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Addressing Mental Health Concerns in Primary Care: Practices Among Medical Residents in a Rural Setting

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Abstract
Behavioral health issues like anxiety and depression negatively impact numerous aspects of primary care, including medical regimen adherence, communication, physical well-being, and engagement in beneficial health behaviors. This study aimed to examine internal and family medicine residents': (1) patterns of addressing mental health concerns (e.g., frequency of referral for psychotherapy and/or medication), (2) self-perceptions of competency in assessment and treatment of specific mental health disorders, and (3) frequency of utilization of efficacious therapeutic strategies during clinical encounters. Self-report surveys were administered to Family Medicine and Internal Medicine residents ($N = 39$). Descriptive analyses indicated that 81% of the time, residents discussed mental health concerns when it was the presenting concern, and routinely offered medication and psychotherapy (71% and 68% of the time, respectively). Residents felt most competent in addressing major depressive disorder and generalized anxiety disorder, and least competent in addressing somatization disorder and bipolar disorder. Residents reported that they most often used motivational interviewing (MI), followed by Cognitive Behavioral Therapy, psychoeducation, and solution-focused strategies during medical encounters. These findings highlight a need to identify barriers to addressing mental health conditions in primary care and potential gaps in training that might address low levels of perceived competency among medical residents.

Keywords Primary care issues · Behavioral sciences · Residency · Mental health

The lifetime prevalence of mental illness in the United States is nearly 50%, and approximately 25% of the population meets diagnostic criteria for a psychological disorder in a given year (Kessler & Wang, 2008). The primary care physician (PCP) plays a significant role in a multifaceted approach to reducing the burden of mental health issues on individuals and society (Kazdin & Blase, 2011). PCPs frequently encounter patients presenting with mental health concerns, and national data suggest that 20% of visits conducted with primary care physicians are mental health-related (Centers for Disease Control and Prevention, 2011). For general outpatient visits, antidepressants are the third most common drug class mentioned during documented encounters (Centers for Disease Control and Prevention, 2011; Rui, Hing, & Okeyode, 2014). Given the high prevalence of mental health-related primary care encounters—and the fact that patients with mental health conditions have worse medical regimen adherence, physical well-being, and engagement in beneficial health behaviors—providers' proficiency addressing mental health conditions is paramount.

Medical settings that have adopted integrated care models have had promising outcomes (Butler et al., 2008; Padwa et al., 2016; Zeiss & Karlin, 2008). Collaborative treatment between PCPs and behavioral health providers creates a multidisciplinary infrastructure better prepared to address mental health concerns. However, this is not yet standard practice in primary care, and resources to support an integrated care model are unlikely to be available in many practices, especially those in rural areas that serve a smaller population (Health Resources and Services Administration, 2017; Kathol, Butler, McAlpine, & Kane, 2010; Smalley et al., 2010). Consequently, many primary care physicians face a practical reality that patients may be coming to them as a first, and possibly only, point of contact for a mental health concern. In fact, the majority of patients who present with

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mental health difficulties are seen in primary care (Wang et al., 2006) and about half of people who die by suicide visit their primary care provider within a month of killing themselves (Ahmedani et al., 2014; Luoma, Martin, & Pearson, 2002).

In 2016, the US Preventative Services Task Force recommended that there should be screening for depression in the general adult population, as it improves the accurate identification of depression in adults in primary care. It also recommended that following screening, there should be a system that ensures "accurate diagnosis, effective treatment, and appropriate follow-up" (Siu & US Preventive Services Task Force, 2016). Standardized screening can potentially help reduce discrepancies in detection that may place disproportionate burden on certain segments of the population. For instance, mental health disorders are less likely to be detected in African Americans and younger adults (less than 35). Physicians, however, are more likely to detect mental health difficulties with patients who have diabetes or hypertension (Borowsky et al., 2000).

