

The Effects of Stigma toward Mental Illness on Family Physicians

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Abstract

Many individuals utilize primary care as their main source of mental health care, as in many areas of the US access to specialized psychiatric care does not meet the demand. Prior research has showed that many healthcare practitioners, including those working in generalist fields, carry stigmatized views about individuals with mental illness. Such stigmatized views can result in misattribution of symptoms to mental illness and a decline in proper diagnosis and treatment. Our study **aims** to examine if stigmatized views about mental illness relate to family medicine physicians' comfort levels with treating mental illness, patterns of referral to psychiatrists, or amount of continuing medical education on psychiatric issues. Our **hypothesis** is that family medicine physicians who carry less stigmatized views will be more comfortable and up to date with psychiatric care practices and less likely to refer mental health issues to specialized mental health services. **Methods:** We administered an email survey to family medicine physicians via the Arizona Academy of Family Physicians monthly electronic newsletter. The survey contained demographic questions, a short (5-question) validated stigma questionnaire (Attitudes to Mental Illness Questionnaire or AMIQ), and questions regarding self-stated comfort level with mental illness, amount of recent mental-health CME, and likelihood of referral for various mental illnesses. **Results:** AMIQ stigma ratings and referral rates for anxiety were significantly related ($p=.012$), as were AMIQ stigma ratings and amount of mental health CME ($p=.001$). Other trends were discovered, but were not significant. **Impact:** These results further demonstrate the need for increased emphasis on psychosocial and psychiatric issues, particularly stigma reduction, in family medicine residency training and CME. If family medicine physicians with high levels of stigma are less likely to treat mentally ill patients or seek further education regarding psychiatric issues, it could disrupt their patients' quality, cost, and continuity of care.

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Introduction/Significance

THE ROLE OF PRIMARY CARE PHYSICIANS IN PROVIDING MENTAL HEALTH CARE

In the United States, a shortage and maldistribution of mental health providers has resulted in an unmet need for psychiatric care. Although in any given year 25% of the population meets the criteria for a mental disorder¹, 90.6 million Americans live in Mental Health Professional Shortage Areas²⁻³. This shortage is reflected in delays of six to twenty-three years in seeking treatment for mental illness⁴. As a result, primary care physicians often fill the gaps for underserved areas and populations: studies suggest that about half of mental health services are supplied by primary care providers and that primary care providers are more likely to provide mental health services in older, more Hispanic, and rural populations⁵⁻⁶. Primary care physicians are particularly likely to treat common disorders such as depression and anxiety⁷, which affect 7% and 18% of US adults, respectively³. As a further reflection of the dearth of psychiatric services in the US, one study found that over half of surveyed primary care physicians had difficulties obtaining mental health referrals⁸. The present study is aimed at identifying if increased stigma among family medicine physicians is related to lack of comfort and/or increased referral rates to specialized care.

Because primary care physicians provide so much mental healthcare, it is vital that the quality of healthcare they provide is high. The World Health Organization⁹ describes a lack of primary care physician experience and resources as a major contributor to the heavy burden of mental illness throughout the world. In addition, patients who see primary care physicians perceive their care as less adequate than those who see psychiatrists¹⁰. The importance of training primary care physicians in psychiatric and psychological topics also lies in their role in treating the physical illness of mentally ill patients: those with mental health issues are more likely to have physical illness than the general population¹¹. Because “diagnostic overshadowing” (the misattribution of physical illness to mental illness) is common¹¹⁻¹², in order to properly diagnose and treat *physical* illness, primary care physicians must be able to properly diagnose and treat *mental* illness.

PHYSICIANS AND STIGMA

One well-documented force preventing patients from seeking mental health care is the prevalence of stigma towards mental illness. Stigma, defined as a perception of an undesirable attribute, results in a view of the stigmatized individual as “different.” Stigma may lead to prejudice¹³ and discrimination, with discrimination being the dimension most affecting the individual¹⁴. In many countries, mental illness is viewed as being a sign of weakness or lack of willpower, and those with mental illness may not be viewed as truly suffering from a health problem. Throughout the world, stigma is perpetuated by the slow rate of discovery regarding the causes of mental illness⁹. Stigma may even be directed toward oneself: in addition to the fear or being stigmatized, and thus discriminated against, by healthcare professionals, deeply ingrained self-stigma may prevent individuals from seeking medical care^{15, 33}.

That healthcare providers hold stigmatized views towards mentally ill individuals is well-documented. Physicians often use pejorative language and may neglect the use of patient-centered language¹⁶, which may marginalize patients. Multiple studies have found that healthcare providers are likely to hold negative views towards the mentally ill: they are more likely to be pessimistic regarding mentally ill patients’ long-term outcomes¹⁷ and more likely to hold stereotypes than the general population¹⁸. Mental health professionals such as psychiatrists are not immune from stigmatized views¹⁷⁻¹⁹; nor are general physicians²⁰, who may be more stigmatizing than physicians in other specialties¹¹. The negative views held by physicians may develop as early as medical school¹¹ and can endure into practice, as stigma towards psychiatry itself and a lack of interest in psychiatric topics may be responsible for low rates of physicians pursuing CME about these topics²⁰⁻²¹. Stigma is a pervasive aspect of human psychology and physicians are not immune from exhibiting stigma towards their patients.

