Discrediting the notion "working with 'crazies' will make you 'crazy'": addressing stigma and enhancing empathy in medical student education

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Abstract People with mental illness around the world continue to suffer from stigmatization and limited care. Previous studies utilizing self-report questionnaires indicate that many medical students regard clinical work with psychiatric patients as unappealing, while

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the professionalism literature has documented a general decline in students' capacity for empathy over the course of medical school. Through in-depth interviews, this study attempts to better understand the formation of medical students' perceptions of psychiatry and the implications of that process for a more general understanding of the impact of emotionally-laden experiences on medical students' capacity for empathy. Forty-seven fourth-year medical students who had expressed interest or performed well in psychiatry were asked a series of questions to elicit their perceptions of the field of psychiatry. Interview transcripts were systematically coded using content analysis and principles of grounded theory. Stigma, stereotypes, and stressfully intense emotional reactions seemed to adversely affect the students' expected satisfaction from and willingness to care for the mentally ill, despite enjoying psychiatry's intellectual content and the opportunity to develop in-depth relationships with patients. Teaching faculty need to directly address the stigma and stereotypes that surround mental illness and actively help medical students cope with the stress that they report experiencing during their psychiatry clerkship in order to improve the recognition and treatment of psychiatric illness by newly graduating physicians. More generally, the relationships that we identify among stress, stigmatization, and stereotyping along an empathic spectrum suggest that increased attention should be paid to the stress that empathy can entail. This perspective may allow for the creation of similarly targeted interventions throughout the medical school curriculum to counteract the decline in empathy, the so-called "hardening of the heart," associated with physician-training worldwide.

Introduction

Stigma towards psychiatric patients continues to plague the field of medicine, and misinformation about mental illness remains a barrier to appropriate treatment worldwide. Many patients suffer in silence, reluctant to come forward with a psychiatric complaint (US DHHS 2003). Many physicians fail to recognize or appropriately address mental illness in their patients (Ormel et al. 1990; Rubinow 2006). As a result, extraordinarily common and debilitating conditions such as depression remain untreated, presenting an enormous public health challenge of international dimensions (Wang et al. 2005a, b; World Health Organization 2006; Grace et al. 2005).

Entering medical students oftentimes share their own society's negative and stereotyped views of psychiatric patients (Feifel et al. 1999; Chew-Graham et al. 2003) and psychiatrists (Fink 1983; Walter 1989; Furnham 1986). While enrolled medical students in the United States find the field intellectually interesting (Cutler et al. 2006), many regard clinical work with psychiatric patients as unappealing (Galka et al. 2005; Martin et al. 2005; Singh et al. 1998; Balon et al. 1999; Sierles et al. 1995; Nielsen et al. 1981) and even stressful (Cutler et al. 2006). Similar observations have been made in many countries around the world (Brockington and Mumford 2002; Malhi et al. 2002; Fischel et al. 2008; Ndetei et al. 2008; Syed et al. 2008; Ay et al. 2006).

These medical student perceptions are important as they relate to the care of psychiatric patients for two reasons. First, most physicians, regardless of specialty, treat many patients with co-existing mental illness. Students who finish medical school without changing their pre-existing views of psychiatry will become practicing physicians who feel unprepared or unwilling to address psychiatric illnesses, thus further perpetuating stigmatization, misinformation, and the resultant limited care. Second, despite a recent stabilization in

previous downward trends, the recruitment of medical school graduates into psychiatry remains a concern not only in the U.S. (Rao 2003; Sierles et al. 2003; United States National Resident Matching Program 2006), but also around the world (World Health Organization 2005). Whether or not the field seeks an increase in recruitment, avoidance of a further decline is necessary to maintain talented, well-trained psychiatrists to treat widespread mental illness.

Psychiatric educators over the years have offered hypotheses and recommendations to address these ongoing medical student perceptions (Feldmann 2006). The evidence supporting those recommendations has been limited, however, because most previous studies have relied upon self-report questionnaires that provide thought-provoking but unelaborated data. For example, Niedermier et al. (2006) found that students who were initially neutral regarding a psychiatric career became firmly rejecting of it after their psychiatry clerkship despite reporting a positive experience. Cutler et al. (2006) noted that students rated working with psychiatric patients as low in "satisfaction" and high in "stress," but were unable to specify what those ratings reflected. The design of well-informed educational interventions requires a better understanding of the issues underlying such findings.

