Prevalence and Correlates of Prohibited Questions in Internal Medicine and Pediatrics Fellowship Interviews During 1 Appointment Year

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Abstract

Purpose

This study sought to investigate how frequently applicants to internal medicine (IM) and pediatrics fellowships are subjected to prohibited questions, how correlates of these interview questions compare between IM and pediatrics fellowship applicants, and which applicant subgroups are most affected.

Method

The National Resident Matching Program (NRMP) emailed an anonymous survey to all applicants for the 2021 appointment year to the Medical Specialties Matching Program (i.e., IM fellowship Matches) and Pediatric Specialties Fellowship Match who certified rank order lists (ROLs). The survey addressed specific questions regarding the use of legally prohibited questions and questions that violate the NRMP's Match Participation Agreement during interview-related activities. Experiences of respondents were compared by preferred subspecialty and respondent demographics within IM and pediatrics.

Results

The final response rates of IM and pediatrics fellowship applicants who certified ROLs, including complete and partial surveys, were 21.7% (1,483/6,847) and 23.4% (385/1,648), respectively. Of the IM and pediatrics respondents, 432/1,296 (33.3%) and 97/366 (26.5%), respectively, reported being asked at least one prohibited demographic question. The most commonly asked prohibited questions pertained to relationship or marital status (IM: 312/1,296, 24.1%; pediatrics: 69/367, 18.8%), national origin (IM: 200/1,296, 15.4%; pediatrics: 30/365, 8.2%), and family planning (IM: 104/1,288, 8.1%; pediatrics: 14/366, 3.8%). Nearly 25% of IM and pediatrics respondents reported being asked to identify other programs they applied to or interviewed with. Most often, these questions came from program faculty (IM: 238/303, 78.5%; pediatrics: 69/88, 78.4%) or program directors (IM: 84/303, 27.7%; pediatrics: 18/88, 20.5%).

Conclusions

Substantial proportions of IM and pediatrics fellowship applicants reported being asked prohibited questions during fellowship interview–related activities. Additional educational efforts are needed to eradicate such questions from the interview process.

Every year, tens of thousands of physicians apply for residency and fellowship programs in the United States. Interviews are a critical part of the application process. Both the Association of American Medical Colleges and the National Resident Matching Program (NRMP) provide interviewing guidelines, including lists of questions that interviewers are prohibited from asking due to their unethical nature or illegality under federal law.[1–8] These guidelines align with larger efforts to promote diversity, equity, and inclusion in selection processes and graduate medical education more broadly.[9,10] The aim of the guidelines is to support a physician workforce that is demographically consistent with the patient populations served and to improve patient care and other health system outcomes.[11] Despite these guidelines, questions that are inappropriate, illegal, or contraventions of best practices are posed to substantial percentages of applicants during residency and fellowship recruitment within the United States.[12–19] The consequences of such violations can be severe for programs, including NRMP-imposed sanctions (e.g., exclusion from future Matches), discrimination lawsuits,[1,4–8] and reputational damage.[12–14,19] These violations may also have adverse psychological effects on applicants,[20] especially if they are disproportionately experienced by groups commonly exposed to other discriminatory practices.

The NRMP's guidelines regarding prohibited questions are documented in the Match Participation Agreement (MPA) for programs (in the "Restrictions on Persuasion" section).[1] Specifically, the NRMP prohibits programs from asking applicants about other programs to which they have applied, the status of interviews with other programs, and their ranking preferences or intentions.[1] In addition, the NRMP Code of Conduct[2] states that programs cannot ask questions in domains prohibited by federal law, including disability status, age, sex, gender identity, sexual orientation, relationship or marital status, family planning, ethnicity, and religion.[4–8] Individual states and employers may have additional policies governing employment-related communication.

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Between 2013 and 2017, the NRMP investigated 2 cases involving coercion as defined in the MPA, of which questions concerning other programs and ranking intentions are examples; both cases were determined to have been violations of the MPA.[21] The authors noted concerns that the small number of reported cases indicates that these behaviors are probably vastly underreported, most likely due to applicants' fears of retaliation. In response to these concerns, the NRMP implemented a portal on its website in September 2017 that allowed for the anonymous reporting of alleged MPA violations. Between 2017 and 2019, 17 reports were submitted, including 13 containing detailed applicant experiences with inappropriate questions.[21] The modest number of uses of this portal may indicate a need to improve documentation of, and publicity surrounding, the problem.

When surveyed, 30% to 94% of applicants across specialties report being asked at least one question prohibited by law or policy during residency interviews.[12,13–15,19] Similarly, applicants to internal medicine (IM) fellowship programs have reported being asked prohibited questions during interviews.[16,17] Studies of prohibited questions being asked during residency and fellowship interviews have, however, been constrained by modest sample sizes and limited exploration of demographic correlates beyond gender identification and visa or citizenship status. Furthermore, no data are currently available regarding the experiences of pediatrics fellowship applicants. In addition, whether the prevalence of these experiences among IM fellowship applicants has changed as a result of the shift to virtual interviewing necessitated by the COVID-19 pandemic remains an unanswered but important question, particularly since most IM fellowship programs intend to continue virtual interviews.[22]

With regard to the specific content asked about in prohibited questions, some studies report that women residency applicants are more likely than men to be asked at least one illegal question and that women are more likely to be asked questions pertaining to relationship or marital status and family planning.[13–15,18] Data from IM fellowship applicants have been mixed,[16,17] but, as noted above, no data are yet available concerning pediatrics fellowship applicants. To expand on these key findings and address the knowledge gaps, this study sought to investigate: (1) how frequently applicants to IM and pediatrics fellowships are subjected to prohibited questions, (2) how correlates of these interview questions compare between IM and pediatrics fellowship applicants, and (3) which applicant subgroups are most affected. In addition to the novel pediatrics results, this report offers the largest IM sample to date (larger than all prior samples combined) and examines more applicant demographic characteristics than previous studies.

Method

Setting and participants

The 2020 NRMP Internal Medicine and Pediatrics Communications Survey was determined to be exempt by the Advarra Institutional Review Board (protocol #0004826).

