A Multi-Site Survey of General Psychiatry Residents' Forensic Training

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The authors surveyed general psychiatry residents across the United States to better understand residents' experiences with forensic training and to identify variables with the greatest impact on residents' exposure to, comfort with, and desire to learn more about forensic populations and settings. The survey inquired about these topics and the forensic psychiatry resources available at residents' training institutions. Respondents ($n = 129$) spanned eight of ten U.S. census regions. Residents' comfort with forensic psychiatry was low, whereas desire to learn was high. Residents' number of exposures and comfort increased with greater forensic experience in residency. Fewer than half of residents had completed a forensic rotation, were required to complete a forensic rotation, or had robust forensic resources available to them. Residents who had completed a dedicated forensic rotation had significantly greater forensic exposures and comfort; a finding that remained significant even after controlling for participants' PGY status. Among residents pursuing fellowship training, residents interested in forensic fellowship had more exposures during residency. This study represents the first published effort to survey general psychiatry residents from multiple residency programs regarding their forensic experiences in training. These results have implications for educators interested in developing broader exposure to and comfort with forensic psychiatry.

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Over the last 60 years, psychiatric care has shifted from institutional to community settings. This deinstitutionalization correlates with an increase in the number of individuals with mental illness housed in jails and prisons across the United States. Reports over the last 15 years suggest that over half of all people who are incarcerated have a mental health problem[1] and approximately 15 to 20 percent have a serious mental illness.[2] As the population of individuals with mental illness and criminal justice involvement grows, so does the need for psychiatrists to better understand unique care considerations for this population and other aspects of forensic psychiatry that permeate general psychiatric practice, including the legal regulation of psychiatry. A strong foundation in forensic topics is crucial for understanding medico-legal principles and engaging in sound clinical practice.

As defined by the Accreditation Council of Graduate Medical Education (ACGME), forensic psychiatry is a subspecialty that focuses on "interrelationships between psychiatry and the law (including civil, criminal, and administrative law)."[3] This includes the evaluation and treatment of individuals currently involved in the legal system, the specialized treatment required by those who have been incarcerated, and involvement in legal regulations that overlap with

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general psychiatric practice.[3] Board certification in forensic psychiatry by the American Board of Psychiatry and Neurology began in 1994 and as of 2019, there were just over 2,500 board certified forensic psychiatrists in the country[4] with their distribution varying greatly between states.[5] Further, even if all board-certified forensic psychiatrists cared for justice-involved individuals, there would not be enough to meet the care needs.[6] With such limited supply, uneven distribution, and an expanding population of patients with criminal justice involvement, most general psychiatrists will encounter forensic patients and questions in their career. Therefore, it is important that all psychiatrists be well trained in and comfortable with forensic topics.

Currently, the ACGME requires psychiatry residents to complete a forensic experience that includes "experience evaluating patients' potential to harm themselves or others, appropriateness for commitment, decisional capacity, disability, and competency."[3] Unlike other subspecialties there is little guidance about the amount of time or type of exposure that is considered adequate. As a result, there is significant variability in the training residents receive through elective or mandated didactics and clinical rotations.[5,7,8]

In a 2014 survey, 93 percent of responding program directors felt their program met the ACGME forensic psychiatry requirement, often through classroom experiences rather than clinical experiences.[9] In a survey of Canadian psychiatry residents, only 33.8 percent of survey respondents indicated that they had completed or intended to complete a forensic rotation.[10] Residents also expressed an overall discomfort when confronting forensic matters or treating patients with medicolegal concerns. Another study of resident knowledge found confusion and improper application of local commitment laws in sample cases.[11]

Forensic exposure during residency may improve residents' understanding of the legal system as well as their knowledge, comfort, and interest in working with criminal justice involved patients. Existing studies suggest that forensic training through didactics or clinical exposure can increase comfort, interest in, and attitude toward forensic matters,[6,10,12] with some possible additional benefits with clinical experiences.[10,13] Resident knowledge in forensic psychiatry (as measured via PRITE subspecialty scores) improved following the expansion of residents' exposure to forensics through creation of a forensic fellowship program.[14] Further, the implementation of a mandatory forensic rotation at one training program led residents to report increased interest in forensic patients, settings, and forensic fellowship, though did not significantly increase residents' self-reported knowledge or comfort in these areas.[13] In his 2019 American Academy of Psychiatry and the Law (AAPL) President's Address, Frierson lauded the benefits of forensic training in residency and advocated for its expansion.[15] The same year, AAPL published a dedicated practice resource for general psychiatry residency directors and their core faculty members on how to both provide and improve forensic psychiatry training for general residents and included recommendations applicable to programs with limited academic forensic resources.[16]

In this study, the authors surveyed general psychiatry residents around the United States to better understand residents' experiences with forensic training. The authors sought to identify the training variables associated with greatest impact on residents' exposure to, comfort with, and desire to learn more about forensic populations and settings. The authors hypothesized that those residents who had completed a forensic rotation or attended a program with higher saturation in forensic psychiatry resources (e.g., required forensic rotations, fellowship, dedicated forensics department) would have greater levels of exposure, comfort, and interest when compared with residents with fewer such opportunities and would be more interested in pursuing a forensic fellowship after residency. The discussion highlights the implications of the survey results, including considerations for the design and development of forensic training for general psychiatrists.

