

Training in the management of psycho-behavioral conditions: A needs assessment survey of  
emergency medicine residents

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**Abstract**

32 **Objective:** Mental-health related ED visits are increasing. Despite this trend, most emergency  
33 medicine (EM) residency programs devote little time to psychiatry education. This study aimed  
34 to identify EM residents' perceptions of training needs in emergency psychiatry and self-  
35 confidence in managing patients with psycho-behavioral conditions.

36 **Methods:** A needs-assessment survey was distributed to residents at 15 ACGME-accredited EM  
37 programs spanning the U.S. Survey items addressed amount and type of training in psychiatry  
38 during residency, perceived training needs in psychiatry, and self-confidence performing various  
39 clinical skills related to emergency psychiatric care. Residents used a five-point scale (1 =  
40 nothing; 5 = very large amount) to rate their learning needs in a variety of topic areas related to  
41 behavioral emergencies (e.g., medically clearing patients, substance use disorders). Using a  
42 scale from 0-100, residents rated their confidence in their ability to independently perform  
43 various clinical skills related to emergency psychiatric care (e.g., differentiating a psychiatric  
44 presentation from delirium).

45 **Results:** Of the 632 residents invited to participate, 396 (63%) responded. Twelve-percent of  
46 respondents reported completing a psychiatry rotation during EM residency. One of the 15  
47 participating programs had a required psychiatry rotation. Residents reported that their program  
48 used lectures (56%) and/or supervised training in the ED (35%) to teach residents about  
49 psychiatric emergencies. Most residents reported minimal involvement in the treatment of  
50 patients with psychiatric concerns. The majority of residents (59%) believed their program  
51 should offer more education on managing psychiatric emergencies. Only 14% of residents felt  
52 "quite" or "extremely" prepared to treat psychiatric patients. Overall, residents reported the  
53 lowest levels of confidence and highest need for more training related to counseling suicidal  
54 patients and treating psychiatric issues in special populations (e.g., pregnant women, elderly, and  
55 children).

56 **Conclusions:** Most EM residents desire more training in managing psychiatric emergencies than  
57 is currently provided.

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**INTRODUCTION**

Mental health (MH) and substance use disorders (SUD) affect an estimated 43.6 million and 21.5 million adults, respectively, in the United States each year.<sup>1</sup> Emergency Departments (EDs) nationwide are increasingly providing care for individuals with MH and SUDs. In 2007, approximately 1-in-8 ED visits were related to a MH and/or SUD.<sup>2</sup> More recent data shows a 44.1 percent increase in MH and SUD visits to the ED between 2006 and 2014.<sup>3</sup> The overall rate of ED visits related to behavioral/mental health concerns is increasing at a significantly faster rate than ED visits related to injuries or medical conditions.<sup>3</sup> The increasing number of mental health related visits combined with a national shortage of inpatient psychiatric beds have led to widespread boarding of psychiatric patients. Patients with primary psycho-behavioral complaints have been found to wait 3.2 times longer for inpatient placement than patients with non-psychiatric chief complaints.<sup>4</sup> Given that EDs have become a main source of care for patients with mental health complaints, it is important to identify whether EM residents are well-prepared to meet this demand and treat these patients.

According to the American College of Emergency Physicians (ACEP) “the practice of emergency medicine includes the initial evaluation, diagnosis, treatment coordination of care

89 among multiple providers, and disposition of any patient requiring expeditious medical, surgical,  
90 or psychiatric care.”<sup>5</sup> Currently, the 2018 Accreditation Council for Graduate Medical Education  
91 (ACGME) EM residency program requirements do not specify that programs ensure residents  
92 have ample experiences treating psychiatric patients. Instead, the ACGME states “residents must  
93 demonstrate knowledge of established and evolving biomedical, clinical, epidemiological and  
94 social-behavioral sciences, as well as the application of this knowledge to patient care.”<sup>6</sup> The  
95 most recent version of the EM Model, the specialty’s guiding document for curricula, includes  
96 the following conditions under psycho-behavioral disorders as core content areas: substance use  
97 disorders, mood disorders, thought disorders, factitious disorders, neurotic disorders, organic  
98 psychoses, patterns of violence/abuse/neglect, personality disorders, psychosomatic disorders,  
99 and feeding and eating disorders.<sup>7</sup> The EM Model's section on procedures and skills integral to  
100 the practice of EM includes two components within the psycho-behavioral category: psychiatric  
101 screening examination and violent patient management/restraint.<sup>7</sup>