Medical student perceptions of psychiatry may also have implications for the broader community of medical educators. Increasing attention has been paid in recent years to professionalism and barriers to the development of empathy among medical students (Newton et al. 2008; Coulehan and Williams 2001). It has been recognized that students are influenced by many experiences beyond the formal medical school curriculum (Hafferty 1998; Hundert 1996), and that attention should be paid to factors underlying students' outward behavior, such as their attitudes and self-reflective capacities (Hoifodt et al. 2007; Hafferty 2006). Students' concern that working with psychiatric patients is unsatisfying and stressful could represent an opportunity to shed light on a more general phenomenon: the impact of emotionally-laden experiences on medical students' developing professionalism, including their capacity for empathy, which has been repeatedly noted to decline over the course of medical school (Newton et al. 2008).

The purpose of this study was to determine: (1) a more detailed and nuanced account of medical students' perceptions of psychiatry, particularly as those perceptions relate to the perceived stress and satisfaction inherent in working with psychiatric patients; (2) the basis of those perceptions (including formal and informal educational exposures as well as personal experiences) (3) the impact those perceptions have on students' career decisions and their anticipated future practices; and (4) the implications of the formation of those perceptions for students' professional development. To that end we conducted and systematically analyzed in-depth interviews of senior medical students.

Methods

Participants

After receiving Institutional Review Board (IRB) approval, we solicited participants from fourth-year students at one large private urban northeastern medical school. Students were invited to participate only if they met one or more of the following criteria: they expressed an interest in psychiatry on a self-report questionnaire from a previous study (Cutler et al. 2006); they expressed interest in psychiatry during their medical school experience by attending a psychiatry club meeting; or they demonstrated an aptitude for psychiatry by performing well during their psychiatry clerkship (i.e., receiving *Honors*).

One hundred and six eligible students were invited to participate with the incentive of $25 compensation. Written informed consent was obtained from the 47 students who volunteered. Twenty-one participants were female and 26 were male. The median age was 26 years with a range from 22 to 41. Participants' undergraduate majors were mostly from the natural sciences ($n = 31$), with some from the humanities ($n = 10$) and the social sciences ($n = 6$). Twenty-five students matched in medical fields (e.g., pediatrics, internal medicine, neurology), while the other 22 matched in surgical fields (general surgery, a surgical subspecialty, obstetrics-gynecology). All of these characteristics are representative of the medical school's overall student population.

Materials and procedure

The principal investigator constructed the interview questions (see Table 1) from previous medical student self-report questionnaire findings (Cutler et al. 2006), as well as from a general review of existing psychiatric education literature (Feifel et al. 1999; Chew-Graham et al. 2003; Fink 1983; Walter 1989; Furnham 1986; Cutler et al. 2006; Galka et al. 2005; Martin et al. 2005; Singh et al. 1998; Balon et al. 1999; Sierles and Taylor 1995; Nielsen and Eaton 1981). Two faculty members in the department of psychiatry conducted the interviews shortly after students received notification of their residency matches. The interview format was semi-structured, allowing interviewers to clarify student responses. Interviews lasted approximately sixty minutes. Each interviewer took detailed hand-written notes. The interviewers' extensive psychotherapy process note-taking experience allowed the creation of accurate, frequently verbatim transcripts from these notes (Wolfson and Sampson 1976; Bailey 2000). In close collaboration with the faculty interviewers, three research team members transcribed the notes.

Analysis

We adhered to the established qualitative methodology of grounded theory to identify the salient themes as they emerged from our data (Strauss and Corbin 1998; Glaser 1992). This

Table 1 Interview questionnaire

- Describe your perceptions of the field of psychiatry as a career choice, including the types of patients and problems that psychiatrists tend to deal with.
- What are those perceptions based on (include educational and personal experiences)?
- In what way did your perceptions of psychiatry change during medical school?
- In your opinion, how is psychiatry similar and different from other medical specialties in general and from your chosen field in particular?
- Describe your impressions of the faculty and residents in the department of psychiatry, particularly their career satisfaction and levels of stress as compared with faculty in other fields in general and from your chosen field in particular.
- If you, a family member, or a significant other, have been in psychiatric treatment, how did that experience affect your perceptions of the field of psychiatry?
- How important will your training in psychiatry be to your planned career?
- If you attended any Psychiatry Club meetings, how did that experience affect your impressions about the field of psychiatry?
- What suggestions do you have to improve the psychiatric education here in order to provide a psychiatric curriculum that will be relevant for our graduates whatever their area of practice, while also exposing interested students to the advantages of a career in the field?