The NRMP emailed invitations to complete the anonymous survey questionnaire to members of the target respondent sample, which consisted of all applicants for the 2021 appointment year to the Medical Specialties Matching Program (i.e., IM fellowship Matches) and the Pediatric Specialties Fellowship Match who certified rank order lists (ROLs) in the NRMP's Registration, Ranking, and Results system. The survey was administered online at a dedicated website hosted by Alchemer (Alchemer LLC, Louisville, Colorado).

IM survey invitations were sent on December 3, 2020, to 6,847 IM fellowship applicants who certified ROLs on or before the ROL certification deadline of November 18, 2020. The IM survey closed on January 14, 2021, after approximately 6 weeks. Invitations for the pediatrics survey were sent on January 19, 2021, to 1,648 pediatrics fellowship applicants who certified ROLs on or before the certification deadline of December 2, 2020. The pediatrics survey closed on February 22, 2021, after approximately 4 weeks. Two sets of reminders were emailed to applicants during each survey period to maximize response rates.

Survey questionnaire

All applicants received the same survey questions except for the lists of preferred subspecialties, which were specific to either IM or pediatrics. Respondents were informed that their participation in the survey was voluntary and that they had the option to decline to answer any question.

The survey asked respondents to indicate whether, at any time during interview-related activities (prescreening, interviews, tours, dinners, or receptions), they were asked questions in any of the following 7 categories prohibited by federal law: age; religious affiliation, religious beliefs, or need for religious expression accommodation; national origin; disability status; sexual orientation or gender identity; relationship or marital status; or family planning intentions. A follow-up item to those who indicated they had been asked questions in any of these domains asked whether respondents were aware that such questions were illegal.

In addition to legally prohibited questions, applicants were asked to indicate the frequency with which any interviewers committed violations of the NRMP's MPA by requesting: (1) information concerning other programs which applicants may have applied to or been interviewed at or (2) information from applicants about their ranking preferences. These items were assessed on a 5-point scale (never, rarely, sometimes, often, always). For any items with an endorsement other than never, applicants received follow-up items asking which categories of interviewers typically asked each type of prohibited question, including program directors, program faculty, program staff, other learners in the program, and other learners not in the program. Applicants were also asked for their perceptions about program-initiated post-interview communications aimed at assessing their ranking intentions.

Demographic questions included subspecialty preference, gender, race, ethnicity (i.e., Hispanic, Latinx, or Spanish origin), and current work authorization status. Current work authorization categories included U.S. citizens, permanent legal residents, or refugees; holders of Green Cards; holders of employment authorization documents;

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holders of nonimmigrant visas; and other. Nonimmigrant visa options were J-1 (exchange visitor) and H-1B (specialty occupation). Because of small subgroup sizes, IM respondents identifying themselves as Green Card holders were combined with U.S. citizens, legal permanent residents, and refugees; those reporting other current work authorization status were combined with employment authorization document holders. Similarly, pediatrics respondents were classified into 2 current work authorization status groups: those identifying themselves as U.S. citizens, legal permanent residents, or refugees or Green Card holders were combined into one group, whereas those identifying themselves as H-1B or J-1 visa holders, employment authorization document holders, and other statuses constituted a second group.

Data analysis

We used standard contingency table approaches and 2-tailed χ^2 statistics or Fisher's exact tests, as appropriate, to compare experiences of prohibited questions by preferred subspecialty and respondent demographics within each core specialty. We fit single-predictor and multivariable logistic regression models and obtained odds ratios and 95% confidence intervals to assess the strength of associations between selected respondent characteristics and the experience of any illegal question. We set statistical significance at $\alpha = 0.05$ and performed all analyses using SAS 9.4 (SAS Institute, Cary, North Carolina).

Results

Sample characteristics

The final response rates of IM and pediatrics fellowship applicants who certified ROLs were 21.7% (1,483/6,847; 1,311 complete and 172 partial surveys) and 23.4% (385/1,648; 370 complete and 15 partial surveys), respectively. Respondent subspecialty preferences and demographic characteristics are shown in Table 1. Both samples comprised a broad range of preferred subspecialties. Cardiovascular (349/1,468, 23.8%), pulmonary (228/1,468, 15.5%), and hematology or medical oncology (212/1,468, 14.4%) were the most common preferred subspecialties among IM respondents, whereas neonatal-perinatal medicine (67/379, 17.7%), pediatric emergency medicine (64/379, 16.9%), and critical care (61/379, 16.1%) were the most common preferred subspecialties among pediatrics respondents. U.S. citizens, legal permanent residents, and refugees (including Green Card holders) comprised 80.2% (1,030/1,285) of IM and 90.9% (330/363) of pediatrics respondents providing information. Of respondents providing gender self-identification, females comprised 43.4% (557/1,284) of IM respondents and 73.1% (263/360) of pediatrics respondents. Among IM respondents, 28.8% (369/1,281) self-identified as Asian or Pacific Islander and 50.4% (646/1,281) as White or Caucasian; among pediatrics respondents, 15.2% (55/361) self-identified as Asian or Pacific Islander and 70.9% (256/361) as White or Caucasian. As detailed in Supplemental Digital Appendixes 1 and 2 (at http://links.lww.com/ACADMED/B584), respondents from both specialties were broadly representative of their overall active fellow cohorts, as compared with subspecialty and gender identification data from the Accreditation Council for Graduate Medical Education.[23]

Any legally prohibited question

Of the IM and pediatrics respondents, 432/1,296 (33.3%) and 97/366 (26.5%), respectively, reported being asked at least one legally prohibited demographic question (Table 2). The most commonly asked legally prohibited questions pertained to relationship or marital status (IM: 312/1,296, 24.1%; pediatrics: 69/367, 18.8%), national origin (IM: 200/1,296, 15.4%; pediatrics: 30/365, 8.2%), and family planning (IM: 104/1,288, 8.1%; pediatrics: 14/366, 3.8%). Fewer than 4% of respondents were asked about age or religion, and well below 1% of respondents were asked about disability status or sexual orientation or gender identity.

