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Internal Medicine Residency Program Director Awareness and Mitigation of Residents' Experiences of Bias and Discrimination

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INTRODUCTION

Internal medicine residents commonly experience bias and discrimination based on their identity characteristics (eg, gender, race, ethnicity, sexual orientation, disabilities), with descriptive literature spanning over 30 years.[1-14] The consequences of resident experience of bias and discrimination have also been well-documented, including self-loathing, burnout, moral distress, emotional exhaustion, cynicism, self-doubt, difficulty focusing on practicing medicine, suicidal thoughts, and fear that responding would adversely affect their careers.[9,11,15-20]

Despite extensive documentation about bias and discrimination in residency training, little seems to have changed over time. Recent national surveys have found that nearly two-thirds of all female residents in internal medicine, emergency medicine, surgery, and obstetrics and gynecology report experiencing identity-based mistreatment.[9,13,21,22] Although evidence to support interventions that effectively reduce or prevent trainees from experiencing mistreatment is lacking,[23] residency program director awareness of resident experiences is likely necessary for programs to effectively mitigate the harms caused by resident mistreatment.

Recently published results from a national survey found substantial discordance between surgery resident and surgery program director perceptions of mistreatment: while 45% of residents believe that gender discrimination "is a problem at my program," only 4% of program directors agreed with the same statement; similar discrepancies between the perceptions of residents

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and program directors were observed for sexual harassment, racial/ethnic discrimination, and bullying.[24] Little is known about residency program director perceptions in other fields of resident experiences of identity-based mistreatment or what residency programs are doing to identify and mitigate the harms caused by identity-based mistreatment of trainees.

In a companion survey to a recent national survey assessing internal medicine resident mistreatment,[21] we sought to understand 1) internal medicine program director awareness of resident experiences of identity-based mistreatment, 2) what internal medicine programs are currently doing to identify mistreatment incidents, and 3) what internal medicine programs are doing to educate residents and faculty to manage these events to preserve resident well-being.

PERSPECTIVES VIEWPOINTS

- Decades of research have demonstrated that residents commonly experience bias and discrimination and that these incidents can result in burnout, depression, suicidality, and substantial long-term career effects.
- Program directors' awareness of their residents' experiences of mistreatment and programs' efforts to detect and mitigate incidents of resident-experienced bias vary widely.
- Our findings support the development of national standards for identifying and mitigating residents' experience of bias.

METHODS

Design and Participants

The Association of Program Directors in Internal Medicine (APDIM) is a founding organization of the Alliance for Academic Internal Medicine (AAIM), a professional association that represents over 11,000 internal medicine educators and administrators. The APDIM Survey and Scholarship Committee oversees the development of an annual research survey of internal medicine residency program directors to collect essential trend data and study issues central to graduate medical education training. In addition to a standard section about residency program characteristics and program director characteristics such as race and ethnicity, subspecialty training, and administrative time for the role, the survey includes a limited number of thematic sections that vary annually. The 2021 Annual Survey included a section titled "Program Directors' Perspectives on Residents' Experiences of Bias and Discrimination."

The 2021 APDIM Annual Survey was disseminated to program directors from all 439-member residency programs that were of "initial" or "continued" accreditation status by the Accreditation Council for Graduate Medical Education (ACGME) prior to July 1, 2020 (ie, at least 1 year prior to the academic year to which the survey applied).

Measures

In February 2021, the 15-member APDIM Survey Committee appointed section development lead authors and co-contributors based on relevant experience. Question revisions, committee pretesting of the complete instrument, and further revisions occurred from March through June 2021, during which time AAIM Surveys staff programmed the instrument in the Qualtrics Surveys platform (Qualtrics software [Seattle, Wash], Version XM. Copyright © 2021). From late June through mid-July, the Web survey was pilot-tested for content validity by the survey committee and by 5 members of the AAIM Research Committee (consisting of experts in graduate medical education, blinded to the survey committee). Final revisions were then made to the instrument. The study (#21-AAIM-119) was deemed exempt by Pearl IRB (US Department of Health and Human Services Office for Human Research Protections #IRB00007772) under 45 CFR 56.104(d), category 2.

The survey included 77 questions (some with subparts) with conditional skip or display patterns and validation where applicable. Program director determination of the frequency of identity-based mistreatment of residents was based on the following question: "How often do you believe that your residents have personally experienced inappropriate comments or actions based on their identity markers (eg, gender, race, ethnicity, sexual orientation, disabilities) while working as a resident?" with response options of "never," "infrequently," "sometimes," "frequently," or "unsure." Program directors were also asked to self-identify their gender, racial, and ethnic origin. The relevant survey section questions are included in the Appendix (available online).