Residency training programs are in unique positions to provide training in behavioral health issues to equip future providers with the skills necessary for independent practice. Currently, the Accreditation Council for Graduate Medical Education (ACGME, 2018) family medicine guidelines require "faculty members dedicated to the integration of behavioral health into the educational program." These requirements allow for significant autonomy regarding programmatic content, and do not include specific competencies and/or areas of training. Notably, a formal requirement is not present for internal medicine residency programs despite the fact that internists are just as likely to encounter patients in primary care presenting with a mental health concern. Research is needed to better understand how family medicine and internal medicine residents address mental health conditions in their practice to inform the development of future educational standards.

This study examined internal and family medicine residents': (1) self-reported patterns of addressing mental health concerns (e.g., frequency of referral for psychotherapy and/or medication), (2) accuracy in estimations of the prevalence of mental health disorders in their practices, (3) self-perceptions of competency, and (4) frequency of utilization of efficacious therapeutic strategies.

Methods

Participants included PGY1-3 Family Medicine and Internal Medicine medical residents ($N=39$) training at a rural Pennsylvania teaching hospital. Residents were surveyed anonymously, and the protocol was approved by the Institutional Review Board of the associated hospital.

Residents completed a demographic questionnaire that included questions related to previous experiences and/or training in mental health (e.g., completed behavioral health rotations, number of previous psychology classes, research experiences, degrees).

Ten questions were included to determine residents' perceptions of presenting mental health conditions, as well as how often and what they did to address patient's mental health concerns. Residents estimated the percentage of patients who presented with mental health conditions as their chief complaint during a typical primary care appointment (i.e., "What is your estimate of the percentage of patients that present with a mental health condition as the chief complaint in your practice?"). Of those patients, residents also estimated the percentage of patients they believed met diagnostic criteria by category (e.g., depressive, anxiety, bipolar, personality). Categories were chosen based upon pre-existing categories within the electronic medical record to allow for comparisons between recorded diagnoses and estimated diagnoses.

Regarding treatment decisions, residents estimated the frequency with which they (a) addressed the chief complaint of a mental health concern, (b) recommended psychotherapy, and/or (c) recommended medication. A brief measure was developed for the purpose of this study, to assess residents' clinical approaches to mental health complaints and use of mental health interventions during medical encounters (e.g., In the last ten patients with mental health concerns, how often did you use any of the following therapeutic interventions?) Intervention strategies were derived from evidence-based strategies commonly used with the most common mental health disorders (e.g., Cognitive Behavioral Therapy, Psychoeducation, Motivational Interviewing). Frequency estimates ranged from 1 (*never*) to 5 (*quite often*). Using a 7-point Likert scale from 1 (*not competent*) to 7 (*competent*), residents indicated their perceived competence in their own ability to diagnose and assess common mental health conditions.

Electronic medical record (EMR) review in EPIC © allowed for retrieval of frequency and percentage of recorded mental health diagnoses of patients seen by residents (by program) during the past year. Diagnoses recorded during encounters were captured and organized within the data retrieval by specific categories (e.g., depressive disorders, anxiety disorders etc.). All non-resident providers were removed from data capture to increase the precision of the comparison. Percentages were calculated by identifying the number of individuals within each mental health diagnostic category (e.g., depression, anxiety) and dividing by the total number of patients who had a mental health diagnosis. The availability of EMR data allowed for comparison between resident self-estimates of

specific mental health diagnoses and recorded frequencies of diagnosed mental health conditions from 2017 to 2018.

Results

Table 1 displays participant characteristics by program type. The two groups significantly differed according to race/ethnicity, such that the majority of Family Medicine Residents identified as white ($n = 14$, 93.3%) whereas the majority of Internal Medicine Residents identified as Asian ($n = 19$, 79.2%). Family Medicine Residents reported a greater number of previous mental health courses ($X^2(4) = 16.8$, $p = .02$).