The likelihood of experiencing legally prohibited demographic questions among those respondents asked at least one such question was similar across demographic characteristics between IM and pediatrics (Table 3), with one exception: IM respondents who self-identified as Black or African American (30/68, 44.1%) were more likely to be asked a legally prohibited question than their pediatrics counterparts (3/19, 15.8%).

Odds ratios and 95% confidence intervals from multivariable logistic regressions of experiences of any legally prohibited questions on respondent characteristics are shown in Table 4, and those from single-predictor logistic regression models are shown in Supplemental Digital Appendix 3 (at http://links.lww.com/ACADMED/B584). In multivariable analyses of the IM sample, when compared to cardiovascular respondents, hospice and palliative care and pulmonary respondents were significantly less likely to experience illegal questions. Compared to the group comprising U.S. citizens, legal permanent residents, and refugees (including Green Card holders), respondents holding J-1 visas and employment authorization documents or other current work authorizations in the IM sample were significantly more likely to experience illegal questions. In multivariable analyses of the pediatrics sample, male applicants were significantly less likely than female applicants to experience illegal questions. Being of Hispanic, Latinx, or Spanish origin was not associated with legally prohibited questions in either the IM or pediatrics samples. In the IM sample, respondents who self-identified as White or Caucasian were significantly less likely to experience illegal questions than respondents who preferred not to self-identify their race.

Specific legally prohibited questions: relationship or marital status, national origin, and family planning

Associations of respondent characteristics with questions about relationship or marital status are shown in Supplemental Digital Appendix 4 (at http://links.lww.com/ACADMED/B584). Current work authorization status; being of Hispanic, Latinx, or Spanish origin; and race were not associated with these types of questions in either sample. Gender identification was not associated with these types of questions among IM respondents, but female respondents in the pediatrics sample were statistically significantly more likely than male respondents to report experiencing them (female: 60/263, 22.8%; male: 7/96, 7.3%; $P = .003$). Conversely, experiences across subspecialties varied statistically significantly in the IM but not the pediatrics sample, with the highest prevalence in endocrinology.

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Table 1

Respondent Demographics and Preferred Subspecialties for Internal Medicine and Pediatrics Fellowship Applicants, 2021 Appointment Year

Characteristic	Internal medicine (n = 1,483)[a]		Pediatrics (n = 385)[a]	
	No. of nonmissing responses	%	No. of nonmissing responses	%
Subspecialty preference	1,468		379	
Cardiovascular subspecialties[b]	349	23.8	34	9.0
Allergy and immunology	44	3.0	—	—
Critical care	—	—	61	16.1
Developmental-behavioral pediatrics	—	—	10	2.6
Endocrinology	85	5.8	17	4.5
Pediatric emergency medicine	—	—	64	16.9
Gastroenterology	151	10.3	21	5.5
Geriatric medicine	47	3.2	—	—
Hematology or medical oncology	212	14.4	24	6.3
Hospice and palliative medicine	88	6.0	—	—
Pediatric hospital medicine	—	—	23	6.1
Infectious diseases	104	7.1	17	4.5
Neonatal-perinatal medicine	—	—	67	17.7
Pulmonary subspecialties[c]	228	15.5	12	3.2
Nephrology	82	5.6	13	3.4
Rheumatology	78	5.3	—	—
All others[d]	—	—	16	4.2
Current work authorization	1,285		363	
U.S. citizen, legal permanent resident, or refugee[e]	1,030	80.2	330	90.9
H-1B visa holder	44	3.4	33[f]	9.1[f]
J-1 visa holder	190	14.8		
Employment authorization document holder or other	21	1.6		
Gender identification	1,284		360	
Female	557	43.4	263	73.1
Male	714	55.6	96	26.7
Transgender, nonbinary, or prefer not to answer[f]	13	1.1	—	—
Whether of Hispanic, Latinx, or Spanish origin	1,284		360	
No	1,152	89.7	324	90.0
Yes	132	10.3	36	10.0
Race	1,281		361	
White or Caucasian	646	50.4	256	70.9
Black or African American	68	5.3	19	5.3
Asian or Pacific Islander	369	28.8	55	15.2
> 1 or mixed	50	3.9	31[f]	8.6[f]
Other (write-in)	82	6.4		
Prefer not to answer	65	5.1		

[a]Total sample sizes refer to numbers of complete plus partial responses by applicants from each core specialty. Some percentages may not add to 100 because of rounding and sample sizes vary from question to question as respondents may have chosen not to answer specific items.

[b]Among internal medicine applicants, includes adult congenital heart disease, advanced heart failure and transplant cardiology, cardiovascular disease, and clinical cardiac electrophysiology; among pediatrics applicants, consists of pediatric cardiology.

[c]Among internal medicine applicants, includes interventional pulmonology and pulmonary disease and pulmonary or critical care medicine; among pediatrics applicants, consists of pediatric pulmonology.

[d]Among pediatrics applicants, includes academic general pediatrics, child abuse, pediatric rheumatology, and pediatric transplant hepatology. No subspecialties are grouped into this category for internal medicine applicants.

[e]Includes Green Card holders.

[f]These subgroups were combined because of very small cell sizes and the need to protect respondents' privacy.

Regarding national origin (see Supplemental Digital Appendix 5 at http://links.lww.com/ACADMED/B584), non-U.S. citizens (i.e., respondents with H-1B and J-1 visas, employment authorization documents, and other current work authorizations), female respondents, and non-Caucasians were most likely to be asked these questions.

