

# Prolonged Impact of COVID-19 on Job Prospects and Training for Pediatric Gastroenterology Fellows in North America

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**Objectives:** As the COVID-19 pandemic persisted into the 2020 to 2021 academic year, there was a continued effect on graduate medical education trainees and graduating trainee job attainment. Our survey aims to investigate how the pandemic has continued to affect job search and attainment for pediatric gastroenterology fellows as well as to re-evaluate the pandemic's impact on pediatric gastroenterology fellow educational experiences.

**Methods:** An anonymous survey was distributed to all North American pediatric gastroenterology fellows from May to June 2021. Survey questions included topics related to job search and fellowship training and were tailored to respondent year of training.

**Results:** Of 453 pediatric gastroenterology fellows in the 2020 to 2021 academic year, 158 fellows (35%) responded to the survey. Of graduating fellow respondents with job contracts, 74% reported willingness to make compromises in their job search, 76% reported accepting academic positions that were primary clinical, and 42% estimated staying at their accepted job for less than 5 years. When asked about the impact of COVID-19 on various aspects of fellowship education, a negative impact was reported in the following areas: 76% in research, 94% in clinical experience, 73% in procedural skills, and 84% in didactics.

**Conclusion:** The COVID-19 pandemic continues to make a significant impact on pediatric gastroenterology fellowship education and the job attainment process. Regarding accepted job positions, we found substantial willingness to compromise, a shorter duration to stay at the job than expected, and

## What Is Known

- Previous surveys have found a negative impact of the COVID-19 pandemic on graduate medical education with adaptations made in telehealth and online didactic learning.
- Previous surveys have identified a major role of the pandemic in obtaining jobs after medical training.

## What Is New

- Graduating pediatric gastroenterology fellows are willing to make significant compromises in jobs they accept which raises concern for job satisfaction.
- There is a low proportion of graduating pediatric gastroenterology fellows going into research-focused positions, which can impact future pediatric gastroenterology research.
- The COVID-19 pandemic continues to impact graduate medical education in 2021.

minimal research focus. This raises concern regarding job preparedness and satisfaction as fellows complete their medical training.

**Key Words:** graduate medical education, Pediatric Gastroenterology, job search, compromise, research, COVID-19

## INTRODUCTION

The SARS-CoV2 virus and subsequent COVID-19 pandemic has continued to impact graduate medical education in North America, including pediatric gastroenterology (GI) training programs.

Pediatric GI fellows in North America typically complete 3 years of training in the United States and 2 years in Canada and Mexico in inpatient and outpatient clinical care, research, and endoscopic procedures. The North American Society for Pediatric Gastroenterology, Hepatology, and Nutrition (NASPGHAN) training committee previously surveyed pediatric GI program directors and described a transition to telehealth and virtual didactics in order to assist in fellow education despite the pandemic halts on in-person activities.<sup>1</sup> A 2020 survey of NASPGHAN fellows revealed the initial consequences of the COVID-19 pandemic on fellowship clinical experiences, research, and procedures.<sup>2</sup> This survey found a substantial influence of the early pandemic on job attainment with notably 5 graduating fellows reporting rescinded job offers and half of first- and second-year fellows reporting a high level of concern in finding a job.<sup>2</sup> The European Society for Pediatric Gastroenterology, Hepatology, and Nutrition trainee survey in 2020 additionally demonstrated the impact in clinical practice, mental health, quality of care provided, and fellowship/trainee experience.<sup>3</sup> In all, these surveys have highlighted the initial effects of the COVID-19 pandemic; however, the presence of continued effects has been understudied.

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With the COVID-19 pandemic ongoing, a follow-up survey of NASPGHAN fellows in the 2020–2021 academic year was performed. The primary aim of this survey was to investigate how job search and attainment for NASPGHAN fellows has changed as the COVID-19 pandemic has continued. The secondary aim was to re-evaluate the COVID-19 pandemic impact on North American pediatric GI fellowship educational experiences.

## METHODS

An anonymous electronic survey was designed by the NASPGHAN Fellows Committee. The previous NASPGHAN 2020 fellows survey was reviewed and updated to target more pertinent concepts for NASPGHAN fellows in the evolving COVID-19 pandemic.<sup>2</sup> The final survey included 31 total questions. Compared to the 2020 survey, there were 11 questions that remained the same, 3 questions that had wording adjusted for clarity or updated year of survey, 7 questions that had additional answer choices to gather more information, and 10 new questions to further address our survey aims. There were 10 questions removed from the previous 2020 survey that were not relevant to our survey aims (Supplemental Digital Content <http://links.lww.com/PG9/A92>).