102 Based on these guidelines, it appears that EM residents are expected to develop skills in  
103 treating psycho-behavioral conditions through on-the-job training in the ED. This leaves EM  
104 programs with a wide-array of variation and emphasis regarding the appropriate amount of  
105 education to EM residents in the area of psycho-behavioral conditions. Although somewhat  
106 outdated, due to the paucity of literature in this area, one study from 2003 on the scope of  
107 psychiatric education provided by EM training programs, showed that only 14 percent of the  
108 surveyed-programs included a one-month psychiatry rotation and 67 percent of these programs  
109 did not provide or require any formal training in the acute management of psycho-behavioral  
110 conditions.<sup>8</sup> Additionally, EM residents have little incentive to study material related to  
111 MH/SUD since only 4 percent of the questions on the American Board of Emergency Medicine  
112 (ABEM) Certification Exam pertain to psycho-behavioral disorders.<sup>9</sup> The importance of psycho-  
113 behavioral disorders is also deemphasized in core EM textbooks (i.e. Tintinalli and Rosen) which  
114 allot only 2-3 percent of content to psycho-behavioral disorders.<sup>10,11</sup>

115 There is limited research on EM residents perceived educational needs in managing  
116 psycho-behavioral conditions. A survey conducted in 1988 among program directors of non-  
117 psychiatric residencies (i.e. EM, family medicine, pediatrics, obstetrics-gynecology, and surgery)  
118 found a lack of training in emergency psychiatric interventions.<sup>12</sup> However, this study is outdated  
119 and included only the program directors’ perspectives. To begin to address these gaps in the

120 literature, we conducted an educational needs assessment survey which aims to identify EM  
121 residents' self-perceived training needs and self-confidence in evaluating and treating patients  
122 with psycho-behavioral conditions.

## 123 **METHODS**

### 124 **Study Design and Population:**

125 We designed and distributed an anonymous and voluntary needs assessment survey to  
126 EM resident physicians at 15 ACGME accredited EM residency programs across the United  
127 States from July 2018 to October 2018. We identified a geographically diverse sample of  
128 residency programs to participate through directed emails to program directors who serve on the  
129 Council of Emergency Medicine Residency Directors (CORD) Resilience Committee. The email  
130 did not provide any incentive to participate. EM residents at these select residencies were  
131 surveyed using a self-administered internet or paper questionnaire. The results were then mailed  
132 or emailed back to our home institution. The study received institutional review board approval  
133 from the University of Mississippi Medical Center. Informed consent was waived to preserve  
134 participant anonymity.

### 135 **Survey Content and Administration:**

136 The authors collaborated to create a survey instrument aimed to determine the breadth  
137 and depth of psychiatric education, both optional and required, provided by EM residency  
138 programs. The survey was modeled using similar formats to existing needs assessments surveys  
139 (i.e. Cook et al.).<sup>13</sup> Initial items were identified based on literature about the emergency  
140 physician's role in psycho-behavioral emergencies.<sup>7,14</sup> A list of potential items were reviewed,  
141 edited, and finalized by several of the authors, many of whom are members of the CORD  
142 Resilience Committee. Survey items asked EM residents to report their own levels of formal  
143 training in psychiatry, comfort treating psychiatric patients, and self-perceived training needs and  
144 self-confidence in 15 specific clinical skills related to psychiatric care. Items about demographic  
145 information were also included. Most items assessing residents self-perceived training needs and  
146 comfort treating psychiatric patients consisted of a five-point unipolar response scale (1=nothing  
147 or not at all comfortable; 5=very large amount or extremely comfortable). Residents also rated  
148 their confidence in their ability to independently perform various clinical skills related to psycho-  
149 behavioral conditions (e.g., differentiating a psychiatric presentation from delirium, developing a  
150 safety plan with a suicidal patient) using a 100-point scale, ranging from 0 (cannot do at all) to

151 100 (highly certain can do). The use of a 0 to 100 scale was based on existing recommendations  
152 for developing confidence scales.<sup>15</sup> Items can be seen in Tables 2 and 3.

153 Lastly, residents' attitudes toward individuals with mental illness was assessed using the  
154 Attitude Subscale of the Opening Minds Scale for Health Care Providers (i.e. Kassam et al.) an  
155 instrument that measures providers' attitudes towards people with mental illness.<sup>16</sup> Higher scores  
156 suggest a more stigmatizing attitude. Cronbach's alpha was 0.75. Items are listed in Table 4.

#### 157 **Data Analysis:**

158 Results were analyzed with IBM SPSS Statistics for Windows, Version 24.0 (Armonk,  
159 NY). Descriptive statistics were used to analyze resident characteristics and survey responses.  
160 ANOVA was used to examine differences in self-perceived educational needs and confidence by  
161 PGY level.

