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Medical Students' Recognition of Patients' Behavioral Health Needs

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Philadelphia College of Osteopathic Medicine

Department of Psychology

Medical Students' Recognition of Patients' Behavioral Health Needs

By Jason J. Jaegly

Submitted in Partial Fulfillment of the Requirements for the Degree of

Doctor of Psychology

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**PHILADELPHIA COLLEGE OF OSTEOPATHIC MEDICINE
DEPARTMENT OF PSYCHOLOGY**

Dissertation Approval

This is to certify that the thesis presented to us by Jason Jaegly
on the 4th day of May, 2016, in partial fulfillment of the requirements for the degree of
Doctor of Psychology, has been examined and is acceptable in both scholarship and
literary quality.

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knowing and understanding that I had to temporarily sacrifice our connectedness to achieve my dreams.

Abstract

This dissertation study is designed to add to the knowledge base about physician training in the integrated primary care environment by examining if relationships exist between students' years of training in an osteopathic medical school, empathy in patient-care situations, stigma toward people with mental illness, and attitudes toward collaborative care for behavioral health. In addition, the relationships between medical students' attitudes toward collaborative care for behavioral health, factors that influence their referral decision making, recognition of a hypothetical patient in need of a potential behavioral health referral, current year in medical training, and demographic characteristics were explored.

This is important because the current direction of primary care and behavioral health is headed toward full integration. This direction of health care is unsurprising when considering that 50-70% of patients seen in primary care are estimated to present with psychological symptoms (Belar, 2008; Gatchel & Oordt, 2003). Developing empathy in medical students has been recognized both as an essential element of medical education and as essential to clinical competency (Gleichgerrcht & Decety, 2013; Halpern, 2003). However, patients with behavioral health needs around the world continue to suffer from stigmatization and limited care, even by health care providers (Culter et al., 2009).

A cross-sectional study was conducted, using a case vignette and an online survey to investigate if there is a relationship between D.O. students' year in medical training, empathy in patient-care situations, stigma of mental illness, and attitudes toward collaborative care for behavioral health. In addition, this study examined if there is a

relationship between D.O. students' attitudes toward collaborative care for behavioral health, factors that influence their referral decision making, recognition of a hypothetical patient's need for a potential behavioral health referral, year in medical training, and demographic characteristics. To determine if medical students' empathy, stigma, and year of medical training are predictive of their attitudes toward collaborative care for behavioral health, a multiple regression analysis was conducted, using SPSS.

The implications of the results of this study include the potential to enhance the ongoing integration of behavioral health and primary care by adding to the knowledge base for improving medical education to better prepare aspiring physicians for assessing behavioral health concerns and working in integrated healthcare settings. This can lead to reducing the overutilization and costs of healthcare, decreasing the burden that patients with behavioral health needs have on physicians and primary care settings, improving the care and treatment outcomes of behavioral health issues and comorbid illnesses, and increasing both patient and physician satisfaction.

Table of Contents

Acknowledgements	iii
Abstract	v
Table of Contents	vii
List of Tables	ix
Chapter 1	1
Statement of the Problem	1
Purpose of the Study	4
Literature Review	6
Behavioral Health	6
Problems in Non-Integrated Care	9
Integrated Behavioral Health Care	13
Medical Education	16
Empathy	18
Stigma	21
Referral Decisions	25
Conclusion	27
Chapter 2	29
Hypotheses	29
Hypothesis One	29
Hypothesis Two	29
Chapter 3	30
Methods	30

Overview and Design Justification	30
Participants	30
Inclusion and Exclusion Criteria	31
Vignette Development	31
Questionnaires	32
Measures	33
Procedure	36
Chapter 4	37
Results	37
Demographic Characteristics of Participants	37
Method of Analysis	39
Hypothesis One	40
Hypothesis Two	43
Chapter 5	48
Discussion	48
Hypothesis One	49
Hypothesis Two	50
Implications of the Findings	51
Limitations	54
Future Research	55
References	56

List of Tables

Table 1: Frequencies of Demographic Independent Variables	37
Table 2: Hypothesis One Means and Standard Deviations of Independent Variable . . .	40
Table 3: Hypothesis One Mean and Standard Deviation of Dependent Variable	41
Table 4: Hypothesis One Pearson Correlations	42
Table 5: Hypothesis One Model Summary	42
Table 6: Hypothesis One ANOVA	43
Table 7: Hypothesis One Standardized Coefficients	43
Table 8: Hypothesis Two Means and Standard Deviations of Variables	44
Table 9: Hypothesis Two Pearson Correlations	45