Eighty-one percent of the time, medical residents reported discussing mental health concerns when it was the presenting concern, and routinely offered medication and psychotherapy. Women were more likely to report referring patients to therapy ($\beta = 0.38$, $p = .02$) and Family Medicine residents were more likely to offer medication ($\beta = -0.43$ $p = .009$).

Table 2 indicates residents' estimates of the frequency of specific mental health conditions compared to recorded rates of specific mental health diagnoses, according to the

Table 1 Demographic information by program

Characteristics	Family medicine ($n = 15$) *n* (%)	Internal medicine ($n = 24$) *n* (%)	Combined ($N = 39$) *n* (%)	Test statistic[a]	*p*
Age	30.9 (3.6)	29.5 (1.8)		$t(36) = 1.6$	.11
Gender				$X^2(1) = 1.9$	.17
Female	9 (60)	9 (37.5)	18 (46.2)		
Male	6 (40)	15 (62.5)	21 (53.8)		
Year				$X^2(2) = 0.65$	.723
PGY1	4 (26.7)	9 (37.5)	13 (33.3)		
PGY2	6 (40.0)	7 (29.2)	13 (33.3)		
PGY3	5 (33.3)	8 (33.3)	13 (33.3)		
Race/Ethnicity				$X^2(5) = 28.6$	.00*
American Indian					
Asian	1 (6.7)	19 (79.2)	20 (51.4)		
African American		1 (4.2)	1 (2.6)		
Hispanic/Latino					
White/Caucasian	14 (93.3)	3 (12.5)	17 (43.6)		
Other					
# of previous mental health courses				$X^2(4) = 16.8$	.02*
0		1 (4.2)	1 (2.6)		
1	2 (13.3)	13 (54.2)	15 (38.5)		
2	1 (6.7)	6 (25.0)	7 (17.9)		
3	4 (26.7)		4 (10.3)		
4+	8 (53.3)	4 (16.7)	12 (30.8)		

[a]Comparison of internal and family medicine residents

Table 2 Prevalence estimate of mental health conditions by residents

Disorder class	Family medicine ($n = 15$) *M* (SD)	Actual FM % (according to EMR)	p^a	Internal medicine ($n = 24$) *M* (SD)	Actual IM % (according to EMR)	p^b
Depression	58.3 (22.6)	44.6	.03*	56.5 (20.9)	68.1	.01*
Anxiety	51.7 (21.9)	50.0	.77	37.5 (26.5)	26.9	.07
Substance use	13.0 (9.4)	23.3	.00*	23.9 (18.8)	21.8	.62
Bipolar	9.0 (8.3)	4.7	.06	13.3 (16.9)	12.4	.80
Psychotic	3.4 (4.8)	4.1	.60	9.7 (16.7)	4.2	.14
Personality	12.5 (19.3)	1.2	.04*	21.3 (28.8)	0	.00*

[a]Comparison of Family Medicine estimated versus actual EMR data

[b]Comparison of Internal Medicine estimated versus actual EMR data

electronic medical record. Multiple regression analysis controlling for ethnicity, gender, year in program, and previous mental health training was used to determine whether training program significantly predicted resident's estimates of specific diagnostic categories. Family Medicine residents significantly overestimated the prevalence of depressive disorders among patients with mental health conditions ($M = 58.33$, SD = 22.57) compared with EMR data, $t(14) = 2.36$, $p = .03$. Internal Medicine residents underestimated the prevalence of depressive disorders ($M = 56.5$, SD = 20.86) compared to EMR data, $t(23) = -2.65$, $p = .01$.

Family medicine residents overestimated the prevalence of substance use disorders ($M = 51.67$, SD = 21.93, $t(14) = 4.38$, $p = .001$). Both Family and Internal Medicine residents significantly overestimated the prevalence of personality disorders when compared to diagnosis rates in the medical record ($M = 12.47$, SD = 19.27, and $M = 21.25$, SD = 28.78, respectively).