Methods

Survey

The authors developed a survey to query general psychiatry residents' forensic experiences, exposures, and resources during training. From May to August 2018 the authors twice emailed the American Association of Directors of Psychiatric Residency Training Program Coordinators listserv requesting that Program Coordinators disseminate the survey link to their program's general psychiatry residents.

The survey included four parts (see Appendix in online version of this article). First, it inquired about

basic demographic information, including age, gender, U.S. versus international medical graduate status, location of psychiatry residency, and year in training. Second, the survey asked about several elements of residents' forensic training, including didactic offerings, clinical experiences, faculty members' forensic training, and departmental forensic resources (e.g., forensic psychiatry department within the department and forensic fellowship). Third, the survey queried residents' exposure to, comfort with, and desire to learn more about various forensic topics and populations. Exposure questions were binary (yes/no), whereas comfort and desire to learn questions were scored on a Likert scale. Finally, the survey asked about residents' desire to pursue various types of sub-specialty fellowship training within psychiatry.

Questions related to residents' exposure, comfort, and desire to learn inquired about these domains as they pertained to forensic psychiatric populations, settings, court-based experiences, civil forensic psychiatry experiences, and forensic experiences in general psychiatry settings. The listed forensic populations included patients with a criminal justice history, with ongoing criminal justice involvement, currently in custody, and with a history of sexual misconduct or paraphilias. The forensic settings encompassed correctional institutions, forensic psychiatric hospitals, mental health or drug courts, and jail diversion programs. The court-based experiences included evaluations of competence to stand trial or criminal responsibility, writing a forensic report, or testifying in a real or mock trial. The questions about civil forensic psychiatry experiences queried resident exposure to any one of several topics (e.g., malpractice, disability, and testamentary capacity). The forensic topics encountered in general psychiatry settings comprised civil commitment hearings, involuntary medication hearings, and guardianship/conservatorship evaluations or hearings, among others.

Responses were collected anonymously. Participants were informed that completion of the survey implied informed consent to participate in the study. The Human Subjects Committee of the Yale University Institutional Review Board granted this work exemption from review.

Statistical Analysis

In the statistical analyses, primary measures explored included participants' exposure to, comfort with, and desire to learn more about forensic topics and populations. Participants' desire to pursue a forensic psychiatry fellowship was a secondary outcome measure. Potential explanatory variables explored included completion of a forensic clinical rotation (dedicated rotation introducing residents to forensic psychiatric practice), presence of a required forensic clinical rotation in the training program, dedicated forensic psychiatry department or fellowship at the institution, and the residents' PGY status. Each analysis included the total number of subjects who completed all sub-questions analyzed to maximize power, but this led to variable sample sizes throughout the analysis with smaller sample sizes for questions that occurred later in the survey due to participant attrition. The authors analyzed the five-point Likert scale questions using a range of scores from -2 (*very low comfort/interest*) to 2 (*very high comfort/interest*). The analysis averaged comfort/interest levels of all subquestions for a question block to calculate comfort/interest scores for a given block. Similarly, the analysis averaged responses over all subquestions in all blocks to calculate the overall comfort/interest scores. The authors used nonparametric Wilcoxon-Mann-Whitney tests to evaluate associations between outcome measures and explanatory variables. The analysis used rank-statistic based permutation methods to test the association between rotation completion and each of the three primary outcome measures while controlling for the PGY status. Analyses were completed using statistical software R.[17] Functions available in R-package coin (conditional inference) were used to conduct Wilcoxon-Mann-Whitney and permutation tests.[18]

Results

Sample Characteristics

A total of 129 residents participated in the survey (2% of all psychiatry residents nationally).[19] See Table 1 for demographic details. The gender split demonstrated a higher proportion of female participants compared with the relatively even gender divide among residents nationally,[19] but there were no statistically significant differences by gender across any outcomes described below. U.S. graduates made up the large majority of respondents. Responses came from eight of ten geographic U.S. census regions.

Table 1 Demographic Information for Subjects

	Subjects ($n = 129$)
Gender	
Female	82 (64%)
Male	46 (35%)
Unspecified	1 (1%)
Medical school graduate status	
U.S.	111 (86%)
I.M.G.[a]	18 (14%)
Year in training	
PGY-1	32 (25%)
PGY-2	31 (24%)
PGY-3	28 (22%)
PGY-4+[b]	38 (29%)
Geographic region[c]	
Middle Atlantic	30 (23%)
Mountain	0
New England	20 (15%)
Pacific	12 (9%)
Puerto Rico	0
South Atlantic	10 (8%)
West North Central	5 (4%)
West South Central	17 (13%)
East North Central	28 (22%)
East South Central	7 (5%)

[a]International medical graduate.
[b]Combined results from those subjects marking "PGY-4" or "PGY-5 or greater".
[c]Please see Q2.5 in Appendix for states included in each region.

There was some attrition as participants moved through the survey with fewer responses to questions later in the survey. One hundred and one subjects completed the survey in its entirety. The average time to complete the survey was 10.3 minutes. Overall comfort with forensic topics was generally low (−.59, $P < .001$) and desire to learn more about forensic topics was high (.9, $p < .001$). Each subtopic had an average comfort score below zero and average desire to learn above zero, with the majority of findings reaching statistical significance. Table 2 provides greater detail about participant comfort and interest with various forensic sub-topics.