DISCREPANCIES IN PRIMARY CARE PROVIDER COMFORT LEVELS AND REFERRAL PATTERNS

In light of the shortage of mental health resources and the unique role of primary care physicians in providing not only “first line defense” against mental illness but in the physical care of mentally ill patients, the importance of the continued training of primary care physicians becomes clear. Generalist physicians refer for a variety of reasons, and tend to differ in their referral patterns. Unless there are specific patient requests or insurer requirements for referral they tend to manage a patient in their own practice if they feel able to do so²²⁻²³. Prior research has found that PCPs are more likely to refer patients with psychotic illnesses^{22,24} and tendencies toward self harm²⁵ and less likely to refer the most commonly seen mental disorders in family practice settings -- depression and anxiety²⁴.

Family physicians, of course, differ in their comfort or confidence levels as well, and research suggests that comfort levels may be related to referral patterns. One study²⁶ found that family medicine physicians who consider themselves to be less confident in treating mental illness refer patients more. Comfort levels may also be related to amount of training – another study found that though only 19% of generalist physicians had advanced psychosocial training via CME or workshops, those with more psychiatric training were more confident treating depressed patients and less likely to view depressed patients as causing or exaggerating their illnesses²⁰.

The current interest in the medical home emphasizes the need for integrated care, involving both primary care physicians and mental health professionals, to ensure the ongoing management of patients with chronic mental illness²⁷⁻²⁸. However, it is also important to consider that the concept of an integrated primary care-mental healthcare team also stemmed from the need for rapid evaluation and stabilization of mental health patients, a concern about long waiting times for mental health services, and problems with lack of integration and coordination of primary care and mental health services²⁸. In addition, most patients desiring mental health-related counseling from their primary care physicians do not desire a referral to a specialist²⁹.

While referral to specialists is not an inherently negative occurrence, referrals should be made with the goal of improving patient care and should not be due to discomfort or stigma in the referring physician. Making physicians more comfortable with mental illness could reduce unnecessary referrals; fortunately, interventions and training sessions about mental illness have been shown to improve physician comfort and competency with psychiatric topics³⁰⁻³³. However, training in psychiatry varies widely², and a targeted and effective intervention requires knowledge of the specific deficits influencing the discomfort among physicians. For now, evidence suggests that family physicians differ in their approaches to treating mental illness with regards to both comfort levels and referral patterns.

GAPS IN THE LITERATURE

Past research has suggested that physicians have varying degrees of comfort or confidence in treating mental illness^{20, 25}, and that decreased confidence is associated with increased referrals²⁶. However, there is a dearth of information as to the nature of the relationship between comfort and referral rates. It is possible that stigmatized views are related to discomfort, as stigma results in a negative sense of the “other” which could result in a discomfort or a need for distance. There is ample evidence that physicians, despite their training, hold stigmatized views toward mental illness. It is also possible that discomfort is related to inadequate knowledge or an insufficient amount of relevant CME, as CME is an important part of increasing the knowledge bases of physicians²⁵ and prior research has found a link between training and confidence levels²⁰. Of course, these factors are likely not independent of each other; stigma and lack of knowledge may be related to one another. It is also possible that referral patterns may be related to stigma regardless of other factors. Prior research in areas such as HIV and lung cancer has revealed that stigma negatively impacts the care patients receive^{13, 34}, but has yielded conflicting results as to whether differences in referral rates are related to stigma, to discrepancies in knowledge, or both³⁵.

In short, though research indicates that comfort levels, referral patterns, and knowledge bases of primary care physicians vary, and though a vast body of research has shown that

physicians hold stigmatized views, few studies have examined the nature of physician stigma and whether it plays a role in these factors.

RATIONALE FOR EXAMINING THE RELATIONSHIPS BETWEEN STIGMA, COMFORT LEVELS, CME, AND REFERRAL RATES

The present study is designed to examine the relationship between stigma, discomfort, knowledge, and referral rates. It examines if levels of stigma in family physicians are related to increased self-stated comfort levels with treating mental illness, to probe whether decreased comfort tends to occur in those with more stigmatized views. Because self-stated comfort levels are subject to self-perception bias, and in order to examine the role of stigma more directly, this study also seeks to examine if physicians with high levels of stigma tend to refer more, independent of self-stated comfort levels. Finally, it examines if amount of recent CME (as indicator of increased knowledge or training) is related to decreased stigma levels. These aims are related to an overarching prediction that stigma towards mental illness negatively impacts the care provided by family medicine physicians in that they are less likely to feel comfortable treating psychiatric patients themselves, are more likely to refer, and are less likely to further their psychiatric training.

With knowledge of the relationship between comfort levels, stigma, and CME, programs may better target areas of family physician training in need of reform. Training programs for physicians will be most effective when their goals are clear and evidence-based, especially considering the multitude of angles from which physician training may be approached. Many training programs for healthcare professionals targeted at stigma reduction have been shown to improve negative views³¹⁻³³. Therefore, if comfort levels are correlated with stigma, or if increased stigma itself is correlated with increased referral rates, it may prove beneficial to enact targeted stigma-reduction programs. Whether enacted in the state of Arizona or nationally, the intended effect of these programs would be to improve physician comfort levels, thereby reducing costly, time-consuming, and potentially disruptive referrals and to open limited mental health resources to those individuals with the greatest need.