#### 162 **RESULTS:**

##### 163 **Characteristics of Participating Residents**

164 A total of 632 EM residents representing 15 programs and 12 different states were invited  
165 to complete the survey. Of those invited to participate, 396 residents completed the survey for a  
166 response rate of 62.7 percent. The respondents were 59.8 percent male and 40.2 percent female  
167 and included a relatively equal breakdown of post-graduate years (Table 1).

##### 168 **Characteristics of Participating Programs**

169 Response rate by institution ranged from 35-50% (3/15) to 50-65% (3/15) to 65-80%  
170 (5/15) and >80% (3/15). See Appendix for a list of participating institutions and response rate by  
171 institution and PGY-level. Eight of the programs used a three-year training format, five programs  
172 used a four-year format, and two programs were in the midst of transitioning from a 4-year to a  
173 3-year program. Programs spanned all 5 regions of the U.S. One of the 15 programs had a  
174 required psychiatry rotation. Twelve of the 15 participating programs had a "psychiatrist  
175 available in real time to consult on ED patients 24 hours a day."

##### 176 **Training in Psychiatry and Current Involvement in Psychiatric Emergencies**

177 Almost all of the resident participants (>99%) reported that they completed a formal  
178 rotation in psychiatry in medical school. Overall, 12% of resident respondents reported  
179 completing a psychiatry rotation during their EM residency. The vast majority of these residents  
180 were attending a residency program that required a psychiatry rotation. Three residents from  
181 other programs reported that they opted to complete an elective psychiatry rotation. All residents



182 reported seeing at least 1-2 patients with a psychiatric or behavioral complaint during a typical 8-  
183 hour ED shift. Although residents frequently evaluate patients with psycho-behavioral  
184 conditions, over half (55%) identified their level of involvement in managing these patients  
185 (beyond medical clearance) as “minimal” or “none.” Residents from institutions who did not  
186 have a psychiatrist available for consultation 24 hours a day reported similar levels of  
187 involvement as those who did have a psychiatry consultant available.

### 188 **Perceptions about Training in Psychiatry**

189 Sixty-nine percent of residents felt it is quite or extremely important to develop  
190 competency in the assessment and treatment of patients with psycho-behavioral conditions.  
191 However, only 13% felt well prepared to assess and treat such patients, and a majority of  
192 residents (59%) felt their program should offer more training in managing psycho-behavioral  
193 conditions. Residents who felt their program should offer more training in managing psycho-  
194 behavioral emergencies thought it should be delivered through a variety of formats including  
195 lectures (29%), simulation exercises (26%), supervised training in the ED (21%), a core rotation  
196 (9%), and an elective (13%). Residents indicated that their programs currently provided  
197 education about psycho-behavioral conditions through use of lectures (56%), supervised training  
198 in the ED (35%), and simulation (6%). Six percent of residents reported having no formal  
199 education dedicated to management of patients with psycho-behavioral conditions.

200 The majority of residents (mean = 60%) felt a need for at least “moderate improvement”  
201 in their clinical practice across 15 areas relevant to emergency psychiatric care. Overall,  
202 residents reported needing the least amount of training pertaining to medically clearing patients  
203 and the most amount of training pertaining to caring for special patient populations (e.g.,  
204 children, elderly, and pregnant women). Verbatim wording of the survey items and response data  
205 about resident attitudes about their training in emergency psychiatry are presented in Table 2.

### 206 **Comfort and Confidence Managing Psychiatric Patients**

207 Only 6% of residents reported feeling quite or extremely comfortable independently  
208 performing the assessment and prescribing initial treatment for patients with psycho-behavioral  
209 conditions. A minority of residents (36%) believed that their attendings are quite or extremely  
210 comfortable treating patients with psycho-behavioral conditions. Residents’ self-reported  
211 confidence performing various clinical skills related to emergency psychiatric care ranged from 0  
212 (cannot do at all) to 100 (highly certain can do). On average, most residents rated their level of

213 confidence performing various skills related to emergency psychiatric care in the moderate range  
214 (mean = 60). As expected, confidence levels generally increased by PGY-year; however, this  
215 was not always the case among PGY 4s whose confidence ratings were lower than the mean  
216 across several skill areas. A one-way between groups analysis of variance was performed to  
217 investigate the impact of PGY level on levels of confidence. There was a significant difference in  
218 overall (average) confidence scores by PGY level,  $F(3, 364) = 12.4, p < .001$ . Post hoc analyses  
219 using the Tukey HSD test indicated that the mean score for PGY1s ( $M = 50.64, SD = 17.4$ ) was  
220 significantly lower than PGY 2s ( $M = 61.42, SD = 17.8$ ), and PGY 3s ( $M = 63.94, SD = 16.40$ ).  
221 Supplemental analyses were also performed to examine differences in confidence levels among  
222 residents who had completed a psychiatry rotation during residency versus those who had not  
223 completed a psychiatry rotation. Surprisingly, residents who had completed a psychiatry rotation  
224 during residency reported, on average, significantly lower levels of confidence ( $M = 41.40,$   
225  $SD = 18.87$ ) compared to residents who had not completed a psychiatry rotation ( $M = 63.53, SD = 15.63$ ),  
226  $t(291) = -7.83, p < .001$ . Specific survey items and response data related to resident attitudes  
227 about their training in emergency psychiatry are presented in Table 3.