There was a relatively even distribution of participants by postgraduate year, with 32 (25%) PGY1s, 31 (24%) PGY2s, 28 (22%) PGY3s, 30 (23%) PGY4s, and eight (6%) PGY5+ residents (PGY5 or PGY6). For the purpose of statistical analysis, the PGY4 and PGY5+ groups were combined into a single PGY4+ group (38 participants; 29%) because the PGY5+ group was too small to power meaningful comparisons and the authors felt PGY4 and PGY5+ participants were sufficiently similar.

Forensic Rotation Completion

One-hundred twenty-nine subjects responded to questions regarding forensic rotation completion. Fifty had completed the rotation, 6 were currently taking it, 49 indicated they would complete it later in training, 14 indicated they could not, and 10 were not interested. We did not specifically inquire about the year of the forensic rotation, but of the respondents reporting rotation completion, 1 was PGY1, 13 PGY2, 9 PGY3, and 27 PGY4+. To examine the impact of rotation completion on the primary and secondary outcome measures, the 50 rotation completers (39%) were compared with all other participants ($n = 79$ (61%)). Table 3 provides the detailed results of this analysis. The number of subjects decreased in the table due to participant attrition.

The overall exposure was calculated based on yes/no responses to the 24 subquestions divided into five question blocks: forensic populations (4 subquestions), forensic settings (4 subquestions), court-based experiences (4 subquestions), civil forensic experiences (1 subquestion) and forensic experiences in general psychiatry settings (11 subquestions). The reported overall average forensic exposure was 15.61 for rotation-completers and 11.98 for no rotation subjects. The distribution of overall exposure was found to be significantly associated with the rotation completion status (Wilcoxon-Mann-Whitney test, $p < .001$), including significantly greater exposure to forensic populations ($p = .017$), settings ($p < .001$), court-based experiences ($p < .001$), and civil forensic experiences (Fisher's exact test, $p = .026$).

Table 2 Residents' Comfort and Desire to Learn

Topic	Number of Subjects	*M* Comfort (*SD*)	*p* Value	*M* Desire to Learn (SD)	*p* Value
Overall	101	−0.59 (0.55)	<0.001	0.9 (0.62)	<0.001
Forensic populations	121	−0.05 (0.7)	0.418	0.79 (0.79)	<0.001
Forensic settings	119	−0.6 (0.74)	<0.001	0.91 (0.75)	<0.001
Court-based experiences	117	−1.16 (0.72)	<0.001	0.95 (0.79)	<0.001
Civil experiences	117	−1.21 (0.85)	<0.001	0.83 (0.96)	<0.001
General experiences	101	−0.11 (0.64)	0.145	0.93 (0.65)	<0.001

Table 3 Outcomes by Rotation Status

Outcome Measure	Number of Subjects	Rotation Completed	No Rotation	*p* Value
Exposure[a]				
Cumulative exposures: *N* (%)	101	41 (40.59)	60 (59.41)	
Group-wise: *M* (*SD*)		15.61 (3.83)	11.98 (4.52)	<0.001
Forensic populations: *N* (%)	121	46 (38.02)	75 (61.98)	
Group-wise: *M* (*SD*)		3.54 (0.69)	3.13 (0.98)	0.017
Forensic settings: *N* (%)	119	45 (37.82)	74 (62.18)	
Group-wise: *M* (*SD*)		2.07 (1.14)	1.3 (1.14)	<0.001
Court based experiences: *N* (%)	117	45 (38.46)	72 (61.54)	
Group-wise: *M* (*SD*)		2.31 (1.49)	0.89 (1.19)	<0.001
Civil experiences: *N* (%)	117	45 (38.46)	72 (61.54)	
Group-wise: *M* (*SD*)		0.36 (0.48)	0.17 (0.38)	0.026
General experiences: *N* (%)	101	41 (40.59)	60 (59.41)	
Group-wise: *M* (*SD*)		7.24 (2.03)	6.37 (2.5)	0.084
Comfort[b]				
Cumulative comfort	101	41 (40.59)	60 (59.41)	
Group-wise: *M* (*SD*)		−0.44 (0.49)	−0.7 (0.56)	0.01
Forensic populations: *N* (%)	121	46 (38.02)	75 (61.98)	
Group-wise: *M* (*SD*)		0.11 (0.66)	−0.15 (0.71)	0.052
Forensic settings: *N* (%)	119	45 (37.82)	74 (62.18)	
Group-wise: *M* (*SD*)		−0.41 (0.62)	−0.71 (0.78)	0.015
Court based experiences: *N* (%)	117	45 (38.46)	72 (61.54)	
Group-wise: *M* (*SD*)		−0.86 (0.72)	−1.34 (0.66)	<0.001
Civil experiences: *N* (%)	117	45 (38.46)	72 (61.54)	
Group-wise: *M* (*SD*)		−1.04 (0.85)	−1.31 (0.83)	0.056
General experiences: *N* (%)	101	41 (40.59)	60 (59.41)	
Group-wise: *M* (*SD*)		0.02 (0.5)	−0.2 (0.71)	0.128
Desire to Learn[b]				
Cumulative interest	101	41 (40.59)	60 (59.41)	
Group-wise: *M* (*SD*)		0.74 (0.64)	1.02 (0.58)	0.022
Forensic populations: *N* (%)	121	46 (38.02)	75 (61.98)	
Group-wise: *M* (*SD*)		0.7 (0.8)	0.85 (0.78)	0.378
Forensic settings: *N* (%)	119	45 (37.82)	74 (62.18)	
Group-wise: *M* (*SD*)		0.74 (0.76)	1.01 (0.73)	0.044
Court based experiences: *N* (%)	117	45 (38.46)	72 (61.54)	
Group-wise: *M* (*SD*)		0.7 (0.87)	1.1 (0.7)	0.01
Civil experiences: *N* (%)	117	45 (38.46)	72 (61.54)	
Group-wise: *M* (*SD*)		0.71 (0.89)	0.9 (1)	0.198
General experiences: *N* (%)	101	41 (40.59)	60 (59.41)	
Group-wise: *M* (*SD*)		0.83 (0.59)	1 (0.69)	0.153