Research Materials and Methods

Survey Administration and Development

This study was conducted via a SurveyMonkey survey link in email. The SurveyMonkey link was embedded in a monthly email newsletter, open for 2 months, and sent to the over 1,500 members of the Arizona Academy of Family Physicians. We chose to administer our survey only to Arizona family physicians in order to keep the survey results manageable in the time allotted to complete the research. We did not think a national survey was feasible from a data analysis and time standpoint. The survey (Figure 1) included four anonymous demographic questions regarding years and setting of practice. It also contained a question about comfort level with mental illness using a 5-point Likert scale.

The next item inquired about immediacy of referring (immediately, after 1-2 medications, or after 3 or more medication attempts) to specialized psychiatric care for various mental illnesses, including depression, anxiety, schizophrenia, and bipolar disorder. The disorders on this list were chosen in part to be representative of a presumed range of referral rates based on a previous study²⁶ in which panic disorder (6.6%) and depression (11%) had considerably lower referral rates than schizophrenia (75.4%). Bipolar disorder was added to this list to provide another common mental illness seen by family medicine physicians. We chose to ask about a variety of mental illnesses to provide a clearer picture of referral habits; our assumption was that referral rates for illnesses commonly seen by primary care providers (such as depression or anxiety) would be different than those for illnesses uncommonly seen or severe disorders (such as schizophrenia). By breaking the referral rate question down by mental illness, we hoped to avoid the problem of participants assuming we are asking about one type of mental illness or the other; for example, some participants may assume we are referring to more commonly seen mental illness while others may assume we mean severe mental illness.

Question 7 asked about recent CME in a psychiatric or psychological topic. Respondents were able to choose between 0, <10, 11-20, 20-40, or >40 hours in the last 3 years. These numbers were chosen after discussing the issue with several family medicine physicians to discern reasonable ranges.

The final question on the survey contained a vignette about an individual with schizophrenia and 5 questions about the respondents' opinions regarding the patient. The vignette and questions were from the Attitudes to Mental Illness Questionnaire (AMIQ) developed by Luty et al³⁶, a validated scale that has been used in other healthcare populations, including those working in mental health settings^{19, 31}. The vignette, which was adapted by Luty from a previous stigma scale³⁸, was revised somewhat to remove references to a law in the UK, where the scale was developed. ("He has been detained under the Mental Health Act 1983 in the past" was changed to "He has been placed on involuntary psychiatric hold in the past"). Previous studies^{19, 31, 37} have modified the scale more drastically to accommodate for the aims of their studies. The schizophrenia vignette was chosen as it had the most negative mean score (indicating high stigma rates) in Luty's study aside from vignettes describing criminal acts, and because it was validated against the schizophrenia vignette of another questionnaire (Corrigan's Attribution Questionnaire). A previous study³¹ also performed research using only the schizophrenia vignette. On the AMIQ, more positive scores indicate lower stigma levels while negative AMIQ scores indicate higher stigma.

Our survey was anonymously administered through SurveyMonkey, which allowed us to save survey data without saving the respondents' IP addresses. Recipient data was stored on SurveyMonkey's servers utilizing SSL encryption. Survey respondents did not receive material compensation of any kind for completing the survey.

Human Subjects Review

IRB approval was obtained from the University of Arizona.

Figure 1: Sample Survey

1. The setting in which your practice is located is: Urban/ Suburban / Rural
2. Is your practice located in an underserved area? Yes / No
3. Number of years you have been practicing family medicine (not including residency): 1-5 / 6-10 / 10-20 / Over 20
4. Approximate percentage of your practice that involves mental illness: 0-25% / 26 – 50% / 51-75% / 75 - 100%
5. Please rate your comfort level with treating mental illness in general.

1 (not at all comfortable) 2 3 4 5 (totally comfortable)
6. Please indicate when you would refer the following patients to specialized psychiatric care, assuming referral would be possible:
 - a. Depression without suicidal ideation: Immediately / after attempting treatment with 1-2 medications / after attempting treatment with 3+ medications
 - b. Anxiety/panic disorder: Immediately / after attempting treatment with 1-2 medications /after attempting treatment with 3+ medications
 - c. Bipolar disorder: Immediately / after attempting treatment with 1-2 medications /after attempting treatment with 3+ medications
 - d. Schizophrenia: Immediately / after attempting treatment with 1-2 medications/after attempting treatment with 3+ medications
7. Please indicate the amount of CME related to psychosocial or psychiatric issues you have completed in the last 3 years: 0 hours / 10 or less hours / 11-20 hours / 20-40 hours / 40+ hours
8. Please read the following statement:

Joe has schizophrenia. He needs an injection of medication every 2 weeks. He was detained in the hospital for several weeks 2 years ago because he was hearing voices from the devil and thought that he had the power to cause earthquakes. He has been placed on involuntary psychiatric hold in the past.