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Table 2

Experiences of Prohibited Questions for Internal Medicine and Pediatrics Fellowship Applicants, 2021 Appointment Year

Prohibited question experience	Internal medicine (n = 1,483)[a]		Pediatrics (n = 385)[a]	
	No. of nonmissing responses	%	No. of Nonmissing responses	%
Total number of legally prohibited demographic questions respondent was asked	1,296		366	
0	864	66.7	269	73.5
1	246	19.0	71	19.4
2	138	10.6	20	5.5
3 or more	48	3.7	6	1.6
Whether respondent was asked about age	1,294		363	
Yes	37	2.9	3	0.8
No	1,229	95.0	352	97.0
Do not recall	28	2.2	8	2.2
Whether respondent was asked about religion	1,297		367	
Yes	19	1.5	5	1.4
No	1,271	98.0	360	98.1
Do not recall	7	0.5	2	0.5
Whether respondent was asked about national origin	1,296		365	
Yes	200	15.4	30	8.2
No	1,081	83.4	329	90.1
Do not recall	15	1.2	6	1.6
Whether respondent was asked about disability status	1,295		366	
Yes	4	0.3	0	0.0
No	1,285	99.2	362	98.9
Do not recall	6	0.5	4	1.1
Whether respondent was asked about sexual orientation or gender identity	1,290		366	
Yes	8	0.6	0	0.0
No	1,275	98.8	364	99.5
Do not recall	7	0.5	2	0.6
Whether respondent was asked about relationship or marital status	1,296		367	
Yes	312	24.1	69	18.8
No	959	74.0	284	77.4
Do not recall	25	1.9	14	3.8
Whether respondent was asked about family planning	1,288		366	
Yes	104	8.1	14	3.8
No	1,167	90.6	347	94.8
Do not recall	17	1.3	5	1.4
Whether respondent was aware demographic questions were illegal (of respondents who reported being asked any prohibited demographic question)	430		93	
Yes	320	74.4	73	78.5
No	110	25.6	20	21.5
How often respondent was asked to identify other programs applied to or interviewed with	1,264		355	
Never	961	76.0	267	75.2
Rarely	208	16.5	61	17.2
Sometimes	77	6.1	23	6.5
Often or always	18	1.5	4	1.1

[a]Total sample sizes refer to numbers of complete plus partial responses by applicants from each core specialty. Some percentages may not add to 100 because of rounding and sample sizes vary from question to question as respondents may have chosen not to answer specific items.

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Table 3

Any Legally Prohibited Demographic Questions During Interviews by Respondent Characteristics for Internal Medicine and Pediatrics Fellowship Applicants, 2021 Appointment Year

Characteristic	Internal medicine (no. of nonmissing = 1,295)[a,b]		Pediatrics (no. of nonmissing = 362)[a,b]	
	No. (%)	*P* value	No. (%)	*P* value
Total reporting at least 1 legally prohibited demographic question	431 (33.3)		95 (26.2)	
Subspecialty preference		< .001		.55
Cardiovascular subspecialties[c]	112/302 (37.1)		8/32 (25.0)	
Critical care	—		13/56 (23.2)	
Allergy and immunology	14/38 (36.8)		—	
Emergency medicine	—		17/62 (27.4)	
Endocrinology	39/74 (52.7)		7/17 (41.2)	
Gastroenterology	54/131 (41.2)		6/20 (30.0)	
Geriatric medicine	10/43 (23.3)		—	
Hematology or medical oncology	69/188 (36.7)		6/23 (26.1)	
Hospice and palliative medicine	10/82 (12.2)		—	
Pediatric hospital medicine	—		1/20 (5.0)	
Neonatal-perinatal medicine	—		19/65 (29.2)	
Infectious diseases	29/93 (31.2)		5/17 (29.4)	
Nephrology	19/68 (27.9)		NR[d]	
Pulmonary subspecialties[e]	50/207 (24.2)		NR[d]	
Rheumatology	25/69 (36.2)		—	
All others[f]	—		3/15 (20.0)	
Current work authorization		< .001		.01
U.S. citizen, legal permanent resident, or refugee[g]	314/1,029 (30.5)		81/329 (24.6)	
H-1B visa holder	14/44 (31.8)		15/33 (45.5)[h]	
J-1 visa holder	90/190 (47.4)			
Employment authorization document holder or other	11/21 (52.4)			
Gender identification[i]		.55		< .001
Female	191/557 (34.3)		82/262 (31.3)	
Male	233/713 (32.7)		12/96 (12.5)	
Whether of Hispanic, Latinx, or Spanish origin		.72		.30
No	383/1,151 (33.3)		82/323 (25.4)	
Yes	46/132 (34.8)		12/36 (33.3)	
Race		.007		.51
White or Caucasian	195/645 (30.2)		65/255 (25.5)	
Black or African American	30/68 (44.1)		3/19 (15.8)	
Asian or Pacific Islander	118/369 (32.0)		17/55 (30.9)	
> 1 or mixed	19/50 (38.0)		10/31 (32.3)[h]	
Other (write-in)	37/82 (45.1)			
Prefer not to answer	29/65 (44.6)			

[a]No. of nonmissing is the largest nonmissing sample size for internal medicine and pediatrics cohorts on analyses of any of the respondent characteristics reported in the table. Analytic sample for each crosstabulation (e.g., gender identification by any legally prohibited question) excludes respondents missing on 2 or more of the 7 items querying legally prohibited demographic questions. Analytic sample size also varies by number of nonmissing responses on respondent characteristic of interest (e.g., gender identification). Thus, the denominators for each row within each core specialty consist of total numbers of respondents with each characteristic (e.g., female) who responded to at least 5 of the 7 items querying legally prohibited questions.

[b]Some percentages may not add to 100 because of rounding.

[c]Among internal medicine applicants, includes adult congenital heart disease, advanced heart failure and transplant cardiology, cardiovascular disease, and clinical cardiovascular electrophysiology; among pediatrics applicants, consists of pediatric cardiology.

[d]Not reported (NR) due to small numbers of applicants preferring these specialties and the rarity with which they reported this type of questioning.

[e]Among internal medicine applicants, includes interventional pulmonology and pulmonary disease and pulmonary or critical care medicine; among pediatrics applicants, consists of pediatric pulmonology.

[f]Among pediatrics applicants, includes academic general pediatrics, child abuse, pediatric rheumatology, and pediatric transplant hepatology. No subspecialties were grouped into this category for internal medicine applicants.

[g]Includes Green Card holders.

[h]Due to small cell sizes, these subgroups were collapsed to protect respondents' privacy.

[i]Due to small subgroup sizes, respondents who identified themselves as other than male or female were not examined to protect their privacy.