Survey questions were tailored for the respondents' year of training. There were 11 questions that were the same for all fellows. There were 2 specific questions for first- and second-year fellows and 6–8 specific questions for third- and fourth-year fellows depending on advanced fellowship training and job contract status. Question answer format included single choice, multiple choices, Likert scales, and free text. Likert scales were from 1 to 5, where 1 represented no impact and 5 represented highly impacted activity/item. Geographical location was determined based on the Census Bureau divided regions of the United States (see Supplemental Digital Content Figure 1; <http://links.lww.com/PG9/A93>).

All NASPGHAN fellows were invited to participate in the survey. Distribution of the survey was by email with embedded web link for the survey in Google Forms (Google LLC, Mountain View, CA). The survey was sent on May 13, 2021. A single reminder email was sent May 20, 2021 and the survey closed on June 21, 2021.

Data are reported as frequency (percentages) when applicable with free text answers grouped into categories by the authors. Comparisons between groups were performed using  $\chi^2$  test. A *P* value of  $<0.05$  was considered significant for all inference testing. All statistical analyses were performed using R program (version 4.1.0).

The study was reviewed and granted exempt status by the institutional review board at Orlando Health Arnold Palmer Hospital for Children, Orlando, FL.

## RESULTS

Of 453 total NASPGHAN fellows in the 2020–2021 academic year, 158 fellows (35%) responded to the survey. Of the total respondents, 42 (27%) were first-year fellows, 57 (36%) were second-year fellows, 55 (35%) were third-year fellows, and 4 (2%) were fourth-year fellows (Table 1). Response rates were 28% for first-year fellows, 38% for second-year fellows, 47% for third-year fellows, and 20% for fourth-year fellows. Geographically, there were 145 respondents from United States training programs representing 28 different states, 10 respondents from Canadian training programs, and 2 respondents from Mexican training programs.

### Impact on Job Outlook and Attainment

When asked about their concern for finding a job upon graduation, first- and second-year fellow respondents reported a high level of concern 49% of the time (see Supplemental Digital Content Figure 1; <http://links.lww.com/PG9/A93>). Of the total number of third- and fourth-year fellow respondents (*N* = 59), 50 (85%) felt that the

**TABLE 1.** Response rate to initial and follow-up surveys by level of training and training region

	Respondents/total of NASPGHAN fellows (%)		<i>P</i>
	2019–2020	2020–2021	
<b>Overall</b>	145/434 (33%)	158/442 (36%)	0.48
<b>Year of training</b>			
First	34/150 (23%)	42/156 (27%)	0.43
Second	58/155 (37%)	57/151 (38%)	>0.99
Third	43/108 (40%)	55/114 (48%)	0.23
Fourth	10/21 (48%)	4/21 (19%)	0.10
<b>Region of training*</b>			
Northeast	35/93 (38%)	30/91 (33%)	0.54
Midwest	38/92 (41%)	49/98 (50%)	0.25
South	39/104 (38%)	43/110 (39%)	0.89
West	23/52 (44%)	23/55 (41%)	0.85
Canada	4/34 (12%)	10/26 (38%)	0.03
Mexico	5/58 (9%)	2/62 (3%)	0.26

\*One fellow within the USA did not specify region for 2020–2021.

Differences between respondents from the 2019–2020 and 2020–2021 academic years were evaluated. As noted, the only significant difference in response rate between the 2 academic years was in Canadian trainees (*P* = 0.03).

pandemic impacted their job search (see Supplemental Digital Content Figure 2; <http://links.lww.com/PG9/A93>).