Please select the answer which best reflects your views:

- a. This would damage Joe’s career. Strongly agree / Agree / neutral / Disagree / Strongly Disagree / Don’t know

- b. I would be comfortable if Joe was my colleague at work. Strongly agree / Agree / neutral / Disagree / Strongly Disagree / Don't know
- c. I would be comfortable about inviting Joe to a dinner party. Strongly agree / Agree / neutral / Disagree / Strongly Disagree / Don't know
- d. How likely do you think it would be for Joe's wife to leave him? Very likely / Quite likely / Neutral / Unlikely / Very unlikely / Don't know
- e. How likely do you think it would be for Joe to get in trouble with the law? Very likely / Quite likely / Neutral / Unlikely / Very unlikely / Don't know

Aims

Data analysis was aimed at investigating three primary aims:

1. **Comparing AMIQ (stigma) ratings and referral rates:** We expected to find that physicians with low or more negative AMIQ scores (high stigma) would be more likely to refer patients quickly to specialized psychiatric care. More positive AMIQ scores indicate lower stigma levels while negative AMIQ scores indicate higher stigma. This would suggest that physicians with stigmatized views towards mentally ill patients are less comfortable or willing to treat this subset of patients than those with less stigmatized views.

AMIQ scores/stigma rating (a continuous variable from -10 to +10) and referral rates (an ordinal variable with three possibilities: immediately, after 1-2, or after 3 medications), were analyzed using ANOVAs. Analyses were run for each of the four conditions (depression without suicidal ideation, anxiety, bipolar disorder, and schizophrenia).

2. **Comparing AMIQ (stigma) ratings and self-stated comfort levels:** We expected to find that physicians with more negative or lower AMIQ scores (high stigma) would have lower levels of comfort with treating mental illness. This would suggest that stigma itself may cause discomfort as opposed to, for example, lack of training in treatment protocols. AMIQ ratings and self-stated comfort levels (a Likert scale from 1-5) were analyzed via ANOVA.
3. **Comparing AMIQ (stigma) ratings and amount of recent CME:** We expected to find that physicians with more negative or lower AMIQ scores (high stigma) would have taken less recent CME related to psychiatric or psychological training. This would suggest that a relationship exists between the two, either because stigmatized individuals are less interested in seeking training in mental illness, or because training programs tend to reduce stigma. AMIQ ratings and amount of recent CME (0 hours, 10 or less hours, 11-12 hours, 20-40 hours, or 40+ hours) were analyzed via ANOVA.

Results and Demographics

The survey was open for 2 months and received 143 responses, an approximately 10% response rate. As part of the consenting process, respondents agreed that they were a practicing family physician, excluding medical students and residents.

Of the respondents, 50.4% reported that their practiced was in an urban area, 29.3% reported a suburban practice, and 20.3% reported a rural practice. 52.6% of respondents reported that their practice was in an underserved area. The distribution of years in practice (not including residency) was as follows: 1-5 years (21.8%), 6-10 years (9.0%), 10-20 years (33.1%), and over 20 years (36.1%). Responses regarding percentage of practice involving mental illness were: 0-25% of practice (44.3%), 26-50% of practice (45.8%), 51-75% of practice (9.2%), and 75-100% of practice (.8%). (Table 1)

Table 1: Demographics

	Urban	Suburban	Rural	
Practice Setting	67	39	27	
	Yes	No		
Underserved	70	63		
	1-5 years	6-10 years	10-20 years	>20 years
Years in Practice	29	12	44	48
	0-25%	26-50%	51-75%	76-100%
% of Mental Illness in Practice	58	60	12	1

Aims

Total stigma scores (Table 2) were calculated as a sum of five individual stigma items, each worth -2 to +2. Total stigma scores ranged from -10 to +7, with a mean of -2.08. Of the stigma items, the most negatively scored item was “This will damage Joe’s career,” with a mean stigma score of -0.72. For the question of how likely Joe’s wife would be to leave him, mean score was -0.63. For the item asking how likely Joe would be to get in trouble with the law, mean score was -0.60. For the item addressing how comfortable respondents would be if Joe was their colleague at work, mean score was -0.24. For the item questioning how comfortable respondents would be inviting Joe to a dinner party, mean score was most positive at 0.11. Thus, for a vignette describing an individual with schizophrenia, respondents had the most stigmatized views regarding that patient experiencing career damage, followed by spouse leaving, trouble with the law, and comfort with that individual as a colleague at work. Respondents showed relatively low stigma values towards inviting that individual to a dinner party, however – AMIQ scores were actually somewhat positive.

1. Comparing AMIQ (stigma) ratings and referral rates:

Trends regarding referral rates to psychiatry were as expected. Options were coded as follows: Would refer patient immediately (1), would refer patient after attempting treatment with 1-2 medications (2), would refer patient after attempting treatment with 3+ medications (3). Thus, a higher number indicated slower referral to specialized psychiatric care.

Mean scores for depression and anxiety were 2.37 and 2.41, respectively. This was as expected as these are the two psychiatric conditions most commonly seen by primary care physicians. Also as expected, bipolar disorder and schizophrenia had mean scores indicating faster referral at 1.47 and 1.11, respectively.

A significant relationship was found between referral for anxiety and stigma ($p=.012$). No other significant relationships were found between referral rates and stigma ratings.

2. Comparing AMIQ (stigma) ratings and self-stated comfort levels

Mean self-stated comfort level with treating mental illness was 3.65 on a 5-point Likert scale with 1 being “not at all comfortable” and 5 being “totally comfortable.” No respondents reported being a 1 on the scale. 5.3% of respondents rated a 2, 32.8% responded a 3, 53.4% responded a 4, and 8.4% responded a 5. No significant relationship was found between AMIQ scores (stigma rating) and comfort level with mental illness.