The survey landing page served as the study's informed consent page. No incentives for participation were offered. The survey launched on August 17, included 5 e-mail reminder messages to nonrespondents, and closed on December 7, 2021. The e-mail invitation and all e-mail reminders included opt-out links for individuals who did not wish to participate in the survey. Only AAIM Surveys staff had access to the survey platform and dataset/contacts during fielding.

Statistical Analysis

Data analysis was conducted in Stata 16.1 SE (StataCorp LLC, College Station, Texas) by AAIM Surveys

staff (MK). Prior to de-identifying the final responses for analysis, the study dataset was appended with data from external sources, including the number of approved resident positions, obtained from ACGME Accreditation Database System (Public) online.[25] Program type and other characteristics were obtained through a data license provided by the American Medical Association based on its Fellowship and Residency Electronic Interactive Database Access System.[26]

At the time of the study, member programs represented 80.4% of all internal medicine residency programs (439 of 546) with initial or continued ACGME accreditation prior to July 1, 2020 (ie, at least 1 year prior to the academic year to which the survey applied). An additional 37 programs did not meet the study criteria. Thus, the "study-eligible population" (programs eligible to complete the survey if all of them held APDIM membership) was 546 of the "universe" of 583 internal medicine residency programs. Statistical significance was designated with an alpha level set to $P \leq .05$ for testing the representativeness of the results to identify possible under- or over-representation between respondents and nonrespondents based on essential residency program characteristics. A detailed description of the methods used to assess the representativeness of the results is included in the Appendix.

Summary statistics included the reporting of frequencies and percentages for categorical variables and measures of central tendency or dispersion (eg, mean, median, standard deviation, interquartile range) for continuous variables. Write-in responses to "other" for certain multiple-choice questions were either recoded into existing response categories if they were similar to an existing category or coded into new categories if the percentage of similar write-in responses reached a certain threshold (about 5.0% of responses or greater). Due to survey conditional logic or item nonresponse, denominators reported for certain questions will not necessarily sum to the total number of survey respondents. "Equivocal" responses of "unsure" were excluded from statistical testing. The alpha level for testing the survey section's responses for possible associations with program director and program characteristics was set to $P \leq .01$ due to the preponderance of comparisons among and between questions and variables in a dataset of finite size (ie, to avoid erroneously reporting associations that might be due to chance or latent confounding variables). The authors explored several iterations of multivariate models but were unable to identify a sufficiently robust predictive model to explain interactions between essential program director or program characteristics and perception of how frequently residents experience bias or discrimination.

RESULTS

The survey response rate was 60.8% (267 of 439 survey-eligible program directors). Respondents and nonrespondents did not differ by essential residency program descriptive characteristics (Appendix). One-half of program directors reported that their residents experienced bias or discrimination "sometimes" (98, 36.7%) or "frequently" (35, 13.1%), whereas 102 (38.2%) answered "infrequently" and 22 (8.2%) answered "never" (10 program directors [3.7%] answered "unsure"). Program directors who reported that residents experience bias or discrimination "never" or "infrequently" were more likely to be male (65.3% compared with 34.7% female, $P = .005$) and to be international medical graduates (IMG; 80.3% of IMGs responded "never" or "infrequently," $P = .004$); the programs of program directors who responded "never" or "infrequently" tended to be smaller, newer, nonuniversity programs, and to demand less administrative time of the program director (Table 1[27]). A sensitivity analysis comparing "never" respondents to program directors who responded "infrequently," "sometimes," or "frequently" found the same associations, but also found that program directors who identify as "South Asian (eg, Indian, Pakistani)" were more likely to respond "never" (8 of 35 [22.9%] compared with 14 of 222 [6.3%], respectively, $P = .007$; notably, p-values were between .01 and .05 for program director gender and nonuniversity program comparisons in this analysis).