[a]Measured via yes/no response to whether resident had exposure.
[b]Measured via five-point Likert scale.

Experiences common to general psychiatry settings did not significantly differ between groups.

The comfort with forensic topics was recorded on a five-point Likert scale and the overall comfort score of all 101 survey completers was −.59. The deviation of the overall comfort score from the neutral value of 0 was statistically significant using the Wilcoxon signed-rank test ($p < .001$), indicating an overall discomfort with forensic topics. When comparing rotation completers with the no-rotation group, however, rotation completion was significantly associated with greater cumulative comfort ($p = .01$) and specifically greater comfort with forensic settings ($p = .015$) and court-based experiences ($p < .001$). There was also a trend toward greater comfort specifically with forensic populations ($p = .052$) and civil experiences ($p = .056$). No differences in comfort were found with forensic topics in general psychiatry forensic experiences.

The desire to learn more was similarly recorded on a five-point Likert scale. Thus, the steps of analysis closely resembled those in comfort scores. The overall interest score of all 101 survey completers was .9. The deviation of the overall interest score from the neutral value of 0 was found to be statistically significant using the Wilcoxon signed-rank test ($p < .001$), indicating an overall positive desire to learn more about the forensic cases. Comparing the groups, the

interest scores were .74 for rotation completers and 1.02 for the no-rotation group (Wilcoxon-Mann-Whitney test $p = .022$). Thus, although both groups expressed interest in learning more about forensic topics, the overall desire to learn more about forensic psychiatry topics was significantly lower for rotation completers, with significant differences found specifically for forensic settings ($p = .015$) and court-based experiences ($p = .01$).

A secondary analysis looked at rotation impact while controlling for participants' PGY status, with PGY-1 residents removed from the analysis because only one had completed a rotation. When controlling for PGY status, exposures among rotation completers were still significantly increased for overall number of exposures and for forensic settings and court-based evaluations. Comfort with forensic settings and court-based evaluations were also still significantly increased, though overall comfort was no longer significant. After controlling for PGY status, desire to learn was no longer lower for rotation completers.

Forensic Rotation Required by Residency

The authors assessed the impact of residency programs having a required rotation using similar analyses to those described above. Of 129 respondents, 58 (45%) reported having a required rotation versus 71 (55%) with no required forensic rotation. The analysis again examined differences between groups regarding exposure, comfort, desire to learn, and interest in forensic fellowship. Those analyses found respondents from programs with a required rotation indicated significantly greater overall exposure ($p = .044$) and, specifically, exposure to forensic populations ($p = .049$), forensic settings ($p = .004$), and court-based experiences ($p = .006$). They also reported significantly greater comfort with court-based experiences ($p = .036$), but no other differences in comfort, including overall comfort, and no differences in desire to learn more.

Strength of Institution's Forensic Resources

The authors next examined the impact of the residency institution's forensic resources. This was assessed by surveying whether the residents' institution had a dedicated forensic psychiatry department, forensic psychiatry fellowship, forensic psychiatrists on faculty without a distinct department or fellowship, or none of these resources. Residents who responded that their institution had either a forensic psychiatry department or fellowship were considered to have "robust" forensic psychiatry resources. These respondents were then compared with all other subjects without such robust resources. Residents who responded they were unsure about their program's resources were removed from the analysis.

One hundred and twenty-nine subjects completed questions related to the robustness of forensic resources, with 53 (41%) indicating robust institutional resources, 61 (47%) lack of robust resources, and 15 (12%) unsure. We performed the same analyses as described above assessing differences between the robust and not robust groups regarding exposure, comfort, desire to learn, and forensic fellowship interest. Those analyses did not find significant differences in overall exposures, though there were significantly greater exposures to forensic settings ($p = .029$) and civil forensic experiences ($p = .021$) among residents from programs with robust resources. There were no significant differences between groups with respect to comfort or desire to learn.