Chapter One

Statement of the Problem

The current direction of primary care and behavioral health is headed toward full integration. This direction of health care is unsurprising when considering that 50-70% of patients seen in primary care are estimated to present with psychological symptoms (Belar, 2008; Gatchel & Oordt, 2003). According to the American Academy of Family Physicians (AAFP), stress-related symptoms account for two-thirds of visits to family physicians; more than a third of Americans in a recent American Psychological Association (APA) poll reported that they have had an illness caused primarily by stress (APA, 2014). In addition, comorbid mental illnesses have been found to be common in patients with chronic medical conditions (Chapman, Perry, & Strine, 2005; Katon, 2003; Katon & Ciechanowski, 2002; Katon, Lin, & Kroenke, 2007; World Health Organization & World Organization of Family Doctors, 2008). For example, it has been reported that over 40% of patients with chronic illness often have comorbid depression (Goldman, McCulloch, & Cuffel, 2003; Yates et al., 2004). The historical data of behavioral health concerns in primary care have revealed that medical and mental health care have long been intertwined, although the utilization of evidence-based interventions to address patients' behavioral health needs in primary care has not (Behavioral Health Integration Task Force [Task Force], 2013).

The need for health care integration, in part, has arisen from the fact that primary care physicians have become the gateway both for medical and for mental health care (Beacham, Herbst, Streitwieser, Scheu, & Sieber, 2012; Kessler & Stafford, 2008; Regier et al., 1993). However, the current healthcare system is not equipped to care for patients'

behavioral health needs adequately, even though with healthcare reform, primary care medical practice can emerge as the best venue for improving patients' behavioral health and for controlling medical costs (American College of Physicians, 2006). As a result of poor behavioral health treatment outcomes in medical settings, rising health care costs, and the increasing need for behavioral health therapists in primary care, the integration of primary care and behavioral health has emerged as a priority both for medical and for mental health providers (Task Force, 2013). As outlined in their health-care reform guidelines, the American Psychological Association (APA, 2014) has encouraged and advocated for the integration of behavioral health in primary care. In addition, the U.S. federal government has recently made efforts to encourage and promote the integration of medical and behavioral health care; this has been demonstrated by the federal government passing healthcare reform legislation, such as the Affordable Care Act (ACA) (Barry & Huskamp, 2011).

The primary goal of integrated care is to bring together health care teams that can treat the "whole-person" (APA, 2014). The APA (2014) indicated that instead of working separately, physicians, psychologists, nurses, and other providers should collaborate and work to diagnose patients' problems, to plan and provide treatment, and to evaluate whether or not that treatment is effective. Evidence suggests that the integration of behavioral health with primary care and other health care services, such as physiotherapy, can enhance patients' access to services, improve the quality of their care, and lower overall healthcare costs (APA; National Council for Community Behavioral Healthcare, 2003). In addition, integrating psychologists into health care teams can

improve patients' health (Blumenthal, 2005; Jacobs, Pace-Schott, Stickgold, & Otto, 2004).

Although the push for behavioral health integration has helped it emerge as a future component of primary care, the Institute of Medicine's (IOM) disease-oriented educational system has not adequately provided training for non-psychiatrists in behavioral health problems (Chur-Hansen et al., 2008, IOM, 2004; 2005). Therefore, the IOM and others have urged medical schools to expand their behavioral health care training in all four years of medical education (Chur-Hansen et al., 2008; IOM, 2004, 2005). But little has changed since the first IOM quality chasm report in 2001; medical students typically receive 6-8 weeks of interviewing training in the first year and 4-8 weeks on psychiatry in the third year (American Association of Medical Colleges, 2012), the latter often on inpatient units with patients very much unlike those they will see in practice (Smith, 2011).

It is imperative for medical education to expand in order to prepare medical students adequately to work in an integrated healthcare system, and more specifically, to recognize, treat or refer patients with potential behavioral health needs. Therefore, implementing changes in current medical education curricula to fit the bill for integrated health care requires identification of the factors associated with positive and with negative treatment outcomes (Interprofessional Education Collaborative Expert Panel, 2011). This brings into question the attitudes of medical students toward patients with behavioral health concerns, and how these attitudes relate to their ability to recognize a patient in need, potentially, of a behavioral health referral.