### 228 **Attitudes Toward Patients with Mental Illness**

229 EM residents in this study had significantly higher (more stigmatizing) scores on the  
230 Attitude Subscale of the Opening Minds Scale for Health Care Providers ( $M=13.42, SD=3.96$ )  
231 compared to the sample of physicians included in the development of the measure ( $M=12.7,$   
232  $SD=3.4$ ),  $t(1050)=3.11, p = .002$ ; however the effect size was small ( $d = .195$ ). As expected, the  
233 majority of residents (84%) reported that they are more comfortable treating patients with a  
234 physical illness than a mental illness. Nonetheless, most respondents reported feeling  
235 compassionate towards patients with mental illness and believed they could help a patient with  
236 mental illness. See Table 4.

### 237 **DISCUSSION**

238 We conducted a needs assessment using a sample of 15 EM residency programs across  
239 the U.S. to gather information about EM resident exposure to education regarding psycho-  
240 behavioral conditions, perceived confidence treating patients with such conditions, and perceived  
241 educational needs with regard to psycho-behavioral conditions. Overall, we found that the focus  
242 on psycho-behavioral conditions in EM residency education is relatively minimal compared to  
243 the frequency with which these conditions are encountered clinically. Consequently, most EM

244 residents feel uncomfortable and lack confidence independently managing patients with psycho-  
245 behavioral conditions and would like more training in this area.

246 Our survey results also demonstrated that opportunities for ongoing dedicated educational  
247 experiences managing patients with psycho-behavioral conditions are rather limited, possibly in  
248 part due to a greater emphasis placed on teaching the management of medical and surgical  
249 conditions. The ACGME EM Program Requirements do not specifically mention that residents  
250 should be able to competently evaluate and provide initial treatment for patients with psycho-  
251 behavioral conditions.<sup>6</sup> Instead, these requirements place a heavy emphasis on the importance of  
252 residents developing medical and surgical procedural competencies.<sup>6</sup> In order to meet these  
253 requirements, most programs require residents to rotate through settings designed to develop  
254 their medical and surgical procedural skills including obstetrics and gynecology, medical,  
255 surgical and pediatric intensive care units, trauma and acute care surgery, and anesthesiology.  
256 Nearly all (>99%) of respondents completed a psychiatry rotation during medical school, but  
257 only 12% reported rotating through a psychiatry rotation in residency. Not surprisingly, the vast  
258 majority (84%) of respondents agreed or strongly agreed that they feel more comfortable  
259 managing a patient with a physical illness than a mental health illness. The relatively limited  
260 opportunity for ongoing dedicated educational experiences managing patients with psycho-  
261 behavioral conditions may be one reason why EM residents have less confidence in this area  
262 when compared to managing patients with medical or surgical conditions.

263 We found that most residents would prefer more education on managing psycho-  
264 behavioral conditions through various methods including lectures, simulation, and hands on  
265 training in the ED. Review of the emergency medicine literature demonstrated a paucity of data  
266 surrounding the best methods for teaching psycho-behavioral emergencies. The use of high-  
267 fidelity simulation followed by structured group debriefs has previously been well received by  
268 psychiatry residents and nurses learning how to manage psycho-behavioral conditions.<sup>17-19</sup>  
269 Teaching strategies using standardized patients and role-playing have also been found to increase  
270 learner comfort with assessing and managing psycho-behavioral conditions.<sup>20-21</sup> In medical  
271 students, case-based independent study was found to be an effective method to improve exposure  
272 to emergency psychiatry cases and could be adapted for resident use.<sup>20, 22</sup> Dedicated off-service  
273 emergency psychiatry rotations could also be developed to address educational needs.<sup>23</sup>  
274 MacLean et al<sup>24</sup> previously described learning objectives for an off-service psychiatry rotation

275 for emergency medicine residents, and the American Association for Emergency Psychiatry has  
276 published guidelines and a model curriculum with specific training objectives for psychiatry  
277 residents to learn emergency psychiatry that could be adapted for the emergency medicine  
278 resident.<sup>24-25</sup> Zun previously advocated for developing a fellowship in emergency psychiatry as  
279 well as a course for psychiatric emergencies similar to advance trauma life support (ATLS),  
280 advanced cardiovascular life support (ACLS) and pediatric advanced life support (PALS).<sup>26</sup>  
281 Increased bedside teaching of concepts related to evaluation and management of psycho-  
282 behavioral conditions by experienced EM attendings may also promote hands-on resident  
283 learning on shift.