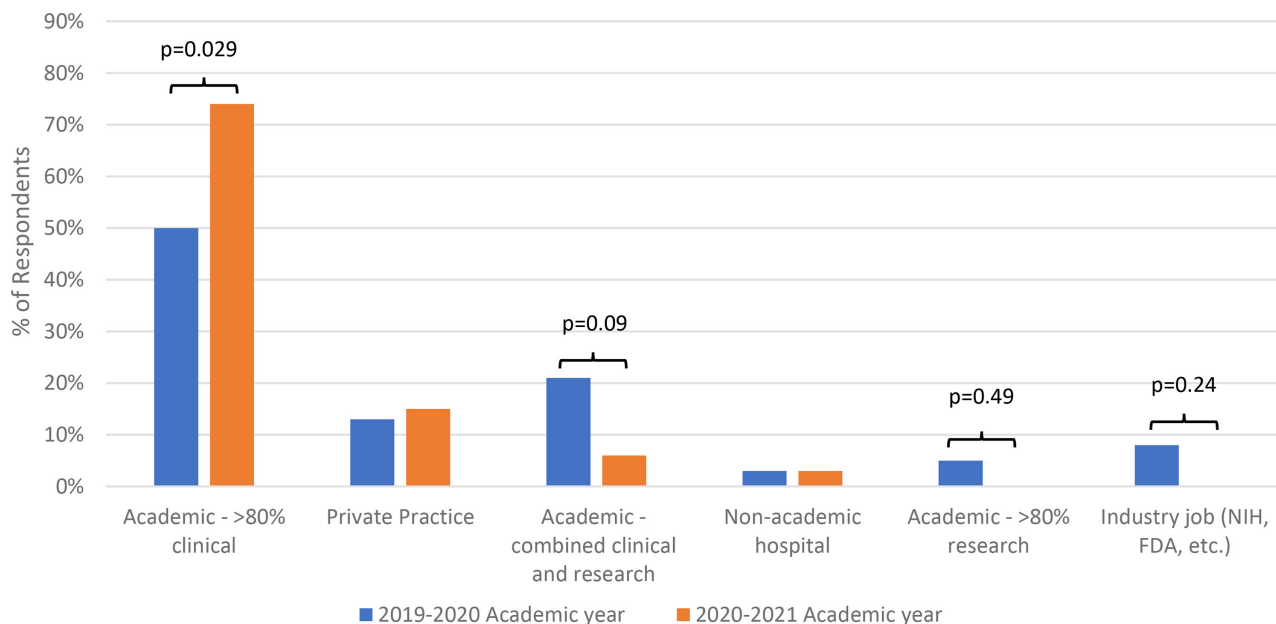
Of the third-year fellow respondents (*N* = 55), 19 (35%) were planning on advanced training in a fourth fellowship year. Four of 19 (21%) stated they decided to pursue an advanced fellowship training year primarily due to the pandemic.

Of the graduating fellow respondents (*N* = 40), 34 (85%) had a signed job contract. Of these respondents with signed job contracts, 26 (76%) were going into academic medicine that was >80% clinical. There were 5 (15%) respondents going into private practice. Two (6%) respondents were going into academic medicine, which was combined clinical and research. One (3%) respondent accepted a job in a nonacademic hospital. No fellow respondents accepted jobs in academic medicine with >80% research time or a nonclinical job (e.g., pharmaceutical industry, government) (Fig. 1).