Developing empathy in medical students has been recognized as both an essential element of medical education and of clinical competency (Gleichgerricht & Decety, 2013; Halpern, 2003). In addition, Hojat et al. (2011) found that patients experienced improved health outcomes when they had been treated by physicians who demonstrated genuine empathy. However, patients around the world with behavioral health needs continue to suffer from stigmatization and limited care, even by health care providers (Culter et al., 2009).

Previous studies utilizing self-report questionnaires indicated that many medical students regard clinical work with psychiatric patients as unappealing (Culter et al., 2009). Although the stigmatization of psychiatric patients is present both in the general population and among healthcare professionals (Totic et al., 2011), medical education can be improved not only to help reduce medical students' stigmatizing patients with behavioral health needs (Papish et al., 2013) but also increase their empathy for patients. Therefore, students' empathy, perception of stigma, and year in medical training might be predictive of their attitudes toward collaborative care for behavioral health referrals, as well as their ability to recognize patients with potential behavioral health needs. However, researchers have not explored, or established a relationship between medical students' year in medical training, empathy ratings, and perceived stigma of behavioral health needs with regard to their attitudes toward collaborative care and their ability to recognize patients potentially in need of a behavioral health referral.

Purpose of the Study

The present study examined if there is a relationship between graduate students' year in medical training in an osteopathic school, empathy in patient-care situations,

perceived stigma of mental illness, and attitudes toward collaborative care for behavioral health. In addition, this study examined if medical students' recognition of a hypothetical patient potentially in need of a behavioral health referral is related to their attitudes toward collaborative care for behavioral health, factors that influence their referral decision making, year in medical training and other demographic characteristics.

Literature Review

Behavioral Health

The concepts both of mental health and of behavioral health are very similar, although by definition, behavioral health is more expansive than mental health because it takes into account individuals' mental and physical wellness with regard to their behaviors and decision-making (Shea & Shern, 2011). Furthermore, behavioral health includes consideration for patients' thoughts, feelings, and behaviors when they are confronted with a challenging health event or condition, as well as how they view themselves, others, and their future (World Health Organization, 2004). The Substance Abuse Mental Health Services Administration (SAMHSA, 2011) defined behavioral health as a state of mental and emotional well-being and/or choices and actions that affect wellness. However, the Behavioral Health Integration Task Force (2013) described behavioral health as an umbrella term that refers to mental health and substance use disorders and their treatment and prevention, and behavioral interventions in physical disease management, health promotion and/or the system of care. Among the United States population, behavioral health problems are very common (Kessler, Chiu, Demler, & Walters, 2005). Between 2001 and 2003, 26% of U.S. adults were affected by behavioral health conditions, including mental health and substance use conditions (Kessler et al., 2005).

Behavioral health findings in primary care. Numerous studies have revealed that many primary care patients present with behavioral health concerns (Kessler & Stafford, 2008). Among the most common reasons for primary care visits are behavioral issues and/or behavioral health conditions that are affecting some aspect of patient health

(Cowley et al., 2003; Kroenke & Mangelsdorff, 1989; Simon, Von Korff, & Barlow, 1995). However, Kroenke and Mangelsdorff (1989) found that the vast majority of primary care complaints were related in some way to behavioral factors but were not necessarily diagnosed as mental disorders. For example, the ten most common complaints adults made in primary care were chest pain, fatigue, dizziness, headache, swelling, back pain, shortness of breath, insomnia, abdominal pain, and numbness, with only 15% of these complaints having been linked with organic pathology (Kroenke & Mangelsdorff, 1989). Also, the APA (2014) found that one-third of Americans reported having an illness caused primarily by stress, and the AAFP reported that two-thirds of patients were seen by family physicians because of stress-related symptoms. In addition, patients reported behavioral health problems that are associated with unhealthy behaviors, including smoking, obesity, sedentary lifestyle, and non-adherence (WHO, 2002; Yach, Hawkes, Gould, & Hofman, 2004).

Although patients' behavioral health needs are not always associated with mental health diagnoses, research has substantiated the fact that psychiatric conditions are common in patients seen in primary care practices (Cwikel, Zilber, Feinson, & Lerner, 2008), and many patients seek treatment for these concerns through their primary care providers (Goldman, Rye, & Sirovatka, 2000; Petterson et al., 2008; Wang et al., 2006). According to the National Mental Health Association (2000), 32% of healthy adults reported they would initially utilize their primary care physicians for mental health concerns, and only 4% indicated they would contact a psychologist. By some estimates, 50-70% of patients in primary care present with psychological symptoms (Belar, 2008; Gatchel & Oordt, 2003). Yet, as part of their presenting problems, 25-30% of patients

who visited primary care physicians were found to suffer from depression, anxiety, alcohol abuse, and somatoform disorders (Anseau, Dierick, & Buntink, 2004; Kahn, Halbreich, & Bloom, 2004; Ormel et al., 1994).