methodology has been widely used in social science and public health research, and has more recently been applied in the medical education setting (Ginsburg et al. 2002). First, two randomly chosen transcripts were reviewed in order to begin to identify emergent themes. During this initial review and throughout the process, the research team (one attending psychiatrist, two senior psychiatry residents, and one research assistant) worked both individually and as a group; disagreements were resolved by discussion.

Several initial versions of the coding structure were developed, applied to a few additional transcripts, and then rejected because of excessive complexity or over-simplification. The team agreed upon an initial coding structure that was successfully applied to five additional transcripts, such that each idea or "coherent unit" could be placed into one of the thematic categories. A "coherent unit" was defined as a section of text ranging from one to multiple sentences that expressed a single idea. While it was agreed that transcript sections could be "double-coded"—or even occasionally "triple-coded"—if more than one category was applicable, in practice most of the duplicate coding became unnecessary as the coding structure was refined.

As additional transcripts in sets of three to five were analyzed, categories evolved and the coding structure was further revised, subdividing the main categories to define more succinctly the emerging themes. Figure 1 illustrates an example of this process. A saturation point was reached when no new thematic categories appeared (after 23 transcripts had been coded). In other words, the categories comprising the coding structure were exhaustive and, for the most part, mutually exclusive.

The final coding structure (Table 2) was then systematically applied to each of the forty-seven transcripts. The coding results were entered into NVivo qualitative-data-analysis software (Kelle 1995) by one of the team members. The output of the NVivo analysis provides grouping of the coded elements, permitting an integration of themes across all
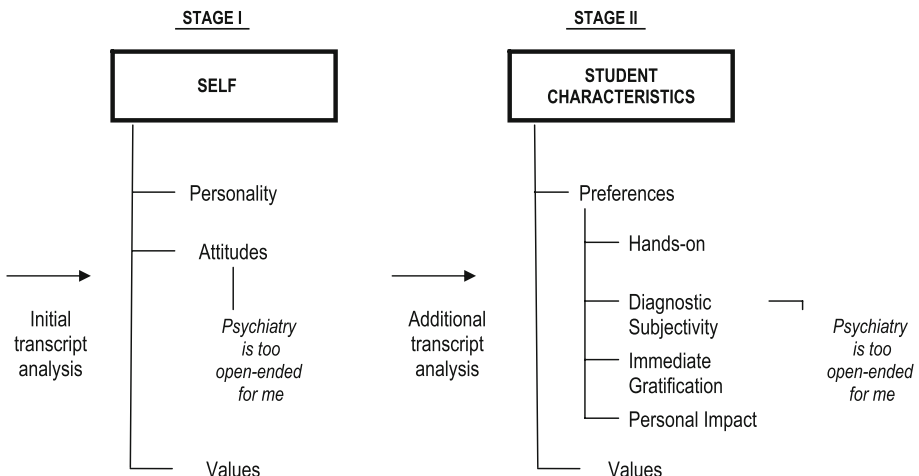
Fig. 1 Evolution of coding structure. An initial coding structure based on analysis of several transcripts placed the coded statement "psychiatry is too open-ended for me" in the category "attitudes" (stage I). After more transcripts were analyzed, the concept of "attitudes" became too non-specific. Statements coded under "attitudes" were moved to already existing categories in the coding structure or to newly created or refined categories. In this example, "personality" was refined to "preferences" and the statement "psychiatry is too open-ended for me" was coded as "diagnostic subjectivity," better reflecting the sentiment evident in this and other statements about students' perceptions of the nature of psychiatric diagnosis