Program directors primarily learned about mistreatment incidents from informal communication methods relying on residents to reach out about concerns (Table 2). One-half of program directors (133, 49.8%) reported that their program does not formally assess whether residents have experienced bias or discrimination. The majority of program directors (62.2%; 166) reported having a curriculum to teach residents how to respond to bias or discrimination, and 128 (47.9%) reported having a curriculum to teach their faculty how to respond to incidents; among programs with curricula, 153 (92.1%) and 112 (87.5%) program directors thought the curricula were "somewhat" or "very" helpful for residents and faculty, respectively. Among programs without curricula, two-thirds of program directors responded that their program needs curricula for residents and faculty (Table 3). Program directors reported patients, patient families, nurses, and then faculty as the most common sources of mistreatment, which reflects previously reported resident opinions (Table 4[21]). Of 102 program directors whose residents had clinical experiences in a Veteran Affairs (VA) setting, 78 (76.4%) reported that their residents experience bias or discrimination at both VA and non-VA settings.

Table 1 PD Estimates of How Often Residents Experience Bias by PD and Program Characteristics

PD characteristics (qualitative)	Never or Infrequently* (n = 124)	Sometimes or Frequently* (n = 133)	Total (n = 257)	*P* Value†
Gender				
Female	43 (34.7)	73 (54.9)	116 (45.1)	.005
Male	81 (65.3)	60 (45.1)	141 (54.9)	
Self-identity	n = 118	n = 131	n = 249	
White only	74 (62.7)	90 (68.7)	164 (65.9)	.33
South Asian only	19 (16.1)	16 (12.2)	35 (14.1)	.24
East Asian only	7 (5.9)	10 (7.6)	17 (6.8)	.62
Black only	5 (4.2)	5 (3.8)	10 (4.0)	.87
Southeast Asian only	3 (2.5)	2 (1.5)	5 (2.0)	.47
Hispanic only	2 (1.7)	1 (0.8)	3 (1.2)	.56
Other	8 (6.7)	7 (5.3)	15 (6.0)	.58
PD medical school graduate type				
USMG	72 (58.1)	116 (87.2)	188 (73.2)	.002
IMG	41 (33.1)	10 (7.5)	51 (19.8)	.004
DO	11 (8.9)	7 (5.3)	18 (7.0)	.22
PD completed subspecialty training	49 (39.5)	41 (30.8)	90 (35.0)	.18
PD completed chief year	71 (57.3)	69 (51.9)	140 (54.5)	.28
PD screened positively for burnout‡	46 (37.1)	60 (45.1)	106 (41.3)	.25
PD considered resigning in past year	62 (50.0)	81 (60.9)	143 (55.6)	.19
Program characteristics (qualitative)				
Program type				
University-based	32 (25.8)	64 (48.1)	96 (37.4)	.006
Community-based	31 (25.0)	13 (9.8)	44 (17.1)	.046
Community-based, University-affiliated	59 (47.6)	55 (41.4)	114 (44.4)	.44
Military	2 (1.6)	1 (0.8)	3 (1.2)	.33
Program. . .				
Formally assesses if residents witness or experience bias	58 (52.7)	55 (43.0)	113 (47.5)	.13
Has curriculum for teaching residents how to respond to bias	73 (62.4)	90 (70.9)	163 (66.8)	.11
Has curriculum for teaching faculty how to respond to bias	56 (50.0)	69 (54.8)	125 (52.5)	.20
Has policy identifying employees' rights	114 (100.0)	109 (94.0)	223 (97.0)	.031
Program characteristics (quantitative)	Median (IQR)	Median (IQR)	Median (IQR)	*P* Value§
PD age in years as of 2021	50 (16)	50 (12)	50 (13)	.48
PD tenure in years as of 2021	4 (5)	5 (5)	5 (6)	.43
PD administrative protected time (%)	50 (15)	55 (15)	50 (20)	.006
Program original accreditation year	1975.5 (58.5)	1963 (22)	1969 (44)	< .001
Residency program filled positions (ACGME)	38 (38.5)	65 (66)	50 (58)	< .001
Resident characteristics (categorical program)	Mean (SD)	Mean (SD)	Mean (SD)	*P* Value‖
Female residents (%)	43.3 (11.6)	45.7 (9.8)	44.5 (10.7)	.078
Underrepresented in medicine residents (%)	19.1 (20.9)	16.7 (15.1)	17.9 (18.1)	.30
Resident IMG (%)	43.7 (34.0)	33.4 (35.3)	38.3 (35.0)	.031
Resident DO (avg %)	21.5 (23.3)	16.9 (21.3)	19.1 (22.4)	.11
Resident USMG (%)	34.9 (33.8)	49.7 (37.4)	42.5 (36.4)	.028

Data presented are PD counts (n [%]), except as specified.