3. Comparing AMIQ (stigma) ratings and amount of recent CME:

Respondents reported a distribution of recent psychiatric CME as follows: 0 hours (8.5%), 10 or less hours (47.3%), 11-20 hours (29.5%), 20-40 hours (11.6%), and 40+ hours (3.1%). A significant relationship was found between amount of recent psychiatric CME and AMIQ ratings ($p=.001$), indicating that lower levels of stigma were associated with higher levels of CME.

Table 2: Data for Aims

	1	2	3	4	5	Mean Score
Comfort Level with Mental Illness (Likert Scale)	0	7	43	70	11	3.65
	Immediately (Score: 1)	After 1-2 Medications (Score: 2)	After 3+ Medications (Score: 3)	Mean Score		
Refer Depression	11	59	59	2.37		
Refer Anxiety	7	62	59	2.41		
Refer Bipolar	75	44	8	1.47		
Refer Schizophrenia	116	10	2	1.11		
	0 hours	≤10 hours	11-20 hours	20-40 hours	>40 hours	
Recent Psychiatric CME	11	61	38	15	4	
	Damage Career	Comfort Work	Comfort Dinner	Wife Leave	Trouble Law	Overall Total Score
Mean Stigma Score on AMIQ	-0.72	-0.24	0.11	-0.63	-0.60	-2.08

Trends and other Analyses

General data trends were as expected for many variables. Nearly half of physicians reported that mental illness comprised 25-50% of their practice, a statistic that is echoed in the literature. Consistent with prior research, family physicians were more likely to treat (vs. immediately refer) depression and anxiety than bipolar or schizophrenia. Physicians working in underserved areas tended to be younger (see below) and with a higher self-reported comfort level with treating mental illness. Most (69%) of our respondents had been in practice over 10 years, and there was a general trend of increased stigma rating with more years in practice.

Aside from our specific aims, some additional analyses were run on the data (Table 3). Chi-squared tests were run to examine the relationship between years in practice and likelihood of practicing in an underserved area. A significant association was found between these two variables ($p=.000$). This may be due to the fact that many newly graduated family physicians practice in underserved areas to take advantage of loan repayment programs.

A chi-squared test was run to identify possible associations between percentage of practice involving mental illness and likelihood of practicing in an underserved area, but no significant relationship was found. Another chi-squared test was run to examine the relationship between percentage of practice involving mental illness and self-stated comfort level with mental illness; no significant relationship was found.

Finally, stepwise linear regressions were performed to determine if total stigma score could be predicted using years in practice, CME, comfort with mental illness, or referral rates for anxiety. The only significant predictor for stigma rating was CME ($p=.025$). Number of years in practice nearly achieved significance as a predictor for stigma ratings, but did not meet the $p<.05$ cutoff ($p=.059$).

Table 3: Additional Analyses

Years in Practice	1-5	6-10	10-20	>20	Total
Underserved	24	5	25	16	70
Not Underserved	5	7	19	32	63
% Mental Illness in Practice	0-25%	26-50%	51-75%	75-100%	Total
Underserved	58	60	12	1	68
Not Underserved	32	28	3	0	63
% Mental Illness in Practice	0-25%	26-50%	51-75%	75-100%	Total
Comfort Level: 1	0	0	0	0	0
Comfort Level: 2	5	2	0	0	7
Comfort Level: 3	22	18	3	0	43
Comfort Level: 4	28	34	7	1	70
Comfort Level: 5	3	6	2	0	11
Total	58	60	12	1	

Discussion

Aim 1

Many of this study's findings echoed prior research regarding the intersections of family medicine and psychiatry. Family medicine physicians were quicker to refer patients with bipolar disorder or schizophrenia to specialized psychiatric care than they were to refer those with anxiety or depression. This may indicate that family physicians are more comfortable with treating anxiety and depression, the most commonly seen psychiatric conditions in primary care. Additionally, stigma ratings on the AMIQ scale were significantly associated with referral of a patient with anxiety disorder to psychiatric care. This finding, along with the referral trends found in the study, highlights the importance of training family physicians in common conditions such as anxiety and depression. Patients with these common disorders will likely be treated primarily outside of psychiatric care systems and for the highest quality of care family physicians must be knowledgeable about these areas. If stigma is affecting physicians' referral rates to specialized care, this is clearly an area at which it may be beneficial to aim targeted interventions.

Aim 2

It is notable that physicians considered themselves to be fairly comfortable treating mental illness, and that stigma levels had no impact on self-stated comfort levels. The disconnect between significant findings in Aims 1 and 3 (stigma levels were related to both referral rates for patients with anxiety disorders and amount of recent CME) and practitioners' own perceptions of comfort level may emphasize an inherent lack of self-awareness regarding their own biases. This finding suggests that even those practitioners with highly stigmatized views consider themselves to be comfortable with mental illness. The significance of this fact is that rather than avoiding mentally ill patients, practitioners with highly stigmatized views are still comfortable seeing and treating patients presenting with mental illness. Impression management may play a role here; this is discussed below in the Study Limitations section.