Table 2 Coding Structure and Definitions

		Definitions
Patients	Hospital	Patients for whom students had direct care-taking responsibility
	Self	Student's own experience as a patient
	Family	Student's family members' experiences as patients
	Friends	Student's friends' experiences as patients
Psychiatrists	Faculty/residents	Comments pertaining to psychiatric attendings and resident physicians with whom the student interacted during medical school
	Family/friends	Comments pertaining to family and friends who are psychiatrists or other mental health professionals
Psychiatry	*Medical school curriculum*	
	General	General comments about medical school courses in psychiatry, the student's academic experience during medical school, and suggested improvements to the curriculum
	Pre-clinical	As above, pertaining specifically to the first and second year curriculum
	Clinical	As above, pertaining specifically to the clerkship and fourth year electives
	Field	
	Relationship with patients	General comments about the perceived relationship between psychiatrists and their patients
	Status	General comments about the perceived status of the field of psychiatry
	Expectations of stress	General comments about the perceived stress associated with the practice of psychiatry
	Lifestyle	General comments about the perceived lifestyle of psychiatrists
Student characteristics	Preferences	Self-identified character traits, temperamental inclinations, and interests that have remained relatively constant throughout the student's life
	Hands-on	Preference for working with hands
	Diagnostic subjectivity	Preference for clear-cut answers
	Immediate gratification	Preference for attaining immediate results
	Personal impact	Concern about being adversely affected by intense interactions with psychiatric patients
	Values	Religious, familial, and cultural beliefs of particular significance to the student, including opinions expressed by family members, friends, and teachers as reported by the student
Relevance of psychiatry to future practice		Perceptions held by the student regarding the relevance that his or her training in psychiatry will have in his or her chosen field of future practice.

respondents. Upon review of the NVivo analysis output, the research team decided on one further step in the coding process: assignment of a 'positive,' 'negative,' or 'indeterminate' valence to reflect the emotional tone of each unit of coded text. For example, statements reflecting respect, satisfaction, and interest received positive valences, whereas statements that were critical, frustrated, and dissatisfied were assigned negative valences. The

indeterminate valence was specifically assigned to statements of ambiguous emotional meaning. The valence assignments were made section by section of the NVivo output, referring back to the original interview transcripts as necessary. Finally, we tallied the comments for each section of the coding outline to provide a quantitative assessment of the students' perceptions.

Results

The frequency of occurrence of coded comments is summarized in Table 3. Multiple discussions with the entire research team in accordance with the guidelines of grounded theory resulted in a synthesis of the main themes that emerged from this data. Figure 2 illustrates a conceptual framework for describing these results: Medical School Experience; Psychiatric Practice; and Relevance of Psychiatry to Future Practice.

Medical school experience

Students made generally positive comments regarding the *pre-clinical* psychiatry curriculum. They stated that the courses were "great" and expressed enthusiasm for learning the "very interesting" material, which they "loved." Negative comments focused on the structure of the courses, rather than the material itself: for example, the preceptor wasn't "very active" or "interesting," or the discussion group was "too big."

In contrast, the *clinical* curriculum and—more specifically—the students' interactions with psychiatric *patients*, elicited many more negative comments. In fact, 12 out of the total sample of 47 students (26%) reported that an initially positive response to psychiatry became negative after their clinical clerkships. The following comment exemplifies this shift in attitude: "First and second year I thought maybe psychiatry, really interested, able to think the way psychiatrists do…[during the clerkship] uncomfortable with the patients…didn't enjoy interacting with patients, felt like a chore to see them."

While only 7 students (15%) made general comments associating the field of psychiatry with high levels of stress, many respondents described their actual clinical psychiatric experiences to be stressful. In particular, 15 students (32%) described *patient* interactions as "disturbing" and 9 students (19%) expressed concerns about the *personal impact* that working with psychiatric patients entailed, using such descriptive terms as "emotionally draining," "overwhelming," and "overly identified." The following comment, made by a student who "brought experiences home" during the psychiatry clerkship and was left with "mentally disturbing images," captures what seemed to be a prevalent concern: "Working with 'crazies' will make you 'crazy'." In addition, 24 students (51%) complained that psychiatric patients are treatment-refractory and "frustrating," eliciting feelings of helplessness in the respondents.

Students also seemed to have mixed feelings with regard to their psychiatry clerkship in general: many students made both positive and negative comments (concurrently) regarding the clinical curriculum and, furthermore, the number of comments in the indeterminate category was substantial (see Table 1). The following comments seem to capture this ambivalence: "… the most formative and distressing rotation was psychiatry. Other rotations were more business as usual." "[Psychiatry provided] a lot of patient contact; what fascinated me most seemed like [what I would have] the least impact on." These students echo a common theme: psychiatric patients are fascinating, but also stressful and frustrating.