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The prevalence of questions about family planning did not differ between male and female applicants in either the IM (male: 50/711, 7.0%; female: 52/551, 9.4%; $P = .24$) or pediatrics (male: 4/95, 4.2%; female: 9/263, 3.4%; $P = .90$) samples.

Awareness of illegality

The majority of respondents who were asked legally prohibited demographic questions were aware such questions are illegal (IM: 319/429, 74.4%; pediatrics: 73/93, 78.5%; see Supplemental Digital Appendix 6 at http://links.lww.com/ACADMED/B584). Respondents in current work authorization statuses other than U.S. citizens, legal permanent residents, and refugees (including Green Card holders) in both samples; male respondents (160/233, 68.7%) and those

Table 4

Odds Ratios (ORs) and 95% Confidence Intervals (CIs) From Multivariable Logistic Regressions of Experiences of Any Legally Prohibited Communication on Respondent Characteristics Among Internal Medicine and Pediatrics Fellowship Applicants, 2021 Appointment Year[a]

	Internal medicine		Pediatrics	
Characteristic	**OR (95% CI)**	***P* value**	**OR (95% CI)**	***P* value**
Gender identification[b]		.44		<. 001
Female	1.00 (*referent*)		1.00 (*referent*)	
Male	0.91 (0.70–1.17)		**0.31 (0.16–0.60)**	
Race		.11		.51
White or Caucasian	1.00 (*referent*)		1.00 (*referent*)	
Asian or Pacific Islander	0.93 (0.69–1.25)		1.29 (0.66–2.51)	
Black or African American	1.48 (0.87–2.53)		0.48 (0.13–1.73)	
> 1 or mixed	1.14 (0.58–2.22)		1.30 (0.53–3.18)[c]	
Other (write-in)	1.44 (0.87–2.36)			
Prefer not to answer	**1.85 (1.03–3.33)**			
Whether of Hispanic, Latinx, or Spanish origin		.85		.36
No	1.00 (*referent*)		1.00 (*referent*)	
Yes	0.96 (0.62–1.49)		1.44 (0.65–3.18)	
Current work authorization		.002		—
U.S. citizen, legal permanent resident, or refugee[d]	1.00 (*referent*)		—	
Employment authorization document holder or other	**2.55 (1.04–6.23)**		—	
H-1B visa holder	0.94 (0.48–1.85)		—	
J-1 visa holder	**1.82 (1.29–2.58)**		—	
Subspecialty preference		< .0001		—
Cardiovascular[e]	1.00 (*referent*)		—	
Allergy and immunology	1.09 (0.53–2.23)		—	
Endocrinology	1.68 (0.97–2.91)		—	
Gastroenterology	1.11 (0.72–1.71)		—	
Geriatric medicine	0.46 (0.22–1.00)		—	
Hematology or medical oncology	0.98 (0.66–1.45)		—	
Hospice and palliative medicine	**0.23 (0.11–0.49)**		—	
Infectious diseases	0.77 (0.46–1.28)		—	
Nephrology	0.59 (0.33–1.08)		—	
Pulmonary[f]	**0.55 (0.37–0.82)**		—	
Rheumatology	0.95 (0.54–1.66)		—	

[a]ORs and 95% CIs in bold font are statistically significant ($P < .05$). All included covariates were entered simultaneously into each model. Because of the small size of the pediatrics sample, and the small subgroup sizes in some current work authorization statuses and subspecialties, these covariates could not be included in the multivariable models.

[b]Respondents identifying themselves as other than male or female are not reported because of very small numbers and the need to protect respondents' privacy.

[c]These subgroups were combined because of very small numbers and the need to protect respondents' privacy.

[d]Includes Green Card holders.

[e]Includes adult congenital heart disease, advanced heart failure and transplant cardiology, cardiovascular disease, and clinical cardiac electrophysiology.

[f]Includes interventional pulmonology and pulmonary disease and pulmonary or critical care medicine.

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who self-identified as Black or African American (16/30, 53.3%), more than one or mixed race (11/19, 57.9%), or who preferred not to report their race (21/29, 72.4%) in the IM sample; and those who self-identified as other than White or Caucasian or Asian or Pacific Islander (7/13, 53.8%) and as being of Hispanic, Latinx, or Spanish origin (6/12, 50.0%) in the pediatrics sample were less likely to be aware that these questions are illegal.

Questions prohibited by the NRMP's MPA

Nearly 25% of both IM and pediatrics respondents reported being asked to identify other programs they applied to or interviewed with (Table 5). The prevalence of such questions varied statistically significantly by subspecialty preference and current work authorization status among IM but not pediatrics respondents. No statistical differences were identified among respondents based on gender identification or race in either sample.

Most often, questions prohibited by the NRMP's MPA came from program faculty (IM: 238/303, 78.5%; pediatrics: 69/88, 78.4%) or program directors (IM: 84/303, 27.7%; pediatrics: 18/88, 20.5%; see Supplemental Digital Appendix 7 at http://links.lww.com/ACADMED/B584). Such questions from program staff and other learners, inside or outside of the program, were infrequent.

Among IM respondents, 6.2% (80/1,290) reported being asked about their ranking intentions, whereas only 2.2% (8/364) of pediatrics respondents report being asked such questions (see Supplemental Digital Appendix 7 at http://links.lww.com/ACADMED/B584). Among IM respondents, questions regarding ranking intentions most often came from program directors (45/80, 56.3%) and program faculty (42/80, 52.5%). There were too few occurrences to report the identification of interviewers asking pediatrics respondents about ranking intentions.