Many patients with chronic illnesses have comorbid mental health problems (Chapman, Perry, & Strine, 2005; Katon & Ciechanowski, 2002; Katon, Lin, & Kroenke, 2007; World Health Organization & World Organization of Family Doctors, 2008). Goldman, McCulloch, and Cuffel (2003) and Yates et al. (2004) found that more than 40% of patients with chronic illness often report experiencing comorbid depression. Moreover, Blount & Olmedo (2011) reported that certain chronic conditions including asthma, diabetes, cardiovascular disease, and irritable bowel syndrome, require a behavioral health component in their management and treatment because patients with these conditions are more likely to report mental health problems, such as depression. Additionally, patients who are disabled by hypertension, asthma, arthritis, or ulcers were found, commonly, to experience depression (Katon & Wayne, 2007).

Behavioral health problems affect patients of all ages, and the first signs of mental illness often present during childhood (Task Force, 2013). Half of all lifetime mental illnesses begin by age 14 and three-quarters begin by the time an individual is 24 (National Institute of Mental Health [NIMH], 2005). In their study using direct observation, Cooper, Valleley, Polaha, Begeny, and Evans (2006) found that nearly one-fourth of patients from birth to age 19, seen in rural pediatric primary care settings were found to present with behavioral health issues. Additionally, 12-27% of children and adolescents who visited primary care physicians were reported to have behavioral health

problems, including both behavioral and emotional concerns (Cassidy & Jellinek, 1998; Simonian, 2006; Williams, Klinepeter, Palmes, Pulley, & Foy, 2004).

Problems in Non-Integrated Care

In the current health care system, behavioral health generally operates independently from medical care. As a result, there is often a separation between patients' medical care and the management and treatment of their behavioral health needs (Kessler, Stafford, & Messier, 2009). This separation has largely contributed to limited, expensive, self-reinforcing outcomes, including the limited effectiveness of the current healthcare system (Kessler et al., 2009). Patients with behavioral health problems are among the largest patient groups; they contribute significantly to the global burden of disease (World Health Organization, 2008).

The burden of behavioral health conditions is enormous in terms of premature deaths, disability, lost productivity, and substantial increase in total health care costs (Unutzer et al., 1997). For example, in the U.S., it is estimated that each year approximately \$510.8 billion is spent on treatment for individuals who abuse substances and/or have other behavioral health problems related to addiction (Miller & Hendrie, 2008). In addition, Kessler, Stafford, and Messier (2009) found that mental health comorbidities substantially increase adverse health outcomes and costs for individuals and for the broader population.

Patients' concerns. Patients with behavioral health concerns are often faced with many challenges and may choose not to seek treatment for reasons such as social stigma, financial limitations, and minimizing mental health concerns (Department of Health and Human Services [DHHS], 1999). Furthermore, patients may encounter problems with

receiving treatment from their physicians (Trude & Stoddard, 2003). Studies have reported that physicians both under-treat (Goldman, Nielson, & Champion, 1999; Hirschfeld et al., 1997; Solberg, Fischer, Korsen, Oxman, & Bartels, 1999; Wella et al., 1989) and over-treat (Zito et al., 2000) psychiatric disorders. For example, despite the documented behavioral health needs of children and adolescents, evidence suggests that most children and adolescents with behavioral health needs do not receive services (Kataoka, Zhang, & Wells, 2002). Moreover, evidence suggests that providers of pediatric services identified fewer than half of the behavioral health concerns present in the children they examined (Dulcan et al., 1990). Also, a bidirectional relationship between the effects of patients' depression/anxiety and medical illnesses (Chapman et al., 2005; Katon, 2003; Rudisch, & Nemeroff, 2003; Simon et al., 2007) can contribute to a cycle of medical and behavioral health concerns that negatively impact the course of illness (Levenson, 1992; Moussavi et al., 2007; Pies & Rodgers, 2005; Piette, Richardson, & Valenstein, 2004). In addition, patients with behavioral health problems may experience a decline in their quality of life and the activities of daily living, and this can be exacerbated by poor adherence to treatment recommendations (Osterberg & Blaschke, 2005). This often results in the increased utilization of medical services, more emergency room visits, and poorer long-term prognoses (Katon, 2003; Parker & Wright, 1995; Simon, Von Korff, & Barlow, 1995; Strine et al., 2004).