284 Opportunities to learn through hands-on training in the ED are available given that all  
285 residents reported typically seeing at least one or more patients with a psycho-behavioral chief  
286 complaint during a typical 8 hour shift. Nonetheless, over half of respondents described minimal  
287 involvement with psychiatric patients. Residents reported that only about a third of their  
288 attendings are quite or extremely comfortable treating these patients which may explain why  
289 educational discussions on these patients are not occurring. Furthermore, EM residents may be  
290 taking a less active role in the care of patients with psycho-behavioral conditions due to the  
291 availability of consultants, social workers, or other support services. While this may not pose a  
292 problem in an academic medical setting with access to psychiatric consultants and other support  
293 services, many residents will go on to practice in rural or lower-resource settings that offer  
294 limited additional support. Thus, ensuring that residents feel confident independently managing  
295 these patients through increased autonomy and involvement in their care is critical to successful  
296 practice in diverse environments upon completion of training.

297 The results of our study showed that residents who completed a psychiatry rotation  
298 actually reported lower levels of confidence performing various clinical skills related to psycho-  
299 behavioral conditions compared to residents who had not completed a psychiatry rotation. These  
300 results were initially surprising; however, it may be that after completing a psychiatry rotation  
301 residents had developed a greater understanding of the skills and amount of training needed to  
302 effectively treat patients with psycho-behavioral conditions. It is also important to note that  
303 physician self-reported levels of confidence are often poor predictors of observational measures  
304 of performance. In fact, several studies have found that that physicians who are the least skilled  
305 are often the most confident and least likely to recognize their learning needs.<sup>27</sup> Given these

306 implications, future studies examining residents' training needs would benefit from including  
307 objective measures of performance in addition to self-assessments.

308 Our study identified several specific content areas within the broader category of psycho-  
309 behavioral conditions in which residents wish to improve their knowledge and skills: 1)  
310 Management in special populations such as pregnant women, children and elderly patients, 2)  
311 Lethal means counseling, and 3) Safety planning with suicidal patients. Correspondingly,  
312 residents expressed the lowest confidence levels with performing the assessment and prescribing  
313 initial treatment of special populations. Simulation exercises and didactic content could target  
314 these identified areas of need. The current lack of a clear "best practices" guide for training  
315 methods may account for the survey results demonstrating that the amount of time spent and the  
316 method of training in psycho-behavioral conditions are widely variable among residency  
317 programs. Residency programs would benefit from an improved and more standardized  
318 curriculum.

### 319 **LIMITATIONS**

320 There are several limitations of this study. First, participants were a convenience sample  
321 of EM residents from 15 ACGME accredited EM programs that were identified based on  
322 existing professional relationships. We did not systematically include residents from programs  
323 with varying levels of emergency psychiatric services (e.g., availability of consultants, dedicated  
324 psychiatric emergency unit) and resident educational offerings (e.g., required psychiatry  
325 rotation). However, by limiting participating programs to those with known colleagues available  
326 to help with data collection, we were able to maximize our response rate which was rather high  
327 especially for a survey study. Additionally, we were able to include residents completing  
328 programs in all areas of the U.S. A second concern involved the timing of data collection (July  
329 and August). Early in the academic year, the PGY1s would have little experience and contact  
330 with patients. While patients presenting with psycho-behavioral complaints and subsequent  
331 boarding of these patients are increasing, patient presentations can vary seasonally. Changing the  
332 survey timing may alter responses for both junior and senior residents.

### 333 **CONCLUSIONS**

334 In summary, residents in EM desire more training in the management of psycho-  
335 behavioral conditions. There are wide variations among residency programs with regard to the  
336 time spent in training and the methods of training for psycho-behavioral conditions. Residency

337 programs would benefit from more education in psycho-behavioral conditions and a clear set of  
338 best-practices for improved curriculum standardization.