Discussion

Despite previous reports bringing attention to the use of questions prohibited by federal law and the NRMP's MPA during fellowship interviews[16,17] and repeated publication of recruitment guidelines emphasizing the inappropriateness of such questioning, our results demonstrate that this concerning set of behaviors remains prevalent in IM, following the shift to virtual interviewing necessitated by the COVID-19 pandemic, at levels similar to those identified previously based on in-person interviews.[12–19] To our knowledge, this study was the first to examine the prevalence of such questions in pediatrics. The prevalence of legally prohibited questions at any point during fellowship interview-related activities was broadly similar across IM and pediatrics, affecting 1/4 to 1/3 of applicants. In multivariable analyses of the IM sample, holders of J-1 visas, as well as employment authorization documents and other current work authorizations, and in the pediatrics sample, female applicants, were statistically significantly more likely to be asked illegal questions. Moreover, the most common types of illegal questions asked of both sets of respondents were about relationship or marital status, national origin, and family planning. Consistent with previous reports of fellowship applicants,[16,17] we did not observe gender differences among IM applicants with regard to relationship or marital status questions. In the pediatrics sample, however, female applicants were about 3 times more likely than male applicants to report being asked about relationship or marital status. We also observed that particularly vulnerable respondents (including those who self-identified as other than U.S. citizens, legal permanent residents, or refugees [including Green Card holders]) in both specialties were less likely to report awareness of the illegality of such questions.

Similar to previous reports,[15,16,19,21,24–26] we also found that reported violations of the NRMP's MPA were common among respondents from both specialties. That is, roughly 1 in 4 IM and pediatrics respondents were asked about other programs to which they applied or with which they interviewed. Program directors and program faculty were the most likely to ask these prohibited questions.

Prior to this report, there was limited attention to the prevalence and correlates of prohibited questions during fellowship interview processes across specialties, with an absence of data regarding these behaviors in pediatrics fellowships. While the questions may have been asked without malicious intent, the psychological impacts of such prohibited questions during fellowship interviews may be substantial for applicants,[20] especially because of the observation that non-U.S. citizen applicants reported being asked these questions more often. The frequency with which fellowship applicants in IM and pediatrics experience prohibited questions suggests that more robust awareness of the problem and prevention efforts are needed to ensure equitable and just interview processes. Ongoing commitment to fundamental strategies to mitigate bias as outlined in existing guidelines is necessary.[3,9,10] These strategies include implicit bias education and training with active and experiential learning components for all fellowship recruitment committee members, standardized applicant review processes, active commitment to diversity and inclusion during application interactions, and continuous quality improvement processes to optimize approaches to recruitment. For example, due to the regularity of turnover among program directors[27,28] and faculty interviewers, mandatory annual training of everyone conducting any part of the interview process is necessary. Increased efforts to educate applicants about their rights and to provide support for those who may need it after experiencing these inappropriate behaviors during interviews are also warranted.

It remains unknown whether prohibited questions in the context of different interview-related activities (prescreening, formal interviews, tours of institutions, or dinners or receptions) or in virtual versus in-person formats have differential impacts on fellowship applicants, or whether applicants are differentially likely in different contexts to assert their rights in reaction to them. Future research is needed to address each of these questions.

Limitations

Limitations of this study include survey response rates of under 25% in both cohorts, which raise the possibility of response bias. As noted previously, comparison with Accreditation Council for Graduate Medical Education demographics data suggests our respondent population is broadly similar to the current population of fellows

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Table 5

Questions About Other Programs Applied to or Interviewed With During Interviews by Respondent Characteristics Among Internal Medicine and Pediatrics Fellowship Applicants, 2021 Appointment Year

Characteristic	Internal medicine (no. of nonmissing = 1,263)[a,b]				Pediatrics (no. of nonmissing = 353)[a,b]		
	Never, no. (%)	Rarely, no. (%)	Sometimes, often, or always, no. (%)[c]	*P* value	Never, no. (%)	Rarely, sometimes, often, or always, no. (%)[c]	*P* value
Total	960 (76.0)	208 (16.5)	95 (7.5)		265 (75.1)	88 (24.9)	
Subspecialty preference				< .001			.18
Cardiovascular subspecialties[d]	184/293 (62.8)	70/293 (23.9)	39/293 (13.3)		20/31 (64.5)	11/31 (35.5)	
Critical care	—	—	—		39/55 (70.9)	16/55 (29.1)	
Allergy and immunology	24/37 (64.9)	9/37 (24.3)	4/37 (10.8)		—	—	
Emergency medicine	—	—	—		50/61 (82.0)	11/61 (18.0)	
Endocrinology	60/69 (87.0)	9/69 (13.0)	0/69 (0.0)		10/17 (58.8)	7/17 (41.2)	
Gastroenterology	94/129 (72.9)	22/129 (17.1)	13/129 (10.1)		13/18 (72.2)	5/18 (27.8)	
Geriatric medicine	38/42 (90.5)	4/42 (9.5)	0/42 (0.0)		—	—	
Hematology or medical oncology	129/183 (70.5)	39/183 (21.3)	15/183 (8.2)		18/21 (85.7)	3/21 (14.3)	
Hospice and palliative medicine	72/81 (88.9)	5/81 (6.2)	4/81 (4.9)		—	—	
Pediatric hospital medicine	—	—	—		16/17 (94.1)	1/17 (5.9)	
Neonatal-perinatal medicine	—	—	—		47/63 (74.6)	16/63 (25.4)	
Infectious diseases	80/92 (87.0)	6/92 (6.5)	6/92 (6.5)		14/17 (82.4)	3/17 (17.7)	
Nephrology	58/67 (86.6)	6/67 (9.0)	3/67 (4.5)		NR[e]	NR[e]	
Pulmonary subspecialties[f]	171/204 (83.8)	25/204 (12.3)	8/204 (3.9)		NR[e]	NR[e]	
Rheumatology	50/66 (75.8)	13/66 (19.7)	3/66 (4.6)		—	—	
All others[g]	—	—	—		13/15 (86.7)	2/15 (13.3)	
Current work authorization				.04			.57
U.S. citizen, legal permanent resident, or refugee[h]	763/1,005 (75.9)	168/1,005 (16.7)	74/1,005 (7.4)		242/320 (75.6)	78/320 (24.4)	
H-1B visa holder	35/43 (81.4)	1/43 (2.3)	7/43 (16.3)		22/31 (71.0)[i]	9/31 (29.0)[i]	
J-1 visa holder	136/184 (73.9)	36/184 (19.6)	12/184 (6.5)				
Employment authorization document holder or other	17/20 (85.0)	3/20 (15.0)	0/20 (0)				
Gender identification[j]				.96			.52
Female	412/541 (76.2)	89/541 (16.5)	40/541 (7.4)		195/256 (76.2)	61/256 (23.8)	
Male	527/698 (75.5)	117/698 (16.8)	54/698 (7.7)		67/92 (72.8)	25/92 (27.2)	
Whether of Hispanic, Latinx, or Spanish origin				.45			.98
No	850/1,124 (75.6)	186/1,124 (16.5)	88/1,124 (7.8)		236/314 (75.2)	78/314 (24.8)	
Yes	99/127 (78.0)	22/127 (17.3)	6/127 (4.7)		27/36 (75.0)	9/36 (25.0)	
Race				.20			.69
White or Caucasian	493/633 (77.9)	98/633 (15.5)	42/633 (6.6)		184/248 (74.2)	64/248 (25.8)	
Black or African American	51/66 (77.3)	14/66 (21.2)	1/66 (1.5)		13/19 (68.4)	6/19 (31.6)	
Asian or Pacific Islander	256/357 (71.7)	64/357 (17.9)	37/357 (10.4)		41/52 (78.9)	11/52 (21.2)	
> 1 or mixed	34/49 (69.4)	10/49 (20.4)	5/49 (10.2)		25/31 (80.6)[i]	6/31 (19.4)[i]	
Other (write-in)	62/80 (77.5)	14/80 (17.5)	4/80 (5.0)				
Prefer not to answer	51/63 (81.0)	8/63 (12.7)	4/63 (6.4)				