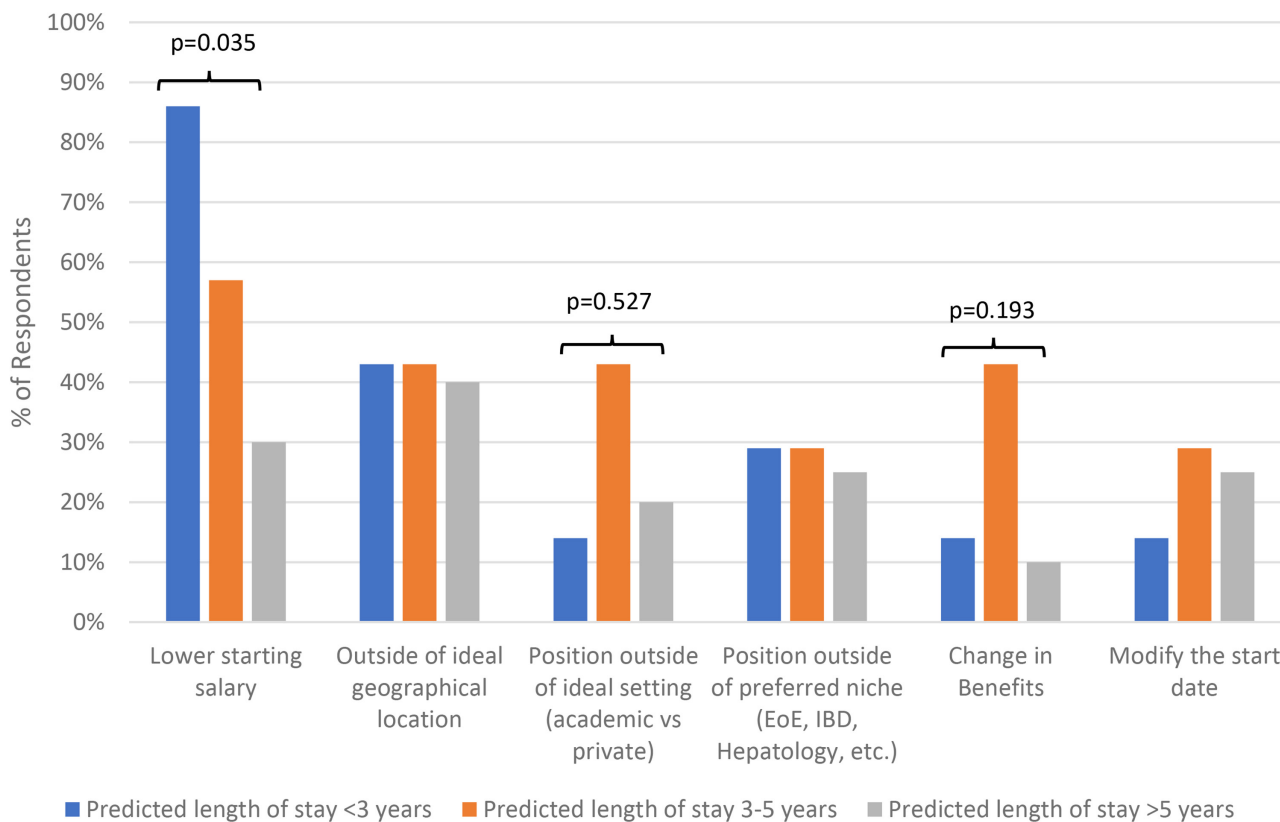
Of the respondents with job contracts, 25 (74%) stated that the pandemic affected their willingness to make compromises in their job search. Respondents reported willingness to accept a lower starting salary (47%), a different geographical location than preferred (41%), a position outside of ideal setting—academic versus private practice (24%), and a clinical position outside of preferred niche (26%). Of the 34 respondents with signed job contracts, 20 (58%) predicted that they would likely stay at their future job for at least 5 years, 7 (21%) predicted staying at the job for 3–5 years, and 7 (21%) predicted length of stay at the job was less than 3 years. Respondents whose predicted length of stay in the position was less than 3 years, were more willing to accept a lower salary (*P* = 0.04). No other compromises were associated with differences in predicted length of stay at their job (Fig. 2).