Table 3 Frequency of occurrence of coded comments[a]

	Valence						Total
	Positive		Negative		Indeterminate		
	No. of comments	No. of students	No. of comments	No. of students	No. of comments	No. of students	No. of comments
Patients							
Hospital	6	5	59	45	2	2	67
Self	9	9	8	8	5	4	22
Family	4	4	9	7	8	8	21
Friends	12	10	8	8	13	11	33
Total no. of comments	31		84		28		143
Psychiatrists							
Faculty or residents	19	16	10	10	7	7	36
Family or friends	8	7	3	2	6	6	17
Total no. of comments	27		13		13		53
Psychiatry							
Medical school curriculum							
General	21	17	16	15	16	15	53
Pre-clinical	36	24	15	13	21	16	72
Clinical	31	20	65	41	30	21	126
Total no. of comments	88		96		67		251
Field							
Relationship with patients	12	10	4	4	1	1	17
Status	0	0	9	8	2	2	11
Expectations of stress	4	4	9	7	2	2	15
Lifestyle	13	13	6	4	7	7	26
Total no. of comments	29		28		12		69
Student characteristics							
Preferences							
Hands-on	0	0	14	10	1	1	15
Diagnostic subjectivity	0	0	3	2	0	0	3
Immediate gratification	0	0	13	12	0	0	13
Personal impact	1	1	10	9	2	2	13
Values	3	3	33	23	16	12	52
Total no. of comments	4		73		19		96
Relevance of psychiatry to future practice							
Relevance of psychiatry to future practice	46	40	0	0	4	4	50
Total no. of comments	46		0		4		50
Overall Total no. of comments	225		294		143		662

[a] Totals were not tabulated for the number of students in each thematic category (e.g. Patients). Such a tabulation would create redundancy since the same student could have separate coded comments in two or more of the sub-categories (e.g. hospital, self, family, and friends, all within patients). The Total # of Comments indicates the general tendency of respondents to comment on a particular thematic category
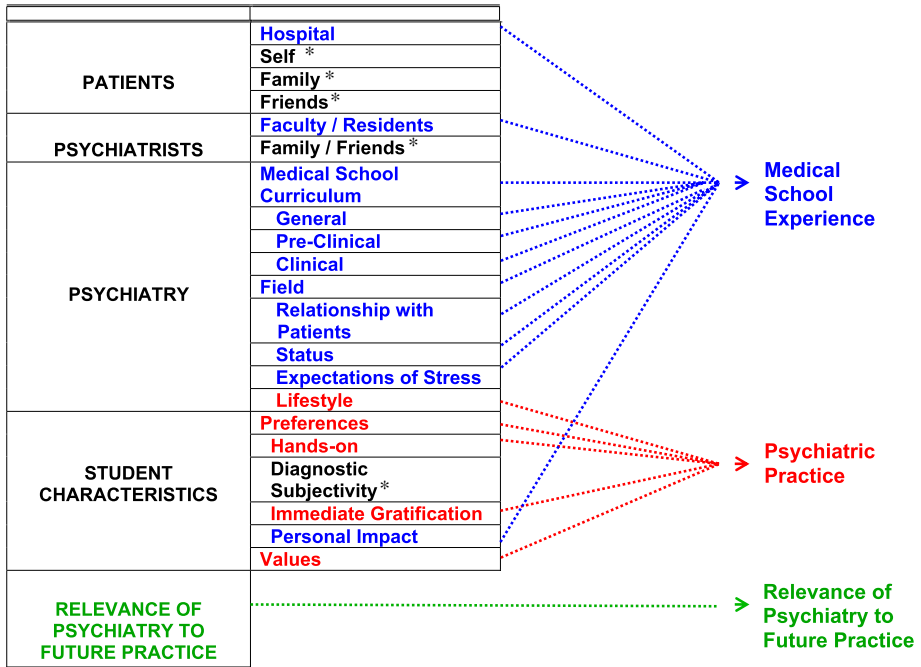
Fig. 2 Conceptual framework derived from the coding structure. The results are best organized and described within the 3 over-arching components of this conceptual framework as illustrated on the right-side of the figure. The framework was developed by the entire research team as a result of analyzing the final data set, which consisted of the coded and grouped themes with their associated valences and frequency counts. * These thematic categories had relatively fewer coded comments (see Table 3) and are not specifically described in the section 'Results'

Positive comments regarding students' experiences with psychiatric patients tended to focus on the work being interesting and fun, and the relationships that students forged with their patients on the psychiatry service were viewed as a draw to the field. Respondents noted the opportunity to have longer-term, more in-depth *relationships*, and to spend more time with patients. Clinical experiences with "appreciable" and even "impressive" treatment results were "very rewarding."