In regards to feelings of competence, medical residents felt most competent in addressing major depressive disorder ($M = 5.56$, SD = 1.07) and generalized anxiety disorder ($M = 5.49$, SD = 1.09). They reported the least competence in addressing somatization disorder ($M = 3.62$, SD = 1.29) and bipolar disorder ($M = 3.87$, SD = 1.49).

Finally, residents reported relatively infrequent use of therapeutic interventions to address specific mental health concerns in primary care. Table 3 indicates specific utilization by program type. Residents reported that they most often used motivational interviewing strategies. Use of strategies did not differ by gender, year, or program type, with the exception of motivational interviewing. Program type predicted use of motivational interviewing strategies, such that Family Medicine residents reported significantly more use of MI, when compared to Internal Medicine residents ($\beta = -0.89$, $p = .01$).

Discussion

The present study provides data regarding medical residents' patterns of addressing mental health concerns in primary care including prevalence estimates, perceived competency, and reported use of empirically supported therapeutic strategies. Given the burden of mental health at a population-level (Kazdin & Blase, 2011) and cost of mental health problems presenting in primary care (Jason & Ferrari, 2010; Kessler & Greenberg, 2002), how primary care providers address these concerns is critical to improving individual patient outcomes and reducing the impact of untreated mental health issues at the population level. Although the present data set was limited to a small sample of medical residents providing primary care within internal medicine and family medicine programs at a rural hospital, these findings have numerous implications for future study.

Consistent with other literature that suggests that health care providers may not identify or broach medical or mental health topics important to their patients, (e.g., Clegg, Towner & Wylie, 2012; Ekberg, Grenness, & Hickson, 2014; Glascoe, 2000) residents reported that they did not discuss mental health concerns with their patients nearly 20% of the time when a mental health concern was the patient's presenting complaint. A variety of factors could contribute to a mental health concern not being addressed during a primary care encounter including attention to other presenting concerns or stigma surrounding mental health issues (Corrigan, 2004). PCPs often address a variety of health concerns in a single, brief encounter and may feel time pressure to focus on the most immediate or obvious issues. Training in brief assessments for common mental health disorders may improve detection in primary care, especially with the development of some initial screening tests as short as two items (e.g., Kroenke, Spitzer, Williams, Monahan, & Lowe, 2007). Establishing patient priorities (Grant, Adams, Bayliss, & Heisler, 2013) and setting an appointment agenda (Kowalski et al., 2018) may help to ensure that mental health

Table 3 Utilization of treatment strategies from 1 (*never*) to 5 (*quite often*)

Strategy	Family medicine ($n = 15$) M (SD)	Internal medicine ($n = 24$) M (SD)	Combined ($N = 39$) M (SD)	p[a]
Cognitive behavioral therapy	2.0 (1.3)	2.2 (1.1)	2.1 (1.1)	.28
Psychoeducational/educational techniques	3.0 (1.5)	2.5 (1.2)	2.7 (1.3)	.11
Motivational interviewing	3.3 (0.9)	2.8 (1.3)	3.0 (1.2)	.01*
Solution-focused/problem-solving techniques	3.0 (1.4)	2.7 (1.3)	2.8 (1.3)	.28
Other approach	2.9 (1.4)	2.5 (1.4)	2.7 (1.4)	.18

[a]Comparison of internal and family medicine residents

concerns are addressed during primary care visits, especially for patients with a complex health history.

An additional factor alluded to in the present study is the fact that residents' estimates of the prevalence of certain mental health issues sometimes differed significantly from the available EMR data. Resolving these discrepancies may be an important element to better addressing patients' mental health concerns by making residents more aware of the likelihood of encountering certain psychological disorders. For example, residents significantly overestimated the prevalence of personality disorders, which would not typically be amenable to brief intervention. If acute mental health concerns are sometimes dismissed as embedded personality issues, a PCP may be less inclined to explore the topic of concern during a routine office visit. Conversely, a PCP may focus solely on screening for disorders more commonly encountered. In the present data, family medicine residents actually overestimated the prevalence of major depression and substance use disorders.