Physicians' concerns. Despite the frequent opportunities for physicians to address behavioral health needs effectively, often in primary care settings there are no strategies for effectively managing or recognizing patients with behavioral health problems, and therefore, patients' needs are frequently ignored (Kessler et al., 2009).

Many physicians have reported concerns including high caseloads, lack of time, and reimbursement challenges (Galuska et al., 2002). For example, one study found that the average amount of time that physicians spend with each patient is 10.3 min; the percentage of time addressing anticipatory guidance for potential health and developmental problems constitutes a range of 6.4 –13.9% of the visit (Reisinger & Bires, 1980). Although average primary care visits are scheduled in 15-minute intervals, a primary care provider with an average panel of 2,500 patients would spend 7.4 hours per day to deliver all recommended preventative care (Yarnall et al., 2003) and 10.6 hours per day to deliver all recommended chronic care services (Ostbye et al., 2005). Consequently, primary care can be stressful for providers; these reasons include the pace and patient caseload, the responsibility of making accurate diagnoses, and having to coordinate care in a non-integrated health care system.

Although there has long been awareness of patients' behavioral health needs in primary care, problems continue to exist with recognition, management, and treatment of behavioral health conditions (Frank & Glied, 2006). In addition to the added pressure that these stressors have on providers, primary care physicians often lack the necessary knowledge to treat their patients' behavioral health needs. Other barriers associated with non-integrated health care include differences in training, various methods for assessment and treatment, and limited exposure to behavioral health services (Pace, Chaney, Mullins, & Olson, 1995).

Future concerns. Considering SAMHSA's report that by the year 2020, behavioral health will overtake all physical diseases as a significant cause of disability worldwide, more patients are likely to present in primary care with behavioral health

concerns. Some studies have already found this to be true (WHO, 2004). In 2011, the Bureau of Primary Health Care (BPHC, 2012) found that mental health and substance abuse visits accounted for 7.1% of all health center visits. However, in 2012, the BPHC (2013) found that the number of patient visits were comparatively higher for mental health (21.4%) and substance abuse (15.5%). Of patients with a major diagnosis, nearly one-third are identified as having a behavioral health condition as a primary diagnosis; the percentage of patient visits for behavioral health reasons has increased from 7.1% to 42% (BPHC, 2011).

The Affordable Care Act will likely add at least 3.7 million individuals to the health insurance system with serious mental illness, and many more with less severe behavioral health needs (Garfield et al., 2011). As a result, primary care is likely to have an increased population of patients with behavioral health needs. In a recent study, Burke et al. (2013) examined federally qualified healthcare centers staffing data and behavioral health service patterns from the 2010 UDS and 2010 National Survey on Drug Use and Health, and reported that in order to meet the behavioral health needs of the 40 million patients projected by 2015, the number of mental health and substance abuse providers will have to increase by fourfold.

Because primary care settings are forced to cope with an increasing volume of patients, physicians and staff will experience even greater time constraints and pressure if behavioral health interventions are not improved. For many decades now, numerous plans have been suggested, and some tried, for approaching behavioral health as a practical and significant component of medical care (Kreitzer, Kligler, & Meeker, 2009). However, efforts have yet to be integrated into a larger system of healthcare policy and

payment; therefore, they have been largely unsuccessful (Kessler, Stafford, & Messier, 2009). Regardless, the calls for and benefits of integrating behavioral health and primary care are well-established and supported throughout the health care literature (Butler et al., 2008; Kessler & Stafford, 2008).

Integrated Behavioral Health Care

Calls for integration. Among other reasons, the negative outcomes that are associated with the current strategies for managing and treating patients' behavioral health needs have led health providers, patients, researchers, and lawmakers to advocate for health care reform strategies that aim to improve behavioral health outcomes in primary care. For example, the negative trajectory associated with untreated behavioral and developmental problems during childhood has prompted the American Academy of Pediatrics (1996) to recommend that pediatric providers devote more time to anticipatory guidance for behavioral health.

The growing demand for the integration of behavioral health in primary care settings is also supported by the APA's *Competencies for Psychology Practice in Primary Care* (APA, 2013a), and in the Association of Psychology Postdoctoral and Internship Centers (APPIC) website (APPIC, 2013). In 2013, APPIC explicitly outlined 128 internship programs and 69 postdoctoral training programs as offering opportunities for significant, supervised experiences in primary care (APA, 2013c, 2013d). In addition, the Health Resources and Services Administration (HRSA) as well as the SAMHSA, endorsed specific strategies for funding the integration of behavioral health in primary care; this was described as a major shift in their approach to health care (Kautz, Mauch, & Smith, 2008; Kessler, Stafford, & Messier, 2009).