Forensic Fellowship Interest

The authors finally assessed the impact of forensic training exposures on interest in pursuing a fellowship in forensic psychiatry. One hundred and one subjects completed questions related to fellowship interest, with 30 percent expressing interest in child and adolescent, 13 percent forensics, nine percent a non-ACGME fellowship, eight percent consult-liaison, five percent addiction, five percent geriatrics, and 30 percent indicating they did not plan to pursue a fellowship. Among all psychiatry residents nationally enrolled in a fellowship in 2019, 74 percent were child and adolescent, seven percent addiction, six percent forensics, six percent consult-liaison, four percent geriatrics, and three percent non-ACGME.[19] Recognizing that there is a subset of psychiatrists who will not pursue additional subspecialty training after residency, we removed the 30 subjects not interested in pursuing fellowship from our analysis. The distribution of level of exposure to forensic cases of these 13 individuals with interest in forensic fellowship was compared with that of the remaining 58 individuals using the Wilcoxon-Mann-Whitney test. Greater overall exposure to forensic experiences during residency was associated with interest in pursuing forensic fellowship ($p < .001$), as was increased exposure to forensic settings ($p < .001$), courtroom-based experiences ($p < .001$), and general forensic

experiences ($p = .01$), but not exposure to forensic populations or civil forensic experiences. None of the primary explanatory variables reviewed above (i.e., rotation completion, required forensic rotation, etc.) was significantly associated with forensic fellowship interest.

Discussion

The authors surveyed a sample of general psychiatry residents from multiple residency programs to understand the breadth of residents' forensic training. The analysis explored the impact of various training experiences on residents' forensic exposures and comfort with and desire to learn more about various elements of forensic psychiatry, as well as their interest in pursuing a forensic fellowship. The authors hypothesized that residents with greater forensic opportunities and resources would have significantly greater exposures, comfort with forensic topics, interest in learning more about forensics, and interest in forensic fellowship. Our results demonstrate far more nuanced relationships between these training experiences and identified outcome measures.

Overall, despite a 2014 report that over 90 percent of residency programs met ACGME forensic psychiatry requirements,[9] in our survey resident comfort with forensic psychiatry was low and desire to learn about forensic psychiatry was high. This finding was consistent across all subtopics queried. Notably, even PGY4+ trainees report relatively low levels of comfort and high levels of interest. The interest and comfort gap suggest that residents recognize the importance of forensic topics to their work and remain interested in learning about them but receive insufficient education to feel comfortable with these areas of practice. The discrepancy between low levels of comfort and the high percentage of programs meeting ACGME requirements raises questions about how residency programs are meeting these requirements. The lack of specificity by the ACGME may lead to considerable variation in implementation between programs and inconsistent training experiences for general residents. In some programs, residents may not recognize an experience as "forensic" and in others, the heavy reliance on classroom didactics, may offer few opportunities to receive practice or coaching in forensic skills, knowledge, or attitudes. The survey responses may also reflect that forensic topics continue to provoke anxiety among residents, perhaps because of lack of familiarity or the challenging nature of some of the subject material. These findings underscore the importance of continuing to develop dedicated forensic educational opportunities for general psychiatry residents to address their desire to learn, improve their sense of comfort with forensic topics and populations, and prepare them to meet the demands of caring for justice-involved patients.[6,10,16,20]

Unsurprisingly, residents' number of exposures and comfort increased with increasing experience in residency. Although there were almost twice as many female respondents, no statistically significant differences were found by gender for any outcome measure. The survey had broad geographic representation, with responses from eight of ten U.S. census regions, though samples from each individual region were too small to assess for significant differences by region. Fewer than half of residents had completed a forensic rotation (consistent with prior work in a study of Canadian psychiatry residents),[10] were required to complete a forensic rotation, or had robust forensic resources available to them during training. Unlike the Canadian survey, however, the majority of those who had not yet completed a rotation, planned to do so during training.

Consistent with our hypotheses, residents who had completed a dedicated forensic rotation had significantly greater forensic exposures and comfort and these findings generally remained significant even after controlling for participants' PGY status. In addition, among residents pursuing fellowship training, residents interested in forensic psychiatry fellowship had more forensic exposures during residency, with specific differences found for forensic settings, courtroom-based experiences, and forensic experiences on general psychiatry rotations.

Interestingly, residents who had completed a forensic rotation reported high interest in learning more about forensic topics, but less than residents who had not completed a rotation. This finding contrasted with the authors' hypotheses and prior work exploring the connection between forensic education and resident interest.[10,13] Taken by itself, it is possible that some rotation completers expressed less interest than their peers because their forensic rotation had adequately addressed their learning needs. Secondary analyses controlling for PGY status did not find a significant difference in interest between groups, however, suggesting that any difference may be more likely related to participants' stage of training rather

than rotation completion. In other words, while more senior residents have completed a rotation than their junior counterparts, they also have narrower training interests as they near graduation.