339

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Table 1: Participant Demographics

Participant Characteristics	n (%)*
<b>Gender</b>	
Male	232 (59.8)
Female	156 (40.2)
<b>Post-Graduate Year</b>	
PGY-1	137 (34.8)
PGY-2	119 (30.2)
PGY- $\geq$ 3	138 (35.2)
<b>Prior Residency Training</b>	
No	376 (95.4)
Yes	3 (0.8)

Partially	15 (3.8)
<b>Region</b>	
Northeast	121 (30.6)
Southeast	94 (23.7)
Southwest	23 (5.8)
Midwest	61 (15.4)
West	97 (24.5)
Completed a rotation in Psychiatry	
During residency	36 (11.8)
During medical school	314 (99.7)
<b>Average number of patients with psychiatric chief complaints seen in a typical 8-hour shift</b>	
0 patients	0
1-2 patients	143 (46.4)
2-3 patients	98 (31.8)
3-4 Patients	39 (12.7)
Greater than 4 Patients	28 (9.1)

448 \*The number of respondents (n) varies for categories due  
449 to missing data

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Table 2: Resident Attitudes about Training in Emergency Psychiatry

Item	Total N	Mean (SD), Median	1 % (No.)	2 % (No.)	3 % (No.)	4 % (No.)	5 % (No.)
<b>How much do you think you need to learn or improve in each of the following topic areas?</b>			<b>Nothing</b>	<b>A small amount</b>	<b>A moderate amount</b>	<b>A large amount</b>	<b>A Very large amount</b>
Medically clearing psychiatric patients	388	2.46 (1.1), 3	10.3 (40)	37.6 (146)	29.4 (114)	15.5 (60)	7.2 (28)
Performing a mental status exam	387	2.61 (1.0), 3	5.4 (21)	34.4 (133)	37.5 (145)	16.5 (64)	6.2 (24)
Conducting a psychiatric interview	389	2.77 (1.0), 3	6.2 (24)	30.8 (120)	38.3 (149)	16.7 (65)	8.0 (31)
Risk assessment of harm to self or others	388	2.69 (1.0), 3	5.4 (21)	34.5 (134)	33.0 (128)	19.8 (77)	7.2 (28)
Lethal Means Counseling	387	3.23 (1.0), 3	2.8 (11)	21.4 (83)	33.9 (131)	26.6 (103)	15.2 (59)
Safety Planning with Suicidal Patients	388	3.23 (1.0), 3	2.3 (9)	14.7 (57)	41.0 (159)	27.8 (108)	14.2 (55)
Etiologies of Altered Mental Status	388	3.15 (1.1), 3	7.7 (30)	37.9 (147)	27.6 (107)	16.5 (64)	10.3 (40)
Substance Use Disorders	387	3.08 (1.0), 3	5.2 (20)	37.2 (144)	33.3 (129)	15.5 (60)	8.8 (34)
Mood disorders	388	2.77 (0.9), 3	2.6 (10)	29.1 (113)	43.6 (169)	19.3 (75)	5.4 (21)
Use of physical restraints	388	3.08 (1.1), 3	6.4 (25)	37.1 (144)	26.5 (103)	20.1 (78)	9.8 (38)
Use of chemical restraints	388	3.15 (1.1), 3	5.2 (20)	37.9 (147)	24.7 (96)	21.4 (83)	10.8 (42)
Acutely agitated or psychotic patient	388	3.00 (1.1), 3	4.6 (18)	32.2 (125)	33.0 (128)	19.6 (76)	10.6 (41)
Psychiatric emergencies in pregnant women	388	3.62 (0.9), 4	0.5 (2)	8.8 (34)	37.1 (144)	32.5 (126)	21.1 (82)
Psychiatric emergencies in the elderly	388	3.38 (0.9), 3	0.8 (3)	17.0 (66)	42.5 (165)	26.3 (102)	13.4 (52)
Psychiatric emergencies in children	388	3.38 (0.9), 3	0.5 (2)	15.7 (61)	37.1 (144)	30.2 (117)	16.5 (64)
<b>Comfort Assessing and Treating Psychiatric Patients</b>			<b>Not at all Comfortable</b>	<b>Mildly Comfortable</b>	<b>Somewhat Comfortable</b>	<b>Quite Comfortable</b>	<b>Extremely Comfortable</b>
If there were no psychiatrist in your institution, how comfortable would you feel performing the assessment and prescribing initial treatment for psychiatric patients by yourself?	373	2.00 (0.9), 2	38.9 (145)	35.7 (133)	19.3 (72)	5.9 (22)	0.3 (1)
Based on the amount of supervision and consultant support at your institution, how comfortable are you performing the	312	2.71 (1.0), 2	24.4 (76)	35.9 (112)	26.9 (84)	11.9 (37)	1.0 (3)