Goal of integration. A primary goal for the integration of behavioral health and primary care is to bring together physicians, psychologists, nurses, and other health providers so that patients receive comprehensive healthcare (APA, 2014). The Agency for Healthcare Research and Quality (AHRQ) envisions behavioral health in primary care as the “treatment from a team of both primary care and behavioral health clinicians, who work with patients and their families, in a systematic and cost-effective way to provide patient-centered care. And this care may address mental health and substance abuse conditions, health behaviors (including their contribution to medical illnesses), life stressors and crises, stress-related physical symptoms, and ineffective patterns of health care utilization” (Butler, 2008, p. 2).

Benefits of integration. Because behavioral health and physical health are interrelated, provision of behavioral health services in primary care settings can reduce stigma and discrimination, be cost effective, and lead to improved patient outcomes (Behavioral Health Integration Task Force, 2013). As opposed to managing care across specialties, one study reported that patients’ access to behavioral health treatment increased by a minimum of 50% when offered in primary care (Bartels et al., 2004). For many patients, behavioral health care in medical settings is a better cultural fit, and studies have indicated that minorities more often turn to primary care for behavioral health needs than to any other health care setting (Blount & Olmedo, 2011). Accordingly, the SAMHSA reported that integrated healthcare can potentially benefit minorities and other populations by improving access to evidence-based behavioral health treatment in primary care (Blount & Olmedo). In addition, integrated care can provide patients with chronic illnesses better access to behavioral health services.

Integrated care is expected to alleviate the increased healthcare costs that are associated with chronically ill patients by better addressing their behavioral health needs (Task Force, 2013). Evidence supports this prediction. For example, SAMSHA reported that patients with only chronic illness have healthcare costs that are two to five times lower than those with comorbid depression (Blount & Olmedo). Given the demand for and benefits of behavioral health interventions in primary care (Belar, 2008; Blount, 2003; Kessler & Stafford, 2008; Levant, 2005), it is logical that acceptance and promotion of integrated care models are increasing (Frank, McDaniel, Bray, & Heldring, 2004; Keller et al., 2000; March et al., 2004).

Integrated care models. A growing research base on a variety of service delivery models has suggested that integrated behavioral health models of service delivery can be cost-effective, increase access to behavioral health services, improve patient and primary care provider satisfaction with care, and lead to better clinical outcomes than standard primary care services (Blount, 2003; Blount et al., 2007; Bryan, Morrow, & Appolonio, 2009; Chomienne et al., 2011; Goodie, Isler, Hunter, & Peterson, 2009; Runyan, Fonseca, & Hunter, 2003). For example, the integrated behavioral health care (IBHC) model of collaborative care capitalizes on innovations to reduce the disparities found in other collaborative care models, and further reduce barriers to service utilization by changing the manner in which care is delivered (Bridges et al., 2013). Similarly, the integrated primary care (IPC) model also offers collaborative care by using a multi-discipline approach to patient care within the primary care clinic (Gatchel & Oordt, 2003; Strosahl, 2005). Evidence suggests that IPC can reduce barriers to access behavioral health services and help to eliminate the progression to more severe mental disorders and

medical illnesses (Houck, Kilo, & Scott, 2003; Kessler & Stafford, 2008; Kodner & Spreeuwenberg, 2002; Levant, 2005). Also, IPC was found to be more efficient in achieving positive health outcomes by 200-300% (Houck et al., 2003; Noffsinger, Sawyer, & Scott, 2003; Scott, Gade, McKenzie, & Venohr, 1998).

Integrated models of behavioral health and primary care have demonstrated increased patient and physician satisfaction (Katon, 1995; Price, Beck, Nimmer, & Bensen, 2000), fewer appointment cancellations (Watkins, Pincus, & Tanielian, 2001), and improved adherence to medical recommendations (Haynes, McDonald, & Garg, 2002). Ideally, integrated behavioral health care models will provide a framework for the delivery of evidence-based behavioral health services in primary care (Funderburk, Dobmeyer, Hunter, Walsh, & Maisto, 2013). The need for primary care physicians to participate in education and training in mental health has been largely recognized, including by the Accreditation Council for Graduate Medical Education (ACGME) (Leigh, Stewart, & Mallios, 2006a); therefore, it is important to examine the quality and appropriateness of mental health training in medical education.