### Impact on Clinical Training: Didactic Teaching, Clinical Experience, and Research

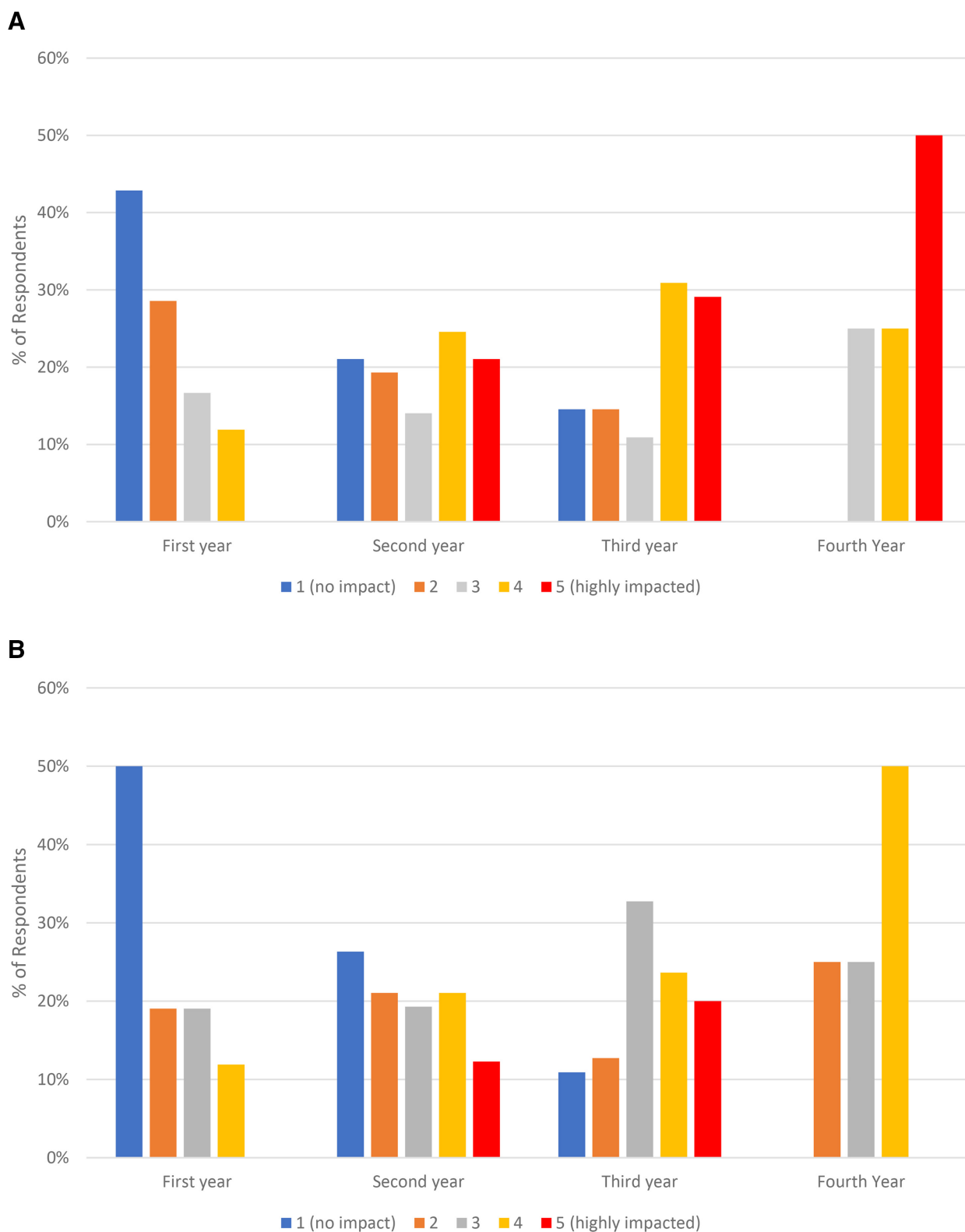
Of all respondents, 76% reported that the pandemic had at least some negative impact on their research and 73% reported a negative impact on the ability to present/publish their research (Fig. 3A,B). A negative impact in outpatient/inpatient clinical learning experiences was reported in 94% (Supplemental Digital Content Figure 3;



**FIGURE 1.** Types of Jobs accepted by graduating Pediatric GI fellows. There was a significant difference in the Academic >80% clinical time job type accepted when comparing the 2 academic years ( $P = 0.03$ ).



**FIGURE 2.** Potential job compromises and predicted length of stay in first attending position. There was a significant difference from each of the predicted length of stay in relation to the willingness to compromise on lower salary ( $P = 0.04$ ). No other comparisons were shown to be statistically different.



**FIGURE 3.** Impact of COVID-19 pandemic on (A) GI fellow research and (B) GI fellows’ ability to publish and present research.

<http://links.lww.com/PG9/A93>). The majority of respondents, 73%, felt that their confidence in procedural skills was negatively impacted (Supplemental Digital Content Figure 4; <http://links.lww.com/PG9/A93>).

A negative impact in didactic learning was reported by 84% of respondents (Supplemental Digital Content Figure 5; <http://links.lww.com/PG9/A93>).

## DISCUSSION

Since the COVID-19 pandemic began in early 2020, many studies have examined the initial impact of the pandemic on the health care field and within graduate medical education.<sup>1-7</sup> This cross-sectional survey study of NASPGHAN fellows has highlighted the continued effects of the COVID-19 pandemic and how it has changed the job attainment process for graduating trainees, in particular their willingness to make substantial compromises in their first job position. Further, we found that many trainees anticipated to stay at their first positions for a short duration. Notably, there were few primary research positions accepted. Finally, we demonstrated that the pandemic continues to impact the clinical, research, and procedural training experiences for fellows.