assessment and prescribing initial treatment for psychiatric patients?*							
How comfortable do the majority of your ED attendings appear when assessing and treating psychiatric patients? *	306	3.71 (0.9), 3	4.9 (15)	24.8 (76)	34.6 (106)	30.1 (92)	5.6 (17)
<b>Importance of Developing Competence to Assess and Treat Psychiatric Patients</b>			<b>Not at all Important</b>	<b>Mildly Important</b>	<b>Somewhat Important</b>	<b>Quite Important</b>	<b>Extremely Important</b>
How important is it for you to develop competency in the assessment and treatment of patients with psychiatric complaints?	385	3.69 (0.9), 4	1.6 (6)	7.8 (30)	21.6 (83)	43.9 (169)	25.2 (97)
<b>Preparedness Assessing and Treating Psychiatric Patients</b>			<b>Not at all Prepared</b>	<b>Mildly Prepared</b>	<b>Somewhat Prepared</b>	<b>Quite Prepared</b>	<b>Extremely Prepared</b>
How prepared are you to assess and treat patients presenting with psychiatric chief complaints?	385	2.61 (0.9), 3	9.6 (37)	32.7 (126)	43.9 (169)	12.7 (49)	1.0 (4)

Note: Numbers may not sum to 396 because of missing data. Percentages are calculated using all available data. \*PGY-1s did not answer these items

Table 3: Resident Confidence in Psychiatric Skills

<b>Item</b>	<b>Total (n = 381)</b>	<b>PGY 1 (n = 131)</b>	<b>PGY 2 (n = 117)</b>	<b>PGY 3 (n = 89)</b>	<b>PGY ≥ 4 (n = 44)</b>	<b>Psych Rotation (n = 38)</b>	<b>No Psych Rotation (n = 261)</b>
	<b>Mean (SD)</b>	<b>Mean (SD)</b>	<b>Mean (SD)</b>	<b>Mean (SD)</b>	<b>Mean (SD)</b>	<b>Mean (SD)</b>	<b>Mean (SD)</b>
Conduct an H&P to determine whether psychiatric complaints are due to an organic or psychological cause	65.57 (23.0)	56.10 (25.3)	67.57 (21.4)	73.88 (16.6)	71.61 (22.0)	51.45 (25.96)	71.04 (18.22)
Perform a thorough mental status exam (behavioral, cognitive, and emotional functioning)	52.27 (24.6)	49.62 (23.7)	54.88 (21.9)	55.88 (26.8)	45.53 (27.8)	26.49 (26.68)	57.77 (21.48)
Differentiate a psychiatric presentation from delirium	63.17 (20.8)	53.40 (23.3)	65.47 (17.5)	70.93 (16.0)	70.20 (19.2)	53.34 (18.97)	68.00 (17.51)
Conduct a psychiatric interview to diagnose common psychiatric disorders (anxiety, depression, substance abuse)	60.41 (25.6)	57.82 (24.5)	62.55 (24.6)	64.64 (25.2)	53.68 (30.5)	29.11 (28.64)	65.83 (21.20)

Determine whether a patient is at risk of harm to self or others	69.97 (21.1)	62.70 (23.6)	72.86 (19.2)	75.61 (17.4)	72.61 (19.3)	60.05 (19.90)	74.48 (17.49)
Develop a safety plan with a suicidal patient	46.21 (25.2)	44.32 (22.9)	47.56 (26.3)	48.34 (26.1)	43.63 (27.0)	23.22 (26.68)	51.48 (23.40)
Counsel a suicidal patient about reducing access to firearms and other lethal means	51.11 (26.8)	47.06 (24.7)	54.75 (27.5)	53.84 (27.1)	47.19 (28.9)	23.24 (24.89)	56.76 (23.60)
Initiate treatment for patients presenting with drug overdose	67.24 (25.0)	55.45 (24.4)	71.57 (22.7)	75.31 (22.9)	74.52 (24.6)	56.61 (23.60)	73.62 (21.32)
Initiate treatment for patients presenting with acute alcohol or drug withdrawal	72.59 (22.1)	60.31 (23.4)	77.47 (18.1)	79.62 (20.0)	81.7 (16.2)	74.76 (18.10)	76.75 (19.03)
Use physical or chemical restraints to facilitate work-up in a trauma patient who has a psychiatric condition	66.90 (24.8)	49.27 (23.5)	74.12 (19.2)	78.28 (20.4)	74.80 (23.1)	52.47 (29.05)	73.93 (20.38)
Perform the assessment and prescribe initial treatment of the acutely agitated or psychotic patient	63.02 (24.2)	47.88 (23.1)	68.50 (21.1)	72.18 (19.7)	74.59 (21.7)	66.97 (20.57)	67.73 (22.46)
Perform the assessment and prescribe initial treatment of pregnant women with psychiatric complaints	40.78 (24.5)	32.77 (20.9)	44.79 (25.3)	44.96 (24.6)	44.41 (26.7)	21.45 (20.14)	46.41 (24.02)
Perform the assessment and prescribe initial treatment of elderly patients with psychiatric complaints	49.69 (24.7)	42.27 (20.5)	52.98 (25.1)	54.27 (25.0)	52.61 (29.3)	26.55 (25.54)	55.90 (22.65)
Perform the assessment and prescribe initial treatment of children with psychiatric complaints	42.55 (24.7)	33.96 (20.3)	45.49 (25.0)	47.48 (24.9)	49.33 (28.9)	23.89 (22.47)	48.29 (24.13)

Note: Psych Rotation refers to residents who completed a psychiatry rotation during and emergency medicine or non-emergency medicine residency. No Psych rotation refers to those residents who did not complete a psychiatry rotation during residency.