Medical Education

Problems in medical education. A review of medical education literature revealed that most medical students receive limited and insufficient behavioral health education and training (Chur-Hansen et al., 2008). In addition, current evidence suggests that medical education needs to be expanded to include more in-depth training aimed at enhancing medical students' knowledge and attitudes for better recognition and treatment of behavioral health concerns (IOM, 2004; 2005). For example, in internal medicine, the median number of hours per year devoted to psychosocial training is 17 (Chin,

Guillermo, Prakken, & Eisendrath, 2000), overlooking the need for increased training in substance abuse (O'Connor, Nyquist, & McLellan, 2011) and other behavioral health concerns. Furthermore, in residencies, 71%-92% of program directors in internal medicine, pediatrics, and obstetrics indicated that their psychosocial and behavioral health care training is minimal (Lehigh, Stewart, & Mallios, 2006a).

Although some areas of medicine appear to be failing to answer the call for integration, other areas, such as family medicine, have been more ambitious (Pettersen et al., 2008). For example, family medicine has recognized the increased need for behavioral health care training (Eiff et al., 2012), and therefore, has included behavioral health training in their *Preparing the Personal Physician for Practice* program (Green, Jones, Fetter, & Pugno, 2007; Scherger, 2007). In addition, Lehigh, Stewart, and Mallios (2006a) found that 41% of program directors in family medicine residencies reported psychosocial and behavioral health training to be significantly greater than that of program directors in other residencies of medicine. However, overall, behavioral health training has been found to be minimal and/or lacking in medical education.

Therefore, many medical students may lack the appropriate knowledge and attitudes needed for recognizing and treating or referring patients with behavioral health needs.

Improving medical education. To serve all of their future patients' needs, it is important for medical students to have the capacity to identify and treat or refer, as appropriate, individuals with behavioral health needs (Task Force, 2013). Therefore, determining medical students' knowledge and attitudes associated with collaborative care for behavioral health and recognition of patients' behavioral health needs is the first step

toward improving medical education and behavioral health interventions in primary care. Of the clinical skills identified as being most important for medical students to demonstrate, empathy emerged as a key element of clinical competence, physician-patient relationships, and successful treatment outcomes. Medical students' perceived stigma of patients with behavioral health needs and factors that influence their referral decision making were also found to be important constructs for examination.

Empathy. As early as the 1980s, the American Board of Internal Medicine (1983) recommended that empathy be enhanced during, and evaluated as a key outcome of, medical education. In addition, the Association of American Medical Colleges (2008) has advocated for the enrichment of empathic skills in medical education. The importance of empathy has been well-established in several areas of medicine and it is supported by a large and expanding body of research (Batt-Rawden et al., 2013).

Some health providers believe empathy is the most important component of patient care, and that successful treatment outcomes are the result of developing a strong and collaborative patient-physician relationship through the utilization of empathy (Martin, Williams, Haskard, & DiMatteo, 2005). Empathy has been used to determine medical students' clinical competence, and it was also found to be associated with improved treatment outcomes (Del Canale et al., 2012; Hojat, et al., 2002; Hojat et al., 2011). For example, it has been found that physician empathy can improve patient satisfaction, adherence to therapy, and lower malpractice liability (Di Blasi, Harkness, Ernst, Georgiue, & Kleijnen, 2001, Hojat et al., 2011; Kim, Kaplowitz, & Johnston, 2004; Rakel et al., 2011; Rakel et al., 2009; Vermeire, Hearnshaw, Van Royen, & Denekens, 2001; Zachariae, et al., 2003).

Defining empathy. A universally agreed upon definition of empathy has remained elusive in the literature of patient care (Hojat, Gonnella, Mangione, Nasea, & Magee, 2003; Tavakol, Dennick, & Tavakol, 2011). Although there is no consensus for any one definition of empathy, the developers of the widely used Jefferson Scale of Physician Empathy (JSE) define it primarily as a cognitive attribute that requires an understanding of patients' experiences, concerns, and perspectives, combined with a capacity to communicate this understanding (Batt-Rawden, Chislom, Anton, & Flickinger, 2013; Hojat, 2007). In the context of primary care, empathy is often viewed as being two-dimensional (Berg, Majdan, Berg, Veloski, & Hojat, 2011; Gladstein, 1983). The two dimensions identified are *affective*, which is described as the passive emotional response of one individual to the emotions of another (Hojat et al., 2002; Neumann et al., 2009), and *cognitive*, which has been described as an active skill that can be learned, enhanced, and used to better understand the experiences of another without raising a personal emotional response (Hojat et al., 2002).