We evaluated the compromises that graduating fellows were willing to make in their job search process. Nearly half of respondents were willing to accept a lower salary and about a third of respondents were willing to move to a different geographical location than originally preferred. We believe that this substantial willingness to compromise was due to the limited job opportunities available in the setting of national hiring freezes.<sup>8</sup> With such uncertainty in finding a job during a pandemic, graduating fellows likely had to prioritize finding and securing a job over finding their “dream” job. As a result, fellows were potentially less likely to take the time to begin a more drawn-out negotiation process for their job. As fellows near the end of their prolonged training from medical school, residency, and to fellowship, these jobs may not be those that they eagerly anticipated and could represent a significant disappointment.

We anticipate that if the 2020–2021 graduating fellows made significant concessions in their faculty jobs, there may be an impact on future job satisfaction. It is possible that our survey respondents anticipated this as well, as nearly a quarter of respondents predicted they would likely stay in their first position for less than 3 years. While we do not have data from the previous academic year for comparison, this could potentially be problematic for the future. First, this may reflect how committed our respondents will be in their accepted position. Second, there may be a cascade of junior faculty searching for new positions in a few years, increasing job turnover and adding to the applicant pool. Finally, respondents could receive limited mentoring before switching positions.

NASPGHAN fellows can complete a fourth-year advanced position in liver transplant, nutrition, inflammatory bowel disease, advanced endoscopy, and motility. Our survey found that 35% of third-year fellows planned on pursuing an advanced fellowship position and that of these fellows, 21% decided to apply due to the COVID-19 pandemic. These respondents will further add to the growing pool of applicants looking for faculty positions the following year, which may lead to more challenges for graduating fellows in the job search process.

Given the high level of concern for future job attainment found in our previous survey,<sup>2</sup> we were interested in gaining insight into the types of job attained. We found a significant decrease in research-based positions accepted in our survey, compared with the year prior. We believe this finding is multifactorial based on decreased fellowship research productivity and limited funding for research-focused positions.

The majority of survey respondents felt that the COVID-19 pandemic impacted their research and their ability to publish and present their research during fellowship. This impact of research productivity during fellowship is likely due to stay at home orders, bench laboratory closures, and heightened clinical research restrictions early in the pandemic.<sup>1,4,7,9</sup> It is possible that this decrease in research productivity has and will lead to downstream effects such as a decreased interest in graduating fellows to pursue future research and decreased attractiveness of fellow applicants to division directors who wish to hire researchers. Finally, it is likely that reduced hospital revenues have made budgeting for research-based faculty more difficult.<sup>8</sup>

NASPGHAN fellows across all years continue to report that the COVID-19 pandemic is impacting their clinical, procedural, and research aspects of training similar to the previous NASPGHAN survey study.<sup>2</sup> However, at that time of the previous survey, the COVID-19 pandemic was just beginning, and training programs were figuring out how best to support trainees.<sup>1</sup> Since then, there have been several studies evaluating the impact of the COVID-19 pandemic on medical training.<sup>3-7</sup> A significant reduction in endoscopic procedures performed by gastroenterology trainees has been reported.<sup>5,6</sup>

The American College of Graduate Medical Education has set forth minimal required competency-based assessments that training programs could use during the COVID-19 pandemic to ensure that trainees are meeting core competencies.<sup>10</sup> While graduating fellows must meet these standards, the true impact of training in the COVID-19 pandemic will be best evaluated as fellows begin their first job. It is important that we act to mitigate the potential impact whether this is through online training or in-person junior faculty conferences.

There are important limitations to our study. First, there was a 36% respondent rate for the current survey. This was similar to the response rate of the 2019–2020 survey of 33%. There were a higher proportion of third-year fellows that responded and a small proportion of fourth-year fellows that responded. Further our sample population was limited to NASPGHAN fellows, which may limit the generalizability of our data to trainees from other disciplines and other continents.

In summary, these findings represent a continued impact of the COVID-19 pandemic on trainees, a different form of “long COVID” than seen physically with patients. With decreased research productivity in fellowship training and research-based positions, this raises concern that this could contribute to losing future physician scientists. In order to further support these COVID-affected trainees, there is a high need for quality mentoring and training for junior faculty to address this COVID-related gap.

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