Sixteen students (34%) reported positive experiences with the *psychiatrists* with whom they came into contact in medical school, describing them as effective role models who were generally easy to get along with, "caring," "self-reflecting, very cerebral, patient," "friendly, approachable, without seeming stressed," and particularly satisfied as compared with physicians in other fields. One student went so far as to say "[I] never talked to a psychiatrist with regrets!"

Ten students (21%) made negative comments about faculty and residents; these tended to be overly generalized and seemed to reflect stereotyping of psychiatrists. "A lot of people go into psychiatry with a lot of their own psychopathology." "They are concerned about their own selves, being broken in their head." In addition, the perceived *status* of psychiatry in the medical community was described as a uniformly negative characteristic of the field. Respondents cited a "lack of respect among the medical community" and "disparaging comments about psychiatry" made by residents and faculty in other fields, and even being ridiculed when suggesting the usefulness of a psychiatric consultation.

Psychiatric practice

Many respondents described their families as having negative, stigmatizing attitudes toward the field (coded as the category *values*), although most of those students denied that their families' views had a significant impact on their career choices. Some students reported that their families regarded becoming a psychiatrist as "wasted time" or signifying that they were "not a real doctor"; others' friends expressed the opinion that "everyone in psychiatry is crazy themselves."

The *lifestyle* of psychiatrists was regarded as advantageous by 13 students (28%) who indicated that the logistics of the clinical work (hours, workload) appeared manageable, offering flexibility and "a lot of freedom" with less time spent in the hospital and more control over work hours. In addition, they perceived "a niche for everybody" in which one could "work with sick patients or have an eastside [i.e., upper middle class] practice." Several students observed that the field was particularly good for women with regard to having a family. Negative comments tended to focus on the limitations that health insurance imposes on the practice of psychiatry. Specifically, students believed that psychiatrists would have to focus more on medication management than on psychotherapy. In addition, a number of students admitted that they regarded the earning power of psychiatrists as being limited, but they denied the impact of this financial issue on their career choices.

Many respondents described two characteristics of the day-to-day work of psychiatry that were felt to be incompatible with their personal *preferences*. First, 10 students (21%) reported that they liked to work with their hands and noted that they would be unable to do so in psychiatry. "[There is] something about touching a patient, listening with a stethoscope, looking at a throat—an intimacy that strengthens the relationship with the doctor." "In high school I was artistic and liked working with my hands. I decided that I wanted to be a surgeon. Otherwise, I wouldn't have wanted to be a doctor." Second, 12 students (26%) felt that psychiatry's lack of immediate gratification would be problematic. "I'm impatient, I like tangible and immediate gratification and psychiatry does not offer this." "Psychiatry was drawn out. I like to finish a book in one weekend."

Relevance of psychiatry to future practice

Finally, nearly all participants felt that their experiences in psychiatry would be relevant to their future practices, regardless of specialty. They specifically appreciated their ability to recognize psychiatric disorders in their patients and to be aware of indications for psychiatric consultation and referral. Students described valuable attitudinal lessons learned from their psychiatric education, including the realization that mental illness is common and is "real pathology" accompanied by genuine suffering; increased optimism regarding the effectiveness of treatment; and legitimization of the profession.

Discussion

Our data present us with some sobering observations: stress, stigma, and stereotypes appear to adversely affect medical students' expected satisfaction from and willingness to work with psychiatric patients. This impact occurred despite students finding (1) their pre-clinical exposure to psychiatry appealing, (2) the in-depth relationships that they developed with psychiatric patients engaging, and (3) the opportunity to observe psychiatric patients'

status improve impressive. Our results do not indicate that students observed psychiatric faculty and residents with whom they worked as "stressed" (Cutler et al. 2006), which was one of our initial hypotheses. Instead, the students reported that they *themselves* experienced stress during their psychiatry clerkship. This particular explanation regarding students' perceptions of psychiatry as a stressful field has not before been cogently identified. While Kris (1986) reported 20 years ago that nearly one quarter of medical students seeking mental health service consultations with her did so during their psychiatry clerkship, stress specific to students' clinical psychiatric exposure has been neglected in the subsequent literature.