Aim 3

A highly significant relationship was found between amount of recent psychiatric CME and stigma ratings on the AMIQ. This finding suggests that CME may be helpful in reducing stigmatized views towards mental illness. However, interpreting this relationship is somewhat difficult: does CME reduce stigma, or do individuals with more negative AMIQ scores seek out less psychosocial CME? It is noteworthy that past research showed that stigma-reduction programs/CME can reduce stigma³¹⁻³³. However, these programs were targeted stigma-reduction programs and not merely CME related to psychosocial topics. Thus, a question remains as to whether CME programs relating to psychosocial topics are effective as stigma reduction tools or whether physicians with low levels of stigma towards mental illness tend to seek out more CME in these topics. It seems plausible that education is effective as a stigma reducer, as this is a commonly held belief in multiple fields including mental health. However, the exact nature of this relationship needs to be examined further.

Other Findings

Nearly half of physicians reported that mental illness comprised 25-50% of their practice. This finding underscores the importance of educating family physicians in mental health topics. Notably, there was a significant trend indicating that newer physicians with less years in practice tended to work in underserved areas. This may reflect a growing interest in serving underserved areas, or may reflect physicians participating in loan repayment programs.

Another nonsignificant trend was identified between physicians practicing in underserved areas and higher self-stated comfort levels in treating mental illness, even though there was no relationship between comfort levels and percentage of practice comprised of patients with mental illness. This trend suggests that physicians practicing in underserved areas are more comfortable treating mental illness, and this is likely not accounted for by merely seeing a greater proportion of mentally ill patients. The fact that these rural/urban physicians tend to be newer and with less experience may also reflect a growing emphasis on mental health in the training of family medicine physicians. This possibility is further supported by the finding of a trend between increased stigma and greater number of years in practice.

Overall, the trends identified in our study suggest that younger physicians or those who have more recently completed their training are more likely to work in underserved areas, be comfortable with mental illness, and have lower stigma levels towards mental illness. These trends are promising with regards to the state of physician training about psychiatric issues relevant to primary care.

Study Limitations

Study Population

This study aimed to examine the beliefs and behaviors of family physicians in the state of Arizona. Whether or not this population of physicians differs in some way from those throughout the United States is beyond the scope of our study. However, the method of distribution of the survey (via monthly email newsletter sent to members of the Arizona Academy of Family Physicians) raises a few concerns regarding the study population. The goal of our study was to achieve a response rate of 150, or 10% of the 1500 members of the AzAFP; 143 responses were obtained. Respondents were asked as part of the consenting process to confirm that they are a practicing family medicine physician, and a demographic question during the survey asked how many post-residency years the respondent had been practicing medicine. Regardless, it is possible that other non-physician members of the AzAFP (for example, residents and medical students) completed the survey. The impact of these non-physician respondents is twofold. First, they make the effective number of AzAFP members lower since they make up a fraction of the 1500 total members. Since the consenting process should have filtered out some of these individuals, our 143 responses should have actually been a greater than 10% response rate of the *eligible* population – attending physicians in the AzAFP. Secondly, these possible respondents answering randomly (as they do not have the knowledge to answer the survey's questions) have the potential to alter the study's findings. However, given the consenting process and questions in the survey we believe that the impact of such individuals is negligible.

AMIQ Instrument

The AMIQ scale which was used unchanged in this study for validity purposes included both a "neutral" and a "don't know" option, scored as 0. Many respondents chose these: on each question, 17-33% chose "neutral" and 3-6% chose "don't know." Ideally, the instrument would have included only one of these as their meanings are essentially the same (for example, a simple 1-5 Likert scale).

Study Design

As in any study, the threat of impression management in self-reporting remains. All individuals are good at impression management in self-report instruments, and in particular physicians may be keenly aware of what an instrument is measuring. This would result in the appearance of low stigma ratings when individuals truly hold higher stigma levels. It may also account for the high self-stated comfort levels found while investigating Aim 2.

Respondents were asked to indicate “the amount of CME related to psychosocial or psychiatric issues” they had completed in the last 3 years. In recent years, there has been a trend towards presenting issues from a biopsychosocial perspective making it plausible that nearly any CME could be considered biopsychosocial. As a result, average numbers of psychiatric CME may have been inflated making it more difficult to draw meaningful conclusions from the association between CME and stigma. A better approach would have been to give examples of psychiatric CME, listing topics such as depression, anxiety, or schizophrenia as topics counting towards this element of the survey. However, only 15% of respondents reported 20+ hours of psychiatry-related CME in the last 3 years, and 48% reported 10 or less hours. This suggests that respondents were not viewing any CME presented from a biopsychosocial perspective as psychiatry-related.

This study did not consider family physicians working in urgent care settings. In these settings, patients would not be managed by the family physician and rather would be referred to psychiatric care. However, it is possible that urgent care family physicians would refer patients with chronic mental health problems to another family physician rather than to a specialist. The survey does ask specifically when the respondent would refer patients to specialized psychiatric care.

Future Directions

The present study is, to our knowledge, the first to examine stigmatized views towards mental illness among family physicians and how these levels relate to referral rates, comfort levels, and recent relevant CME. Previous studies have identified that physicians hold stigmatized views and that physicians who are less comfortable treating mental illness tend to refer more, however more precise relationships between these factors had not been examined. In addition, previous research has identified that general physicians may be unlikely to seek CME in mental health topics, but has not examined whether it is related to levels of stigma toward mental illness. Finally, the majority of research regarding physician stigma toward mental illness has taken place outside of the United States (UK, Canada, Australia, Pakistan, Netherlands, and Spain). This study was conducted on a sample of family medicine physicians in Arizona, and attempted to examine these relationships and draw conclusions about whether future interventions in family medicine training should target stigma reduction.