Although we were unable to control for the quantity or quality of classroom didactics, our results suggest that developing a dedicated forensic psychiatry rotation may be important for improving residents' forensic training. Completing a forensic rotation was the only variable found to significantly increase residents' exposures and comfort. Rotation completion did not influence exposures in general psychiatry settings, but this was not surprising as by definition these experiences occur on nonforensic rotations. Residents were generally uncomfortable with forensic topics, settings, and populations, though rotation completers were significantly less uncomfortable compared with rotation noncompleters, albeit with some of these differences disappearing when analyses were controlled for PGY status. These findings are consistent with Booth *et al.*'s Canadian sample demonstrating that greater forensic clinical experience increased resident comfort.[10] A prior single site American study by several of the authors found a significant increase in interest for rotation completers but not in comfort,[13] suggesting that distinct types of forensic rotations may have different impacts. This remains an area for further study but supports the assertions from Frierson's 2019 presidential address.[15]

Among those interested in pursuing fellowship training, those interested in a forensic fellowship had a greater number of overall forensic exposures with greater exposures in 60 percent of subtopics areas. This finding replicates prior work demonstrating that greater forensic exposures correlates with increased interest in forensic fellowship.[13] This survey was not able to distinguish whether trainees interested in forensic fellowship sought out greater exposures or the exposures themselves influenced participants' interest level. At the very least, additional opportunities for exposure during residency may better prepare future fellows and, at best, may inspire potential fellows.

The present study investigated the impact of two training program variables, not previously explored in the forensic education literature: presence of a required forensic rotation for general psychiatry trainees and the robustness of a department's forensic resources. The authors identified these based on the hypothesis that they represented markers of an institution's dedication to and infrastructure for forensic psychiatry training. Residents whose institution required a forensic rotation had a significantly increased number of forensic exposures (including forensic populations, settings, and courtroom-based experiences), but for the most part this had no impact on residents' desire to learn or their comfort. This may relate to the setting of required rotations in dedicated forensic clinical settings (e.g., correctional setting or forensic hospital) or courtrooms. Given that all residents in the program will complete a rotation by graduation, it is possible that these programs' graduates will also have more exposures and comfort consistent with the rotation completers in this study. Access to robust forensic resources had virtually no impact on residents' overall exposures, comfort, or desire to learn; though more robust forensic resources specifically increased residents' exposure to diverse forensic settings and civil forensic experiences. These findings taken together suggest that the availability of resources is not as impactful as the residents' lived experience; residents' first-hand experience participating in forensic clinical rotations remains critical.

This study had several limitations. Despite its broad geographic reach, the sample size was relatively small (two percent of all psychiatry residents), which limits the generalizability of our results and our ability to draw comparisons between geographic regions. Further, to preserve anonymity, we did not collect program names, so we are unable to determine how many programs are represented and responses (though geographically broad) could be clustered to particular programs within each region. Given prior work demonstrating notable regional disparities in the availability of board-certified forensic psychiatrists,[5] generating larger samples in future studies would help power statistical analyses. There was also a notable attrition rate in survey completion as only 101 of 129 (78%) participants completed the study in full. Women were overrepresented compared with their representation among all psychiatry residents, though this did not appear to affect the results significantly. PGY-3 and PGY-4 residents may have already applied or been accepted into a fellowship program, influencing their response patterns regarding fellowship interest.

Finally, the voluntary nature of the study means that residents with more interest in or exposure to forensic psychiatry may have self-selected to complete the survey, making the results less broadly

generalizable. In fact, this is likely given that most respondents either had or intended to complete a forensic rotation (which is not consistent with the limited prior data available from other studies) and that greater than expected numbers were interested in forensic fellowship compared with national rates. If this is true, however, it suggests we may be overestimating resident exposure to and comfort with forensic topics, which were both relatively low in this sample, potentially highlighting an even greater need for additional forensic clinical experiences.

Conclusions

This study represents the first published effort to survey a sample of general psychiatry residents with broad geographic representation in the United States regarding their forensic psychiatry experiences in training. Our results demonstrate that the respondents uniformly report high levels of interest in forensic psychiatry and low comfort with forensic topics. Further, residents' responses suggest that direct, hands-on experiences in forensic psychiatry can have an impact on residents' attitudes toward the field. Forensic rotation completion significantly increased residents' forensic exposures and, though discomfort with forensic topics remained high, it decreased with rotation completion. An institution's forensic academic structure appeared less impactful than a resident's direct clinical exposure, which may be reassuring for training programs without robust forensic resources currently. Smaller programs and those without significant forensic training already in place may currently have fewer opportunities for residents to gain forensic clinical exposures, but there exist a variety of opportunities for collaboration with local correctional or forensic institutions or other more novel forensic experiences.[16]

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APPENDIX : SURVEY

Start of Block: Consent

Q1.1 We are inviting you to participate in a research project designed to evaluate psychiatry residents' experiences with forensic training. We are forensic psychiatry educators working to improve resident training in forensic psychiatry. Our group includes Tobias Wasser, MD, from Yale University and Katherine Michaelsen, MD, MASc, from the University of Washington.

The survey will take approximately 5 minutes. Your participation is strictly voluntary and anonymous, so neither we nor anyone in your program will know your answers or whether or not you even participated. Your responses will be stored on an encrypted database. The only risk with this type of research is related to potential loss of time and privacy—to prevent the latter, we will not collect any identifiers. The study is not designed to benefit you directly, but your participation may improve training in forensic psychiatry for future general psychiatry residents. If you are interested in a summary of the survey results, you are invited to email tobias.wasser@yale.edu.

By completing this survey, you consent to allow your responses to be included in our research. Thank you for your consideration.

