greater financial returns than not pursuing fellowships but that training in other areas did not yield such results.

Pediatric residents choosing whether to pursue fellowship training need information on their future work environment and responsibilities to make informed decisions. The experience of PLACES participants shows that pediatricians in the fellowship-trained and generalist-trained groups reported that most of their direct patient care time was in subspecialty care and general pediatric care, respectively. However, almost a quarter of those in the fellowship-trained group reported that at least a portion of their time was spent in general pediatric care. The fellowship-trained group is a diverse group, including pediatricians who practice in a variety of hospital-based and clinic-based subspecialties. From the PLACES survey we cannot specify whether the general pediatric care reported is provided in the course of

a subspecialty practice or as a separate position (eg, a neonatologist who provides some general pediatric care in a NICU follow-up clinic as part of his or her subspecialty work vs a neonatologist who sees general pediatric patients in a pediatric clinic setting 1 day a week).

Although our data provide some indication to residents of differences that emerge between those who do and do not pursue fellowships, future analyses might focus on the roles various subspecialists play in general pediatric care and which subspecialties contribute the most time to that type of care.

Studies have reported various motivators for pursuing careers as generalists, including market forces, indebtedness, and work hours or availability of part-time positions.<sup>3,5,6</sup> A study of graduating pediatric residents found that higher debt may lead residents to choose careers not requiring fellowship training, such as primary care or hospital medicine.<sup>3</sup> A recent study of general pediatricians found that only 9% cited

consideration of debt as the most important factor in their choice of positions after residency.<sup>7</sup> There was no difference in educational debt by fellowship group for pediatricians in our study, but debt has risen substantially over the last several years<sup>3,14</sup> and could be an important piece of information to residents who are concerned about the financial implications of choosing additional fellowship training.

Structured hours and lifestyle was previously found to be a leading factor in career choice, particularly among female residents and those who were further along in residency training.<sup>2</sup> In the current study, generalist-trained pediatricians (those who never pursued fellowship training) reported more flexible schedules and greater satisfaction with time to spend with their spouse, partner, or significant other and children. Achieving an acceptable work-life balance can be a major consideration of pediatric residents contemplating career choices, and fellowship training programs may need to reexamine supporting efforts to balance fellows' work and personal lives.

Freed et al<sup>9</sup> reported that the majority of pediatric residents choosing fellowship training considered their residency training to be adequate preparation for fellowship. Other research found that most residents (94%) graduating between 2003 and 2009 would choose a pediatric residency again, if they had a choice, and the majority rated their residency as very good or excellent in preparing them for primary care practice and fellowship training.<sup>39</sup> In the current study most pediatricians (in both fellowship-trained and generalist-trained groups) reported being satisfied with training they received during residency.

There are limitations to the current study. All data are self-reported by the pediatricians. Some selection bias

in terms of initial participation in the study exists, but we adjusted for the bias by applying weights to all analyses. Our fellowship-trained group is based on the pursuit of fellowship and not completion of fellowship or current position. We found that some pediatricians who pursued fellowship are not exclusively practicing their subspecialty and that pediatricians who did not pursue fellowship are at times practicing subspecialty care. Moreover, many different subspecialties were combined to form a single group. It is impossible from the study design to determine what changes may be the direct result of the training experience.

## CONCLUSIONS

Although there are significant differences in work environment, educational pursuits, financial characteristics, and work-life balance for pediatricians who choose fellowship and those who do not, a majority of pediatricians achieve overall life and career satisfaction. The differences could be considered by pediatric residents considering career options and by those advising and mentoring residents. The longitudinal nature of PLACES will allow additional examination and insight into career and life experiences of those who pursued fellowship compared with those who did not across time.

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## ABBREVIATIONS

AAP: American Academy of Pediatrics  
aOR: adjusted odds ratio  
CI: confidence interval  
CME: continuing medical education  
PLACES: Pediatrician Life and Career Experience Study

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