[a]No. of nonmissing is the largest nonmissing sample size for internal medicine and pediatrics cohorts on analyses of any of the respondent characteristics reported in the table. Analytic sample size for each crosstabulation (e.g., gender identification by questions about other programs applied to or interviewed with) excludes respondents missing on questions about other programs applied to or interviewed with as well as those missing on respondent characteristic of interest. Thus, the denominators for each row within each core specialty consist of total numbers of respondents with each characteristic (e.g., female) who reported on being asked about other programs applied to and interviewed with.

[b]Some percentages may not add to 100 because of rounding.

[c]Response categories of sometimes, often, and always among internal medicine applicants and rarely, sometimes, often, and always among pediatrics applicants were combined due to small subgroup sizes.

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[d]Among internal medicine applicants, includes adult congenital heart disease, advanced heart failure and transplant cardiology, cardiovascular disease, and clinical cardiovascular electrophysiology; among pediatrics applicants, consists of pediatric cardiology.

[e]Because so few pediatrics applicants who preferred these specialties were asked these questions, data are not reported (NR).

[f]Among internal medicine applicants, includes interventional pulmonology and pulmonary disease and pulmonary or critical care medicine; among pediatrics applicants, consists of pediatric pulmonology.

[g]Among pediatrics applicants, includes academic general pediatrics, child abuse, pediatric rheumatology, and pediatric transplant hepatology. No subspecialties are grouped into this category for internal medicine applicants.

[h]Includes Green Card holders.

[i]These subgroups were combined because of very small numbers and the need to protect respondents' privacy.

[j]Due to small subgroup sizes, respondents who identified themselves as other than male or female were not examined to protect their privacy.

within IM and pediatrics subspecialties; however, differences between respondents and nonrespondents cannot be ruled out. Even if applicants experiencing inappropriate questions were more likely to respond to these surveys, the prevalence of reported experiences with inappropriate questions would still be concerning. In addition, due to the modest sample size among pediatrics respondents, we were unable to provide as detailed an analysis for that group as for the IM population. Respondent numbers also precluded detailed analysis within certain demographic categories, including evaluations of intersectional experiences. Further research is warranted with larger sample sizes, particularly in pediatrics and in similarly sized as well as smaller specialties, to enable finer-grained statistical analyses. Despite most respondents knowing they were being asked illegal questions, it is unknown how many protested or objected. For many reasons, residency and fellowship applicants may be reluctant to exercise their rights when faced with these questions.[21]

Another limitation is potential recall bias. Respondents may have interviewed at multiple programs, and details of their experiences with prohibited questions may have become blurred across time and institutions. This limitation, however, is likely to have been partly mitigated by the relatively close temporal proximity of survey administration to the interview process. We do not have information concerning actual interview dates; however, as noted previously, the interval between the ROL certification deadline and survey administration was just over 2 weeks in the IM cohort and just over 6 weeks in the pediatrics cohort. In addition, although the questionnaire explicitly asked about prohibited inquiries at any time during interview-related activities, the extent to which respondents recognized these questions as being inappropriate in settings other than formal interviews is unclear. It is also possible that applicants offered information on a prohibited topic during an interview and then reported this on the survey. We were not able to determine how often these topics were introduced by interviewers versus how often applicants offered and discussed these topics with interviewers in response to appropriate interview questions.

Some caution is also warranted in interpreting the findings because the study relied on respondents' self-reports. As noted previously, inappropriate questions are underreported,[20,21] and we observed significant differences by subspecialty and current work authorization status among IM applicants and gender identification among pediatrics applicants in multivariable analyses. Whether and, if so, how respondents within demographic- or subspecialty-specific subgroups differ in their propensity to report these experiences remains unknown and merits further study.

Conclusions

Substantial proportions of IM and pediatrics fellowship applicants reported being asked prohibited questions during interview processes for the 2021 appointment year. These questions may have harmful psychological consequences for applicants when they are uniquely vulnerable. Further research is needed to understand the potential impacts of applicants' experiences with such questions. Additional educational efforts are needed to eradicate them from the interview process, and improved structures are needed to support applicants subjected to them.