Our finding of students' experience of working with psychiatric patients as stressful is of interest to the medical and health science education community at large in light of the observation that medical students tend to experience a dramatic decline in empathy during their clinical exposure (Newton et al. 2008). Our data highlight stress as it relates to empathizing with hospitalized psychiatric patients. While empathizing with severely disorganized and emotionally labile patients may be *particularly* stressful for students, the conflicts and stress inherent in empathic identification with ill patients in *any* specialty may play a crucial role in the overall decline in empathy during medical training. Furthermore, this stress may be an important factor more broadly in the development of negative attitudes toward certain patient types (Griffith and Wilson 2001). Interestingly, educators' lack of attention to this barrier to empathy may reflect in parallel their own empathic failure, in order to protect themselves from re-experiencing the anxiety and discomfort of their trainees. This self-protective response has been described by Hundert (1996) with regard to more senior trainees' apparent lack of empathy for their more junior colleagues' stressful experiences.

While it has been recognized that students struggle to reconcile their empathic feelings with the demands of patient care (Branch et al. 1993), much of the medical professionalism literature tends to focus on the medical culture (Stern and Papadakis 2006) and behavioral recommendations that fail to fully recognize the stress that empathy can entail (Miller and Schmidt 1999; Larson and Yao 2005). The concept of "compassion fatigue" (Figley 1995; Huggard 2003) comes closest to such recognition, but it has been reserved mainly for describing the stress that health professionals experience when empathizing with trauma victims. More broadly, the stigmatization and stereotyping of certain types of patients may be related to the particular stress that empathizing with them involves. While stigmatization and stereotyping may be regarded as barriers to empathy, it may be more accurate to regard them as lying at one end of an empathic spectrum. This empathic spectrum can be conceptualized as placing over-identification at one extreme, in which the physician moves painfully too close to the patient's experience, and disengaged lack of empathy at the other extreme. Thus, when confronted with a suffering patient, a physician might choose to distance him or herself by categorizing the patient in a stigmatized and stereotyped manner, rather than risking the stress of over-identification that lies at the other end of the empathic spectrum.

Our data indicate that stigmatization and stereotyping of psychiatric patients by medical students arise in part from the influence of others: family members and friends, who reflect the views held by society at large; and non-psychiatric physicians, who, in reflecting those societal views as well as their own medical training, represent the impact of the "hidden" curriculum on our student subjects. Furthermore, stigmatization and stereotyping persist not just with regard to psychiatric patients, but also with regard to psychiatrists. We found that psychiatry's perceived low status among students' families, as well as among the medical school faculty and housestaff, were notable and could be considerable

impediments to all students' attitudes towards patients with psychiatric illness as well as for those considering specializing in psychiatry.

Implications

We believe that it is essential to discredit the persistent notion that 'working with crazies will make you crazy:' while working with psychotic and depressed patients entails real stress, students should be educated in a setting where they feel empathically supported—not overwhelmed—so that the stress is not magnified. Psychiatric educators should actively help students cope with the stress that they experience during their psychiatry clerkship and directly address the stigma and stereotypes that surround psychiatry. For example, in our own curriculum, during a case-based discussion of depression we now highlight students' reluctance to recommend prescribing anti-depressants in comparison with treatments for less stigmatized conditions such as hypertension. The class discussion illustrates the subtle ways in which stigma affects perceptions and practice. Interventions such as these could have beneficial effects on future non-psychiatric physicians' recognition and care of their patients' psychiatric issues, as well as on students considering pursuit of a psychiatric career.