○ I consent (1)
○ I do not consent (2)

Skip To: End of Survey If Q1.1 = I do not consent
End of Block: Consent
Start of Block: Background Information

Q2.1 Please enter your PostGraduate Year (PGY) of training as of May 1, 2018:

○ Medical student or other status (6)
○ PGY-1 (1)
○ PGY-2 (2)
○ PGY-3 (3)

Skip To: End of Survey If Q2.1 = Medical student or other status

*

Q2.2 Please enter your age:

_____

*

Q2.3 How do you gender identify?

_____

Q2.4 Please identify whether you are a U.S. or International Medical Graduate (IMG):

○ U.S. (1)
○ I.M.G. (3)

Q2.5 In which region of the U.S. is your residency program located?

○ New England (Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, and Vermont) (1)
○ Mid-Atlantic (New Jersey, New York, and Pennsylvania) (12)
○ East North Central (Illinois, Indiana, Michigan, Ohio, and Wisconsin) (13)
○ West North Central (Iowa, Kansas, Minnesota, Missouri, Nebraska, North Dakota, and South Dakota) (14)
○ South Atlantic (Delaware, Florida, Georgia, Maryland, North Carolina, South Carolina, Virginia, District of Columbia, and West Virginia) (15)
○ East South Central (Alabama, Kentucky, Mississippi, and Tennessee) (16)
○ West South Central (Arkansas, Louisiana, Oklahoma, and Texas) (17)
○ Mountain (Arizona, Colorado, Idaho, Montana, Nevada, New Mexico, Utah, and Wyoming) (18)
○ Pacific (Alaska, California, Hawaii, Oregon, and Washington) (19)

Q2.6 In your opinion, which of the following areas fall within the domain of forensic psychiatry?
(Please choose all that apply)

☐ Violence (1)
☐ Criminal responsibility (2)
☐ Competence, civil and criminal (3)
☐ Child custody and visitation (4)
☐ Emotional injury (5)
☐ Mental disability (6)
☐ Malpractice (7)
☐ Confidentiality (8)
☐ Involuntary treatment (9)
☐ Correctional psychiatry (10)
☐ Juvenile justice (11)
☐ Ethics and human rights (12)

Q2.7 For the purposes of this survey, forensic psychiatry is defined as a medical sub-specialty that includes research and clinical practice in the many areas in which psychiatry is applied to legal issues, including all of the options listed in the prior question.

Thus, the discipline of forensic psychiatry includes all of the following areas:

Violence
Criminal responsibility
Competence, civil and criminal
Child custody and visitation
Emotional injury
Mental disability
Malpractice
Confidentiality
Involuntary treatment
Correctional psychiatry
Juvenile justice
Ethics and human rights

○ I understand (1)

Q2.8 Prior to starting your psychiatry residency, did you have any professional experiences pertaining to forensic psychiatry?

○ Yes (1)
○ No (2)
○ Not sure (3)

Q2.9 Does the institution associated with your residency program have (please click all that apply):

☐ A forensic psychiatry department (1)
☐ A forensic psychiatry fellowship (4)
☐ Forensic psychiatrists on faculty without a distinct department/fellowship (2)
☐ Not sure (3)
☐ None of the above (7)

Q2.10 Does your residency offer lectures or other classroom-based instruction in forensic psychiatry?

○ Yes (1)
○ No (2)
○ Not sure (3)

Q2.11 Which of the following types of forensic psychiatry experiences does your residency offer? (please click all that apply)

☐ Required forensic rotation(s) (2)
☐ Elective forensic rotation(s) at your institution (5)
☐ Elective forensic rotation(s) outside your institution (away rotation) (8)
☐ Courtroom mock trial (11)
☐ None of the above (7)

Display This Question:

If Q2.11! = None of the above

Q2.12 Have you completed these experiences?

○ Yes (1)
○ Currently participating in it (3)
○ Not yet, will do later (4)
○ Not interested (6)

End of Block: Background Information
Start of Block: Exposure, Comfort and Interest

Q3.1 Please describe your level of exposure to, comfort with, and desire to learn more about working with the following patient populations:

	Exposure	Comfort Level	Desire to Learn
Patients with a criminal justice history (e.g. previously incarcerated) (6)	▼ No (1) . . . Yes (2)	▼ Very low (1) . . . Very high (5)	▼ None at all (1) . . . Very high (5)
Patients with ongoing criminal justice involvement (e.g. on probation) (2)	▼ No (1) . . . Yes (2)	▼ Very low (1) . . . Very high (5)	▼ None at all (1) . . . Very high (5)
Patients currently in custody (7)	▼ No (1) . . . Yes (2)	▼ Very low (1) . . . Very high (5)	▼ None at all (1) . . . Very high (5)
Patients with a history of sexual misconduct or paraphilias (4)	▼ No (1) . . . Yes (2)	▼ Very low (1) . . . Very high (5)	▼ None at all (1) . . . Very high (5)

Q3.2 Regarding patients in different health care settings or programs, please describe your level of exposure to, comfort with, and desire to learn more about:

	Exposure	Comfort Level	Desire to Learn
Jails, prisons or the juvenile justice system (6)	▼ No (1) . . . Yes (2)	▼ Very low (1) . . . Very high (5)	▼ None at all (1) . . . Very high (5)
Forensic psychiatric hospitals (2)	▼ No (1) . . . Yes (2)	▼ Very low (1) . . . Very high (5)	▼ None at all (1) . . . Very high (5)
Mental health or drug courts (7)	▼ No (1) . . . Yes (2)	▼ Very low (1) . . . Very high (5)	▼ None at all (1) . . . Very high (5)
Jail diversion programs (4)	▼ No (1) . . . Yes (2)	▼ Very low (1). . . Very high (5)	▼ None at all (1) . . . Very high (5)