ACGME = Accreditation Council for Graduate Medical Education; IMG = international medical graduate; IQR = interquartile range; PD = program director; SD = standard deviation; USMG = United States medical graduate.

*PD responses to "How often do you believe that your residents have personally experienced inappropriate comments or actions based on their identity markers (eg, gender, race, ethnicity, sexual orientation, disabilities) while working as a resident?"

†Adjusted Wald (Pearson) test of association (one degree of freedom).

‡Maslach and Jackson, 1981.[27]

§Two-sample Wilcoxon rank-sum (Mann-Whitney *U*) test.

‖Welch *t* test with unequal variances.

Table 2 Methods PDs and Programs Employ to Identify Resident Experiences of Bias or Discrimination*

	n (%)
PD learns of bias toward residents via:	
Targeted residents contact me directly or visit my office	193 (82.5)†
Targeted residents speak with the chief residents who then inform me	190 (81.2)
Targeted residents speak with medicine faculty who then inform me	140 (59.8)
Other trainees who were not directly targeted (eg, medical students, other residents)	122 (52.1)
Other reporting system (eg, graduate medical education office mistreatment reporting, "harassment hotline," human resources reporting)	88 (37.6)
Patient safety reporting system	73 (31.2)
Other nontrainees (eg, nursing, human resources, administration, faculty from other departments)	39 (16.7)
Other (1 reported "[T]witter")	31 (13.3)
Program formally assesses whether residents have witnessed or experienced inappropriate comments or actions based on identity markers	
No	133 (49.8)
Unsure	20 (7.5)
Yes, and if so, how?	114 (42.7)
Survey of residents	88 (77.2)‡
Patient safety reporting system	48 (42.1)
Structured semi-annual review discussion	43 (37.7)
Other (2 reported included in evaluations of faculty and rotation)	14 (12.3)

PD = program director.
*Respondents were permitted to select more than one answer.
†Denominator for percentages is 234 (excluded respondents who replied "Never" or "Unsure" to frequency of bias).
‡Denominator for percentages is 114 (question offered only to PDs who responded "Yes" to whether their program formally assesses for residents' experiences of bias).

DISCUSSION

Nearly one-half of internal medicine program directors responded that residents experience identity-based mistreatment "never" or "infrequently." Compared with their male counterparts, female program directors were less likely to report that residents experience bias "never" or "infrequently," which is not surprising because women residents and physicians experience bias substantially more commonly than men.[9,10,13,21,22,28] A higher percentage of program directors who had graduated from international medical schools reported that residents experience identity-

Table 3 PD Responses to Whether Program Has Curricula for Teaching Residents and Faculty How to Respond to Incidents of Bias or Discrimination

Does your program have a curriculum that teaches how to respond to bias or discrimination for:			
	Residents (n = 267)	Faculty (n = 267)	*P* Value*
Yes	166 (62.2)	128 (47.9)	.001
No	85 (31.8)	117 (43.8)	.004
Not sure	16 (6.0)	22 (8.2)	.31
If "Yes," how helpful do you think your curriculum is for:			
	Residents (n = 166)	Faculty (n = 128)	*P* Value*
Very helpful	58 (34.9)	33 (25.8)	.043
Somewhat helpful	95 (57.2)	79 (61.7)	.44
Not at all helpful	4 (2.4)	6 (4.7)	.31
Not sure	9 (5.4)	10 (7.8)	.42
If "No" or "Not sure," do you think your program needs a curriculum for:			
	Residents (n = 101)	Faculty (n = 139)	*P* Value*
Yes	69 (68.3)	95 (68.4)	.99
No	9 (8.9)	14 (10.1)	.76
Not sure	23 (22.8)	30 (21.6)	.83

Data presented are program director (PD) counts (n [%]).
*Linear test of parameter estimates (Adjusted Wald) with one degree of freedom (Sidak-adjusted *p*-values).

Table 4 Sources of Inappropriate Comments or Actions*

Sources of Inappropriate Comments or Actions	Program Directors n = 235†	Residents n = 13,982‡
Patients	225 (95.7)	11,263 (80.6)
Patients' families	188 (80.0)	8313 (59.4)
Nurses	120 (51.1)	4395 (31.4)
Faculty	92 (39.2)	3522 (25.2)
Residents	56 (23.8)	3280 (23.5)
Allied Health personnel	71 (30.2)	1760 (12.6)
Other	5 (2.1)	1178 (8.4)

IM = internal medicine; PD = program director.