Future studies aiming to build upon the findings of the present study should further examine the relationships between CME and stigma as this was a significant finding of our study and a finding with the possibility to encourage potentially helpful interventions. Since our study identified a significant relationship between CME and stigma but could not determine the directionality, future studies should attempt to elucidate this relationship. In addition, such studies could examine whether targeted stigma reduction programs are more effective than any CME related to psychiatric topics, investigating whether knowledge is a form of stigma reduction in its own right. Such studies could also attempt to ascertain whether individuals with low stigma levels are more likely to specifically seek out CME about psychiatric topics.

This study highlights the need for standardized instruments for measuring stigma, particularly in healthcare populations. The AMIQ has many strengths but is also plagued by problems, including its inclusion of both a “Don’t Know” and a “Neutral” option, giving respondents two “outs” from committing to an answer. This is a significant problem on a self-assessment instrument meant to measure stigma, an undesirable quality, in a population with presumably high levels of insight into what the instrument is assessing. Validation of an

instrument with less neutral options would be beneficial in reducing the impact of impression management on further studies.

Conclusions

In the current state of healthcare in the United States, family medicine physicians provide a large percentage of mental health services. Because it is known that physicians, including family medicine physicians and psychiatrists, often hold stigmatized views towards mental illness, it is important to determine whether stigma has an impact on the psychiatric care provided by family medicine physicians. This study found that while stigma levels appeared to be associated with referral rates to psychiatry for a patient with anxiety, there was no relationship between stigma levels and referral for depression, bipolar disorder, or schizophrenia. In addition, stigma levels were significantly negatively associated with recent psychiatric CME. However, stigma levels were unrelated to self-stated comfort levels with treating mental illness.

Thus our study opens the door for further examination into the efficacy and/or need for targeted stigma-reduction CME. Perhaps though stigma exists amongst physicians, its impact on referral rates for 3 of the 4 disorders measured in this study is largely negligible. However, a significant relationship did exist for one of the psychiatric conditions most commonly treated in primary care, suggesting that for some disorders physician stigma may in fact impact care. The highly significant relationship between CME and stigma levels is a hopeful indicator that targeted stigma-reduction programs may be helpful. Together, these two findings are encouraging that stigma-reduction CME could improve patient care. Hopefully, future studies will further investigate these issues, perhaps with regard for the limitations of the current study.

Ultimately, of course, the quality of psychiatric treatment in primary care settings will come down to an individual physician and his or her particular skillset. If targeted interventions in the form of stigma-reduction CME can improve care for patients with mental illness, many patients would benefit. The impact of stigma toward mental illness both in the field of healthcare and outside of it, as well as the interaction between the realms of psychiatry and family medicine, remain important areas of research in today's healthcare climate.

References

1. Kessler RC, Wang PS. The descriptive epidemiology of commonly occurring mental disorders in the United States. *Annu Rev Public Health*. 2008;29:115-129.
2. Leigh H, Stewart D, Mallios R. Mental health and psychiatry training in primary care residency programs Part II. What skills and diagnoses are taught, how adequate, and what affects training directors' satisfaction? *Gen Hosp Psychiatry*. 2006;28(3):195-204.
3. U.S. Department of Health and Human Services. Shortage designation: Health professional shortage areas & medically underserved Areas/Populations. <http://bhpr.hrsa.gov/shortage/>. Published Dec 27 2012. Updated 2012. Accessed Dec 29, 2012.
4. Wang PS, Berglund P, Olfson M, Pincus HA, Wells KB, Kessler RC. Failure and delay in initial treatment contact after first onset of mental disorders in the national comorbidity survey replication. *Arch Gen Psychiatry*. 2005;62(6):603-613.
5. Searight R. Realistic approaches to counseling in the office setting. *Am Fam Physician*. 2009;79(4):277-284.
6. Himelhoch S, Ehrenreich M. Psychotherapy by primary-care providers: Results of a national sample. *Psychosomatics*. 2007;48(4):325-330.
7. Abed Faghri NM, Boisvert CM, Faghri S. Understanding the expanding role of primary care physicians (PCPs) to primary psychiatric care physicians (PPCPs): Enhancing the assessment and treatment of psychiatric conditions. *Ment Health Fam Med*. 2010;7(1):17-25.
8. Trude S, Stoddard JJ. Referral gridlock: Primary care physicians and mental health services. *J Gen Intern Med*. 2003;18(6):442-449.
9. World Health Organization. Disease control priorities related to mental, neurological, developmental, and substance abuse disorders. http://whqlibdoc.who.int/publications/2006/924156332x_eng.pdf. Updated 2006. Accessed Dec 29, 2012.
10. Wang PS, Lane M, Olfson M, Pincus HA, Wells KB, Kessler RC. Twelve-month use of mental health services in the United States: Results from the National Comorbidity Survey replication. *Arch Gen Psychiatry*. 2005;62(6):629-640.