Q3.3 Please describe your level of exposure to, comfort with, and desire to learn more about the following court-based evaluations or experiences:

	Exposure	Comfort Level	Desire to Learn
Evaluation of competency to stand trial (6)	▼ Not yet (1) . . . Personally completed (3)	▼ Very low (1) . . . Very high (5)	▼ None at all (1) . . . Very high (5)
Evaluation of criminal responsibility (i.e. not guilty by reason of insanity) (2)	▼ Not yet (1) . . . Personally completed (3)	▼ Very low (1) . . . Very high (5)	▼ None at all (1) . . . Very high (5)
Writing a forensic report (7)	▼ Not yet (1) . . . Personally completed (3)	▼ Very low (1) . . . Very high (5)	▼ None at all (1) . . . Very high (5)

	Exposure	Comfort Level	Desire to Learn
Testifying at a legal proceeding (real or mock) (9)	▼ Not yet (1) . . . Personally completed (3)	▼ Very low (1). . . Very high (5)	▼ None at all (1) . . . Very high (5)

Q3.4 Please describe your level of exposure to, comfort with, and desire to learn more about civil forensic evaluations or hearings:
Civil forensic matters may include (but are not limited to):
Disability (e.g., Social Security, VA, or private)
Malpractice
Fitness for duty
Testamentary capacity (i.e., capacity to execute a will)
Immigration proceedings
Child custody
Psychic/personal injury
Workers' compensation

	Exposure	Comfort Level	Desire to Learn
Civil forensic evaluations/ hearings (6)	▼ Not yet (1) . . . Personally completed (3)	▼ Very low (1) . . . Very high (5)	▼ None at all (1) . . . Very high (5)

Q3.5 Please describe your level of exposure to, comfort with, and desire to learn more about the following forensic experiences (Part 1 of 2):

	Exposure	Comfort Level	Desire to Learn
Discussing confidentiality with a patient or family member (6)	▼ Not yet (1). . . Personally completed (3)	▼ Very low (1) . . . Very high (5)	▼ None at all (1) . . . Very high (5)
Evaluation of whether "duty to warn" applies in a patient's case (2)	▼ Not yet (1) . . . Personally completed (3)	▼ Very low (1) . . . Very high (5)	▼ None at all (1). . . Very high (5)
Evaluation of medical decision-making capacity (7)	▼ Not yet (1) . . . Personally completed (3)	▼ Very low (1) . . . Very high (5)	▼ None at all (1) . . . Very high (5)
Hearing for involuntary medication (4)	▼ Not yet (1) . . . Personally completed (3)	▼ Very low (1). . . Very high (5)	▼ None at all (1) . . . Very high (5)
Hearing for civil commitment (8)	▼ Not yet (1) . . . Personally completed (3)	▼ Very low (1) . . . Very high (5)	▼ None at all (1) . . . Very high (5)
Evaluation or hearing for conservatorship/ guardianship (9)	▼ Not yet (1) . . . Personally completed (3)	▼ Very low (1) . . . Very high (5)	▼ None at all (1) . . . Very high (5)
Performing mandatory reporting duties (e.g., for suspected child abuse) (15)	▼ Not yet (1) . . . Personally completed (3)	▼ Very low (1) . . . Very high (5)	▼ None at all (1) . . . Very high (5)

Q3.6 Please describe your level of exposure to, comfort with, and desire to learn more about the following forensic experiences (Part 2 of 2):

	Exposure	Comfort Level	Desire to Learn
Evaluation or hearing for conservatorship/ guardianship (10)	▼ Not yet (1) . . . Personally completed (3)	▼ Very low (1) . . . Very high (5)	▼ None at all (1) . . . Very high (5)
Discussing patients with the probation or parole system (11)	▼ Not yet (1) . . . Personally completed (3)	▼ Very low (1) . . . Very high (5)	▼ None at all (1) . . . Very high (5)
Evaluation of malingering using a structured instrument (12)	▼ Not yet (1) . . . Personally completed (3)	▼ Very low (1) . . . Very high (5)	▼ None at all (1) . . . Very high (5)
Evaluation of psychopathy using a structured instrument (13)	▼ Not yet (1) . . . Personally completed (3)	▼ Very low (1) . . . Very high (5)	▼ None at all (1) . . . Very high (5)
Detailed risk assessment for potential to harm others (14)	▼ Not yet (1) . . . Personally completed (3)	▼ Very low (1) . . . Very high (5)	▼ None at all (1) . . . Very high (5)

Q3.7 Which of the following fellowships are you planning to complete, currently completing or have already completed?

Addiction (1)
Child and Adolescent (2)
Consult Liaison (3)
Forensics (4)
Geriatrics (5)

Other (e.g. non-ACGME fellowship) (6)
None (7)
End of Block: Exposure, Comfort and Interest
Start of Block: Suggestion box

Q4.1 If you have any comments or suggestions, please feel free to share them with us.
_____

_____
_____
_____
_____
_____

End of Block: Suggestion box