*Comparison between IM PD responses and IM resident responses reported previously (Finn et al, 2022).[21] Respondents were allowed to select more than one item.

†"Never" and "unsure" responses removed from Program Directors denominator.

‡"Not applicable" responses excluded from Residents denominator.[21]

based mistreatment "never" or "infrequently"; notably, IMG residents have previously been found to report experiencing and witnessing mistreatment,[21] sexual harassment, bullying, and burnout[29] less frequently than US medical graduates. Our sensitivity analysis of program directors who responded "never" also identified an unexpectedly high percentage of program directors who self-identify as South Asian (8 of 22 "never" respondents [36.4%], 7 of whom had graduated from international medical schools); however, the significance of this finding, particularly with such small numbers, is uncertain and warrants additional exploration.

Less than one-half of program directors reported formally assessing residents experience of bias, with the rest relying on informal conversations with program leadership or faculty or other reporting systems. Previous studies have found that most residents who experience mistreatment do not report incidents to their institution for a variety of reasons, including majorities perceiving futility and fearing retaliation;[10,14] indeed, the 2021 ACGME Clinical Learning Environment Review (CLER) National Summary found that many residents "would not report mistreatment out of concern for adverse consequences of reporting."[30] A systematic review of surgery residents found that the majority who did report incidents indicated that reporting was an adverse experience.[14] These results suggest that relying on residents to initiate reporting of identity-based mistreatment is insufficient for effectively monitoring and addressing mistreatment.

A national survey of surgery resident experiences of mistreatment found considerable program-level variation in the rate of mistreatment reported;[9] further, comparison between surgery resident and program director perceptions found that program directors "vastly underestimated the proportion of residents reporting" mistreatment.[24] A number of strategies intended to improve institutional culture for supporting health care workers and trainees through incidents of mistreatment have been described,[28,31-47] but their implementation depends on program leadership awareness and prioritization. Program directors who are unaware of resident mistreatment cannot effectively support residents after they've experienced mistreatment or help improve the culture within which residents experience mistreatment.

Program director reporting of the most likely sources of bias mirrored resident-reported sources of bias (Table 4).[21] Concerningly, substantial numbers of both program directors and residents reported nurses, faculty, residents, and allied health personnel as common sources of mistreatment of residents, which suggests continued inadequate strategies for promoting institutional culture that emphasizes mutual respect and addresses mistreatment by employees.

We found that 62% of program directors reported having a curriculum to teach residents how to respond to episodes of bias or discrimination, which contrasts with only 20% of internal medicine residents reporting that their program has a curriculum to teach residents how to respond effectively.[21] It is unclear why resident reporting was substantially lower than program directors', but it is possible that residents had not yet completed the curriculum planned by the program at the time of the resident survey or that residents did not remember or identify training as intended to manage identity-based mistreatment incidents. Previous literature indicates that physicians and trainees want this training,[10,19,31,44] while few described their training in this area as "adequate."[10] Trainees perceive multiple barriers to responding constructively to incidents of bias, including lack of training and preparation to manage incidents of bias, lack of attending physician and institutional support, and unawareness of policies defining trainee rights.[19]

This study has some important limitations. Survey research inherently is subject to some degree of error and bias based on factors such as nonresponse or item nonresponse, respondent error (eg, misinterpretation of questions/items, input errors), recall bias, and construct validity. The wording of the question "How often do you believe that your residents have personally experienced inappropriate comments or actions based on their identity markers (eg, gender, race, ethnicity, sexual orientation, disabilities) while working as a resident?" leaves some interpretation as to whether they should respond from the perspective of any individual resident (who may experience bias infrequently) or from the whole population of residents in their program (eg, with 50-plus residents in a typical program, bias events among about 25 residents in 1 year might be considered "infrequent" but could also rationally be described as "sometimes" or even "frequent").

CONCLUSION

We found that internal medicine program director perception of the frequency with which residents

experience bias and discrimination varied from "never" to "frequently," despite 30 years of literature describing the frequency of resident mistreatment; that many programs rely on residents to actively report incidents of mistreatment, even though prior literature has described the inadequacy of this approach; and that program processes for identifying and preparing residents and faculty to manage these incidents are highly variable. Our results suggest that the development and sharing of best practices for capturing resident experiences of mistreatment and curricula aimed at how to manage discrimination, bias, and mistreatment would be beneficial.