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References

1 National Resident Matching Program. Match Participation Agreements. Accessed April 22, 2024. https://www.nrmp.org/policies/

2 National Resident Matching Program. Match Codes of Conduct. Accessed April 22, 2024. https://www.nrmp.org/intro-to-the-match/

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the-match-agreement/match-codes-of-conduct/
3 Association of American Medical Colleges. Residency and Fellowship Selection Interview Foundations: Role and Setup. Accessed April 22, 2024. https://www.aamc.org/about-us/mission-areas/medical-education/best-practices-conducting-residency-program-interviews#dos
4 ADA National Network. An Overview of the Americans With Disabilities Act. Accessed April 22, 2024. https://adata.org/factsheet/ADA-overview
5 California Legislative Information. Government Code Section 12900–12999. California Fair Employment and Housing Act of 1959. Accessed April 22, 2024. https://leginfo.legislature.ca.gov/faces/codes_displayexpandedbranch.xhtml?lawCode=GOV&division=3.&title=2.&part=2.8.&chapter=9.&article=&goUp=Y
6 U.S. Equal Employment Opportunity Commission. Title VII of the Civil Rights Act of 1964. Accessed April 22, 2024. https://www.eeoc.gov/statutes/title-vii-civil-rights-act-1964#:~:text=L.,religion%2C%20sex%20and%20national%20origin
7 U.S. Equal Employment Opportunity Commission. The Age Discrimination in Employment Act of 1967. Accessed April 22, 2024. https://www.eeoc.gov/statutes/age-discrimination-employment-act-1967
8 U.S. Equal Employment Opportunity Commission. Prohibited Employment Policies/Practices. Accessed April 22, 2024. https://www.eeoc.gov/prohibited-employment-policiespractices
9 Dao AT, Garcia MM, Correa R, et al. AAIM recommendations to promote equity and inclusion in the internal medicine residency interview process. Am J Med. 2022;135:1509e.1–1516.e1. doi:10.1016/j.amjmed.2022-08-001.
10 Boatright D, London M, Soriano AJ, et al. Strategies and best practices to improve diversity, equity, and inclusion among US graduate medical education programs. JAMA Netw Open. 2023;6:e2255110. doi:10.1001/jamanetworkopen.2022.55110.
11 Gomez LE, Bernet P. Diversity improves performance and outcomes. J Natl Med Assoc. 2019;111:383–392. doi:10.1016/j.jnma.2019.01.006.
12 Limoges N, Zuckerman SL, Chambless LB, et al. Neurosurgery resident interviews: the prevalence and impact of inappropriate and potentially illegal questions. Neurosurgery. 2021;89:53–59. doi:10.1093/neuros/nyab059.
13 Hern HG, Alter HJ, Wills CP, Snoey ER, Simon BC. How prevalent are potentially illegal questions during residency interviews? Acad Med. 2013;88:1116–1121. doi:10.1097/acm.0b013e318299eecc.
14 Hern HG Jr., Trivedi T, Alter HJ, Wills CP. How prevalent are potentially illegal questions during residency interviews? A follow-up study of applicants to all specialties in the National Resident Matching Program. Acad Med. 2016;91:1546–1553. doi:10.1097/ACM.0000000000001181.
15 Sebesta EM, Lipsky MJ, Nunez M, Cooper KL, Badalato GM. The National Resident Matching Program Code of Conduct: what is the perceived degree of compliance during the urology match process? Urology. 2018;122:37–43. doi:10.1016/j.urology.2018.04.046.
16 Cornett PA, Williams C, Alweis RL, et al. Problematic communications during 2016 fellowship recruitment in internal medicine. J Community Hosp Intern Med Perspect. 2017;7:277–281. doi:10.1080/20009666.2017.1381546.
17 Williams CM, Alweis RL, O'Connor AB, et al. Inappropriate communication during internal medicine fellowship recruitment: a mixed-methods analysis. Am J Med. 2019;132:770–775. doi:10.1016/j.amjmed.2019.02.013.
18 Ofshteyn A, Steinhagen E, Stein SL. Despite a match communication code of conduct, applicants continue to be asked inappropriate questions. Dis Colon Rectum. 2021;64:508–510. doi:10.1097/DCR.0000000000001980.
19 Thurman RJ, Katz E, Carter W, et al. Emergency medicine residency applicant perceptions of unethical recruiting practices and illegal questioning in the match. Acad Emerg Med. 2009;16:550–557. doi:10.1111/j.1553-2712.2009.00413.x.
20 Fisher CE. Manipulation and the match. JAMA. 2009;302:1266–1267. doi:10.1001/jama.2009.1388.
21 Curtin LS, Signer MM. Program noncompliance in the National Resident Matching Program: prevalence and consequences. J Grad Med Educ. 2019;11:12–14. doi:10.4300/JGME-D-18-00464.1.
22 Luther VP, Wininger DA, Lai CJ, et al. Emerging from the pandemic: AAIM recommendations for internal medicine residency and fellowship interview standards. Am J Med. 2022;135:1267–1272. doi:10.1016/j.amjmed.2022.07.001.
23 Accreditation Council for Graduate Medical Education. Data Resource Book, Academic Year 2021–2022. Accessed April 22, 2024. https://www.acgme.org/globalassets/pfassets/publicationsbooks/2021-2022_acgme__databook_document.pdf
24 Brooks JT, Reidler JS, Jain A, LaPorte DM, Sterling RS. Post-interview communication during application to orthopaedic surgery residency programs. J Bone Joint Surg Am. 2016;98:e84. doi:10.2106/JBJS.15.01364.
25 Holliday EB, Thomas CR Jr., Kusano AS. Integrity of the National Resident Matching Program for radiation oncology: national survey of applicant experiences. Int J Radiat Oncol Biol Phys. 2015;92:525–531. doi:10.1016/j.ijrobp.2015.02.032.
26 Sbicca JA, Gorell ES, Peng DH, Lane AT. A follow-up survey of the integrity of the dermatology National Resident Matching Program. J Am Acad Dermatol. 2012;67:429–435. doi:10.1016/j.jaad.2011.09.035.
27 O'Connor AB, Halvorsen AJ, Cmar JM, et al. Internal medicine residency program director burnout and program director turnover: results of a national survey. Am J Med. 2019;132:252–261. doi:10.1016/j.amjmed.2018.10.020.
28 Pallant A, Hudson SM, Ben-Isaac E. Satisfaction, salaries, and sustainability: results of a national survey of pediatric program directors. Acad Pediatr. 2019;19:11–17.

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