11. Thornicroft G, Rose D, Kassam A. Discrimination in health care against people with mental illness. *Int Rev Psychiatry*. 2007;19(2):113-122.
12. van Nieuwenhuizen A, Henderson C, Kassam A, et al. Emergency department staff views and experiences on diagnostic overshadowing related to people with mental illness. *Epidemiol Psychiatr Sci*. 2012:1-8.
13. Brown L, Macintyre K, Trujillo L. Interventions to reduce HIV/AIDS stigma: What have we learned? *AIDS Educ Prev*. 2003;15(1):49-69.
14. Thornicroft G, Rose D, Kassam A, Sartorius N. Stigma: Ignorance, prejudice or discrimination? *The British Journal of Psychiatry*. 2007;190(3):192-193.
15. Corrigan P. How stigma interferes with mental health care. *Am Psychol*. 2004;59(7):614-625.
16. Sartorius N. Stigma and mental health. *Lancet*. 2007;370(9590):810-811.
17. Hugo M. Mental health professionals' attitudes towards people who have experienced a mental health disorder. *J Psychiatr Ment Health Nurs*. 2001;8(5):419-425.
18. Nordt C, Rossler W, Lauber C. Attitudes of mental health professionals toward people with schizophrenia and major depression. *Schizophr Bull*. 2006;32(4):709-714.
19. Rao H, Mahadevappa H, Pillay P, Sessay M, Abraham A, Luty J. A study of stigmatized attitudes towards people with mental health problems among health professionals. *J Psychiatr Ment Health Nurs*. 2009;16(3):279-284.
20. Shao WA, Williams JW, Jr, Lee S, Badgett RG, Aaronson B, Cornell JE. Knowledge and attitudes about depression among non-generalists and generalists. *J Fam Pract*. 1997;44(2):161-168.
21. Naqvi HA, Sabzwari S, Hussain S, Islam M, Zaman M. General practitioners' awareness and management of common psychiatric disorders: A community-based survey from karachi, pakistan. *East Mediterr Health J*. 2012;18(5):446-453.
22. Rushton J, Bruckman D, Kelleher K. Primary care referral of children with psychosocial problems. *Arch Pediatr Adolesc Med*. 2002;156(6):592-598.
23. Forrest CB, Nutting PA, Starfield B, von Schrader S. Family physicians' referral decisions: Results from the ASPN referral study. *J Fam Pract*. 2002;51(3):215-222.

24. Verhaak PF. Analysis of referrals of mental health problems by general practitioners. *Br J Gen Pract.* 1993;43(370):203-208.
25. Steele M, Zayed R, Davidson B, et al. Referral patterns and training needs in psychiatry among primary care physicians in canadian Rural/Remote areas. *J Can Acad Child Adolesc Psychiatry.* 2012;21(2):111-123.
26. Bethune C, Worrall G, Freake D, Church E. No psychiatry? assessment of family medicine residents' training in mental health issues. *Can Fam Physician.* 1999;45:2636-2641.
27. Woltmann E, Grogan-Kaylor A, Perron B, Georges H, Kilbourne AM, Bauer MS. Comparative effectiveness of collaborative chronic care models for mental health conditions across primary, specialty, and behavioral health care settings: Systematic review and meta-analysis. *Am J Psychiatry.* 2012;169(8):790-804.
28. Felker BL, Barnes RF, Greenberg DM, et al. Preliminary outcomes from an integrated mental health primary care team. *Psychiatr Serv.* 2004;55(4):442-444.
29. Brody DS, Khaliq AA, Thompson TL, 2nd. Patients' perspectives on the management of emotional distress in primary care settings. *J Gen Intern Med.* 1997;12(7):403-406.
30. Triana AC, Olson MM, Trevino DB. A new paradigm for teaching behavior change: Implications for residency training in family medicine and psychiatry. *BMC Med Educ.* 2012;12:64-6920-12-64.
31. Galletly C, Burton C. Improving medical student attitudes towards people with schizophrenia. *Aust N Z J Psychiatry.* 2011;45(6):473-476.
32. Schmetzer AD, Lafuze JE, Jack ME. Overcoming stigma: Involving families in medical student and psychiatric residency education. *Acad Psychiatry.* 2008;32(2):127-131.
33. Mino Y, Yasuda N, Tsuda T, Shimodera S. Effects of a one-hour educational program on medical students' attitudes to mental illness. *Psychiatry*
34. Chambers SK, Dunn J, Occhipinti S, et al. A systematic review of the impact of stigma and nihilism on lung cancer outcomes. *BMC Cancer.* 2012;12:184-2407-12-184.
35. Wassenaar TR, Eickhoff JC, Jarzemsky DR, Smith SS, Larson ML, Schiller JH. Differences in primary care clinicians' approach to non-small cell lung cancer patients compared with breast cancer. *J Thorac Oncol.* 2007;2(8):722-728

36. Luty J, Fekadu D, Umoh O, Gallagher J. Validation of a short instrument to measure stigmatised attitudes towards mental illness. *Psychiatric Bulletin*. 2006;30(7):257-260.
37. van dH, Wright P, Van TV, Doan VDK, Broerse JEW. Perceptions of mental health and help-seeking behavior in an urban community in Vietnam: An explorative study. *Community Ment Health J*. 2011;47(5):574-582.
38. Corrigan P, Markowitz FE, Watson A, Rowan D, Kubiak MA. An attribution model of public discrimination towards persons with mental illness. *J Health Soc Behav*. 2003;44(2):162-179.