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PRIOR PRESENTATION

A poster summarizing the findings was presented at the 2022 APDIM Fall Meeting, in San Diego, California, September 2022.

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SUPPLEMENTARY DATA

Supplementary data to this article can be found online at https://doi.org/10.1016/j.amjmed.2023.03.003.

APPENDIX

Methods

To assess the statistical representativeness of the survey responses, we identified variables (from the external data sources described above) that demonstrated the most predictive power with respect to program study eligibility. We first used a probit regression model (testing for multicollinearity) with "study-eligible" status (yes/no; n = 546/583) as the dependent variable and robust standard errors clustered on residency program Accreditation Council for Graduate Medical Education accreditation year quintile (pseudo $R^2 = 0.63$; log pseudolikelihood = −88.2). Variables that demonstrated statistical significance below our alpha level were then used to compare the "study-eligible" population with the "survey-eligible" population through a multivariate test of covariance (adjusted likelihood ratio Chi-square [28 degrees of freedom] = 623.3; $P = .231$). Thus, the "survey-eligible" population was generally (statistically) representative of the "study-eligible" population.

We performed a second probit regression model with respondent status (yes/no) as the dependent variable and robust standard errors clustered on residency program accreditation year quintile (pseudo $R^2 = 0.65$; log pseudolikelihood = −46.6) to assess the predictive power of the variables identified in the first model on the survey-eligible population. Variables that demonstrated significance below our alpha level were used to report the statistical representativeness of the results (see Supplementary Table).

We compared survey respondents and nonrespondents using characteristics that explained most of the study population variance and likelihood of responding to the survey. Specifically, we tested for goodness-of-fit or associations between categorical variables using the Adjusted Wald (Pearson) Chi-Square test of association (with one degree of freedom). Due to the nonnormal, nonparametric distribution of continuous variables in our dataset, we used the Mann-Whitney-Wilcoxon test for comparisons of dichotomous variables by groups, reporting means and standard deviations with medians and interquartile ranges.

Survey Instrument

1. How often do you believe that your residents have personally experienced inappropriate comments or actions based on their identity markers (eg, gender, race, ethnicity, sexual orientation, disabilities) while working as a resident?

   ○ Never
   ○ Infrequently
   ○ Sometimes
   ○ Frequently

2. Who do you believe have been the sources of the inappropriate comments or actions experienced by your current group of residents?

   ○ Patients
   ○ Patient families
   ○ Nurses
   ○ Faculty
   ○ Allied health personnel
   ○ Residents
   ○ Other
   ○ Not sure

3. How do you, as program director, learn of these events?

   ○ Targeted residents contact me directly or visit my office
   ○ Targeted residents speak with the chief residents who then inform me
   ○ Targeted residents speak with medicine faculty who then inform me
   ○ Other trainees who were not directly targeted (eg, medical students, other residents)
   ○ Other non-trainees (eg, nursing, human resources, administration, faculty from other departments)
   ○ Patient safety reporting system
   ○ Other reporting systems (eg, graduate medical education office mistreatment reporting, "harassment hotline," human resources reporting)
   ○ Other (please specify):

4. Does your program formally assess whether residents have witnessed or experienced inappropriate comments or actions based on identity markers (eg, gender, race, ethnicity, sexual orientation, disabilities)?

   ○ No
   ○ Yes
   ○ Not Sure

5. [For PDs who answered "yes" to 4] How does your program formally assess whether residents have witnessed or experienced inappropriate comments or actions based on identity markers (eg, gender, race, ethnicity, sexual orientation, disabilities)?

   ○ Survey(s) of residents
   ○ Structured semi-annual review discussion
   ○ Patient safety reporting system
   ○ Other (please specify)

6. For the following, does your program have a curriculum that teaches them how to respond to inappropriate comments or actions based on identity

Supplementary Table Essential Characteristics of Responding and Nonresponding Internal Medicine Residency Programs: 2021 APDIM Survey of US Internal Medicine Residency Program Directors