We believe that our proposed understanding of stress and empathy has wide-ranging curricular implications beyond the confines of psychiatry. In considering how to enhance medical students' professional development in general and empathic skills in particular, we recommend that increased attention be paid to the forces contributing to a decline in empathy not just over medical students' training, but for all physicians. Simply attributing the decline in empathy observed during medical school to the pressures of the medical culture, the presence of unempathic role models, and other interpersonal issues (Haidet and Stein 2006), overlooks the underlying question as to why faculty and housestaff have become less empathic. Perhaps it is time for health professionals and educators to acknowledge that empathizing with extremely ill patients, whether psychiatric or not, can frequently be stressful. All health professionals, not just trainees, might then acknowledge the on-going struggle to keep our equilibrium and function at our best in caring for our patients and in taking care of ourselves. Faculty and residents might then model a professional stance that balances empathic identification with appropriate professional distance by providing not only their patients but also their students with empathy and emotional support.

Interestingly, the processes limiting health care professionals' ability to be empathic may be even more basic to human behavior than we, as medical and health profession educators, recognize. For example, as part of normal social functioning, it has been observed that adults regularly and automatically mimic other people's emotional facial expressions (McIntosh et al. 2006). Furthermore, current research into the basic neuroscience of empathy suggests that brain cells, known as mirror neurons, respond similarly when we *experience* an emotion, such as 'disgust,' and when we *witness* someone else looking 'disgusted' (Wicker et al. 2003). Finally, empathy is not 'all-or-none' and is not static; an individual's capacity for empathy is recognized to be influenced by cognitive processing (Lamm et al. 2007) and imitation (Iacoboni 2005). Thus, for physician-educators and medical students alike, these basic human processes may unknowingly contribute to not only the 'stress' of working with severely ill patients but also to the underlying power of the informal (Hundert 1996) or so-called "hidden"curriculum (Hafferty 2006). We propose that preceptors and supervisors throughout medical and

health science education play a key role mediating medical students' abilities to process strong emotional reactions to difficult situations that otherwise can result in stigmatizing statements like "*Working with crazies will make you crazy*." Recognition of the unconscious nature of these types of reactions—whether student- or instructor-initiated—is necessary to begin to address them.

Limitations

We acknowledge the boundaries of our methodology and interpretations. First, the presence of faculty interviewers may have made the students reluctant to be fully open and honest in their responses. Even when grades are not at stake, students may have been unwilling to share specific comments about faculty with whom they rotated. On the other hand, the interviews were conducted when the students had completed nearly all of their academic requirements, certainly all within the department of psychiatry; they were within a month or two of graduation; and they did seem comfortable in discussing many negative opinions relating to psychiatry. Second, the timing of the interviews soon before the students' first year of residency training may not have been most conducive to introspective observations since graduating students tend to be filled with anticipatory anxiety: that is, our respondents may have felt inclined to convince themselves that their career choices were clearly best for them. At a less anxiety-provoking time, students' views might be characterized by more ambivalence. Third, this study is confined to one medical school, and thus its results may not generalize across institutions. To address this issue, a more focused self-report questionnaire that builds from the richness of the themes identified in this analysis could be developed and distributed to medical schools with a range of student populations and educational experiences to insure validity and reliability. Finally, there is a lack of empirical research supporting the relationships that we have drawn between the neuroscience of empathy and medical education. Further research is needed to address these conjectures in a rigorous fashion.

Conclusion

The relationships that we have described among stress, stigmatization, and stereotyping along an empathic spectrum suggest that increased attention should be paid to the stress that empathy can entail. Our data indicate that medical students associate mental illness with stress, stigma, and stereotypes even after four years of medical education. This finding is likely to exist to some extent across medical curriculums worldwide. If medical students are not given the tools to metabolize their reactions to psychiatric patients, then it seems reasonable to presume that in the future as practicing physicians they will experience reactions similar to those reported by our participants, thus perpetuating the stress, stigmatization, and stereotyping associated with psychiatry and mental illness. Therefore, within the field of psychiatric education, faculty should actively help students identify and cope with the stress that they report experiencing as they work with psychiatric patients. Such interventions will hopefully improve the recognition and care of patients with mental illness by all newly graduating physicians. More generally, our finding that students experience working with psychiatric patients as stressful is of interest to all medical educators in light of the dramatic decline in empathy that has been observed over the course of medical school. The conflicts and stress inherent in empathic identification with

ill patients in any specialty may play a crucial role in this overall decline in empathy. This perspective may allow for the creation of similarly targeted interventions throughout the medical school curriculum to address and perhaps begin to soften the "hardening of the heart" observed in medical education worldwide.

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