It is also possible that residents may be addressing certain mental health concerns in a non-diagnostic manner, making only secondary note of these concerns in the medical record. However, residents may run the risk of minimizing mental health concerns if they are not directly addressed or "pushed aside" due to focusing on other presenting issues. This divergence from a patient-centered care model may be of concern when system-wide values aim to address specified needs of patients. Understanding why, according to the residents' self-reports in this study, nearly one in five patients presenting with a mental health concern may not have their mental health concern addressed in primary care is critical to reducing the mental health burden to individuals and society (Kazdin & Blase, 2011; Kohn, Saxena, Levav, & Saraceno, 2004). Future research should examine specific reasons why a mental health concern might not get addressed by a medical resident during a primary care encounter.

Although, as might be expected, residents reported that they were most comfortable assessing and treating mental health conditions with the highest prevalence rates, and their reported use of efficacious therapeutic techniques was minimal. Family Medicine residents were more likely than internal medicine residents to report using Motivational Interviewing strategies. This specific discrepancy may be due to programmatic training content since the family medicine residency sampled in this study has a designated core faculty member that provides a 12-month behavioral science curriculum (with Motivational Interviewing content), co-precepting, consultation, and integrated care within the practice. The internal medicine residency program in this sample has no behavioral science curriculum or integrated mental health care providers. Although these data are limited by self-report (i.e., there are no observational data of actual practice), this finding suggests that programmatic training content may impact how residents practice medicine and engage with patients. Future research might assess the impact of specific training modules and/or experiences on provider practices and level of competency in addressing mental health needs. This would also assist with contributing to the development of behavioral health competencies for medical providers, which has yet to be identified.

Given the fact that residents reported providing any psychotherapy, it is questionable what their practices may be since osteopathic and medical training programs do not traditionally include training competencies in psychotherapy. These data are limited by self-report. That is, if residents are not trained in psychotherapy, and have not developed specific skills, what they report doing is questionable. Reporting use of these therapeutic approaches is different than actual practice, and future studies might include observational data that confirm use.

Limitations

Several methodological constraints of this study may limit generalization of the findings. Primary among these is the use of self-report measures to assess medical residents' recollection of the frequency with which they address mental health concerns. This approach introduces potential retrospective reporting biases such that residents' estimates may be influenced by their memory of recent encounters or by the way in which they typically document mental health symptoms in the medical record (e.g., entering a diagnosis versus commenting on subclinical symptoms in an encounter note). In addition, several measures developed for the purpose of this study were not previously validated measures. Although measures were designed to capture specific types of data relevant to the present research question, use of non-evidence-based questionnaires leaves these findings subject to validity and reliability concerns. Future research should directly examine the way in which medical residents approach mental health symptomology, especially the way in which they apply diagnostic criteria. For example, how do medical residents typically document subclinical symptoms of depression among patients who do not meet diagnostic criteria for major depressive disorder?

Given the exploratory nature of this study, the findings are also limited by the sample itself, which was small and comprised solely of medical residents working in a rural geographic region. Additionally, although there is value in assessing residents' perceived level of competency in addressing patients' mental health concerns, future research might examine performance in this area via behavioral science curriculum competencies or other behavioral health measures rather than through self-reported feelings of competency.

Finally, an exploratory measure was developed to assess medical residents' use of specific evidence-based interventions in response to patients' mental health concerns. However, medical residents may have little or no training in these mental health interventions throughout their medical education. Therefore, future research may benefit from accounting for residents' level of prior training in evidenced-based mental health interventions. Despite these limitations, findings highlight a need to identify barriers to addressing mental health conditions in primary care and potential gaps in residency training that might address low levels of perceived competency and inaccurate knowledge among medical residents.

Compliance with Ethical Standards

Conflict of interest Danielle L. Terry and Christopher P. Terry declare that they have no conflicts of interest.

Statement of Human and Animal Rights and Informed Consent All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards.

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