	Respondents (n = 267)	Nonrespondents (n = 172)	Total (n = 439)	*P* Value*
	n (Column %)	n (Column %)	n (Column %)	
Program type (AMA-FREIDA)				
University-based	99 (37.1)	42 (24.4)	141 (32.1)	.079
Community-based	45 (16.9)	34 (19.8)	79 (18.0)	.481
Community-based, university-affiliated	120 (44.9)	93 (54.1)	213 (48.5)	.176
Military-based	3 (1.1)	3 (1.7)	6 (1.4)	.476
Census region (US Census Bureau)†				
Midwest	58 (21.7)	39 (22.7)	97 (22.1)	.866
Northeast	82 (30.7)	50 (29.1)	132 (30.1)	.760
West	87 (32.6)	54 (31.4)	141 (32.1)	.883
South	40 (15)	29 (16.9)	69 (15.7)	.632
Offers preliminary positions: Yes (AMA-FREIDA)	195 (73.0)	122 (70.9)	317 (72.2)	.691
VA affiliation: Yes (ACGME)	102 (38.2)	63 (36.6)	165 (37.6)	.776
Accreditation status (ACGME)				
Continued or continued with warning	256 (95.9)	161 (93.6)	417 (95.0)	.249
Initial or initial with warning	11 (4.1)	11 (6.4)	22 (5.0)	
	Mean (SD), Median (IQR)	Mean (SD), Median (IQR)	Mean (SD), Median (IQR)	*P* Value‡
Program size: No. ACGME-approved positions	66.2 (40.5), 53 (63)	63.3 (40.7), 51 (39.5)	65.1 (40.5), 52 (47)	.629
ABIM pass rate 2018-2020 (%); n = 247, n = 154, n = 401	92.0 (9.2), 95 (8)	90.0 (12.1), 92.5 (9)	91.3 (10.4), 94 (9)	.056
Program director tenure as of 2021 (years; ACGME)	5.7 (5.3), 5 (6)	6.1 (6.7), 4 (8)	5.9 (5.9), 4 (6)	.385
Program accreditation year (ACGME)	1977.0 (24.6), 1970 (51)	1979.5 (24.7), 1974 (50)	1978.0 (24.6), 1971 (50)	.188
Average USMLE Step 1 Score (FREIDA); n = 213, n = 141, n = 354	212.3 (11.4), 210 (20)	213.8 (12.3), 216 (20)	212.9 (11.8), 215 (20)	.254

ABIM = American Board of Internal Medicine; ACGME = Accreditation Council for Graduate Medical Education; AMA-FREIDA = American Medical Association Residency and Fellowship Database; APDIM = Association of Program Directors in Internal Medicine; IQR = interquartile range; SD = standard deviation; USMLE = United States Medical Licensing Examination; VA = Veterans Affairs.

Table displays variables that explained the most survey population variance and likelihood of responding to the survey: probit regression model (dependent variable: respondent status [yes/no]) with robust standard errors clustered on residency program accreditation year quintile; pseudo $R^2 = 0.65$; log pseudolikelihood = −46.6.

*(Adjusted Wald [Pearson]) test of association with one degree of freedom) used for categorical variables.

†Collapses 3 programs from US territories into "West," due to small cell sizes/data confidentiality.

‡Mann-Whitney-Wilcoxon test [means and SD reported for illustration].

markers (gender, race, ethnicity, religion, sexual orientation, disabilities)?

- Residents
  - ○ No
  - ○ Yes
  - ○ Not Sure
- Faculty
  - ○ No
  - ○ Yes
  - ○ Not Sure

7. [for PDs who answered "Yes" to Q6] How helpful do you think that your curriculum is for...
   - Residents
     - ○ Not at all helpful
     - ○ Somewhat helpful
     - ○ Very helpful
     - ○ Not sure
   - Faculty
     - ○ Not at all helpful
     - ○ Somewhat helpful
     - ○ Very helpful
     - ○ Not sure
8. [PDs who answered "No" or "Not sure" to Q6] For the following, do you think that your program needs a curriculum that teaches them how to

respond to inappropriate comments or actions based on identity markers (gender, race, ethnicity, religion, sexual orientation, disabilities)?

- Residents
  - ○ No
  - ○ Yes
  - ○ Not sure
- Faculty
  - ○ No
  - ○ Yes
  - ○ Not sure

9. Does your institution, department, or program have a policy identifying employees' rights (including residents) related to bias and discrimination from patients, families, and / or other healthcare workers?
   - ○ No
   - ○ Yes
   - ○ Not sure
10. On average, how many months does an individual resident in your program spend in a Veteran Affairs (VA) setting over their 36 months of training?
11. In which settings do you believe that your residents experience inappropriate comments or actions based on identity markers?
    - ○ Non-VA settings
    - ○ VA settings
    - ○ Both VA and non-VA settings
    - ○ At neither type of setting