Table 4: Resident Attitudes Towards People with Mental Illness

Item	Total N	Mean (SD), Median	1 % (No.)	2 % (No.)	3 % (No.)	4 % (No.)	5 % (No.)
			Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
I am more comfortable helping a person who has a physical illness than I am helping a person who has a mental illness	386	4.13 (0.12), 4.00	0.5 (2)	4.4 (17)	11.1 (43)	49.0 (189)	35.0 (135)
Despite my professional beliefs, I have negative reactions towards people who have mental illness	387	2.21 (0.97), 2.00	25.6 (99)	39.8 (154)	23.8 (92)	9.8 (38)	1.0 (4)
There is little I can do to help people with mental illness	387	2.20 (0.92), 2.00	21.2 (82)	49.6 (192)	19.4 (75)	8.0 (31)	1.8 (7)
More than half of people with mental illness don't try hard enough to get better	386	1.88 (0.83), 2.00	35.8 (138)	44.3 (171)	16.6 (64)	2.6 (10)	0.8 (3)
Healthcare providers do not need to be advocates for people with mental illness	387	1.52 (0.79), 1.00	59.9 (232)	33.1 (128)	3.9 (15)	1.3 (5)	1.8 (7)
I struggle to feel compassion for a person with mental illness	387	1.93 (0.92), 2.00	36.2 (140)	43.2 (167)	12.7 (49)	7.2 (28)	0.8 (3)
There is little to nothing I can do for a patient with suicidal ideation*	375	1.75 (0.85), 2.00	45.3 (170)	40.5 (152)	8.8 (33)	4.8 (18)	0.5 (2)
Total SCORE	386	13.42 (3.96), 14.00					

Note: The items were taken from the Attitudes of Health Care Providers Towards People with Mental Illness Subscale of the Opening Minds Scale for Health Care Providers Scale OMS-HC

\*This item is not include in the original scale. It was added for the purpose of this study.

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## Appendix

## Resident Program Characteristics

Institution	Total Response Rate	Response rate for each institution by PGY-Level			
		PGY 1 n (%)	PGY 2 n (%)	PGY 3 n (%)	PGY ≥ 4 n (%)
University of Mississippi Medical Center	29 (74%)	12 (41%)	6 (21%)	9 (31%)	2 (7%)
Medical College of Wisconsin	24 (80%)	9 (38%)	6 (25%)	9 (38%)	0 (%)
University of Alabama at Birmingham	23 (77%)	7 (30%)	7 (30%)	8 (35%)	1 (4%)
University of Utah	22 (81%)	9 (41%)	6 (27%)	6 (27%)	1 (4.5%)
University of Tennessee- Nashville	20 (83%)	8 (40%)	7 (35%)	4 (20%)	1 (5%)
Icahn School of Medicine at Mount Sinai	42 (55%)	10 (24%)	17 (40%)	8 (19%)	7 (17%)
Geisinger Medical Center	15 (58%)	4 (27%)	6 (40%)	5 (33%)	0 (0%)
University of Michigan*	37 (58%)	12 (34%)	12 (34%)	9 (26%)	2 (6%)
Keck School of Medicine of University of Southern California	51 (74%)	18 (35%)	11 (22%)	10 (20%)	12 (24%)
Norman Regional Health System	23 (82%)	6 (26%)	4 (17%)	5 (22%)	8 (35%)
Emory University School of Medicine	22 (35%)	13 (59%)	7 (32%)	2 (9%)	0 (0%)
University of California Los Angeles	24 (43%)	10 (42%)	6 (25%)	4 (17%)	4 (17%)
Inspira Health Network- New Jersey	14 (45%)	3 (21%)	6 (43%)	1 (7%)	4 (29%)
St. Joseph's Regional Medical Center	20 (80%)	5 (25%)	6 (30%)	5 (25%)	4 (20%)
Drexel University College of Medicine	30 (67%)	11 (37%)	12 (40%)	7 (23%)	0 (0%)

\*\*The number of respondents by PGY level does not add up to the total respondents due to missing data.