Empathy findings. Understanding patients' experiences and communicating this understanding back to them is reported to be the best method for establishing and improving patient-physician relationships (Hegazi & Wilson, 2013). Empathy is a key element of the patient-physician relationship because of its importance in the context of patient care. An important component of empathic engagement is physicians' ability to communicate understanding to the patient (Berg et al., 2011). Additionally, to achieve optimal clinical outcomes, empathy is a necessary component of communication between patients and physicians (Berg et al., 2011).

For example, physicians' empathy was found to improve patients' empowerment and sense of being socially connected (Street, Makoul, Arora, & Epstein, 2009).

Research supports the notion that effective communication between a physician and patient can help to alleviate the patient's anxiety, enhance his or her coping skills, and improve therapeutic outcomes (Beck, Daughridge, & Sloane, 2002; Rietveld & Prins, 1998). In addition, patients have reported improvements in their quality of life, as well as social, physical, and psychological well-being as a result of physicians' empathy.

Conversely, physicians who lack empathy are at increased risk for patient dissatisfaction and claims of malpractice (Beckman & Frankel, 2003). In the majority of medical malpractice claims, poor communication is the most common reason. Empathy can mend damaged patient-physician relationships, and it can help physicians to avoid negative judgments (Beckman & Frankel, 2003).

Several characteristics of medical students seem to be associated with varying levels of empathy, including gender, ethnicity, and specialty choice. In addition, psychological factors, unsuitable settings for learning, cynicism, and the perceived need for detachment were found to reduce medical students' empathy for patients.

Measures of empathy. There are numerous methods for measuring empathy, including self-report questionnaires such as the Jefferson Scale of Physician Empathy (JSE), Questionnaire Measure of Emotional Empathy, Balanced Emotional Empathy Scales (BEES), Interpersonal Reactivity Index, and Empathy Construct Rating Scale (ECRS). In addition, there exist several observer measures of empathy, including the Consultation and Relation Empathy (CARE) measure and the Four Habits Coding Scheme.

Stigma. Similar to empathy, stigmatizing attitudes have been recognized as an area of concern in the health care literature (Dearing & Steadman, 2008). In regard to health care, the concept of stigma includes problems with knowledge, negative attitudes toward those with behavioral health issues, and discriminatory behavior against this group (Gabbidon et al., 2013; Thornicroft, Rose, Kassam, & Sartorius, 2007). Among the U.S. population, stigma against those with mental health problems is quite prevalent (Hinshaw, 2005; Pinto-Foltz & Logsdon, 2008) and has been described as a “primary barrier” to treatment and recovery (Abbey, Charbonneau, Tranulis, et al., 2011; U.S. Department of Health and Human Services, 1999).

Consequences of stigma. The U.S. Department of Health and Human Services (1999) reported the stigma of mental illness as an obstacle to personal development, to social interactions, and to adequate treatment for individuals with mental illness. Moreover, the stigma of mental health was found to interfere with individuals’ help-seeking behaviors and has even led some to discontinue treatment for health problems considered to be “treatable” (Link & Phelan, 2001; Weiss & Ramakrishna, 2001). In addition, Horsfall, Clearly and Hunt (2010) reported that stigma can negatively impact patients’ recovery, as well as their interactions with health professionals (Feret, Conway, & Austin, 2011).

Stigma of patients with severe mental illness can lead to consequences, including: 1) treatment refusal, 2) lower quality of life, 3) fewer housing and employment opportunities, 4) poorer health care, and 5) low self-esteem (Corrigan, 2004; Covarrubias & Han, 2011; Lawrie, 1999; Link, Phelan, Bresnahan, Stueve, & Pescosolido, 1999). Also, stigmatizing attitudes can serve as a barrier to forming patient-physician

relationships and to empowering patients (Covarrubias & Han 2011). In some studies, stigma of mental illness can be more challenging and damaging to patients' abilities than their mental disorders (Day, Edgren, & Eshlerman, 2007; Pescosolido & Martin, 2007; Sartorius, 2002; Weiss, Ramakrishna, & Somma, 2006). A study conducted in the U.K. (Chang et al., 2011) on early mortality found that individuals with mental illness lost between 8-17.5 years of life, and also had poorer access to life-saving interventions (Jones, Howard, Thornicroft, 2008).

Physicians' stigma. Evidence suggests that many health professionals tend to hold stigmatizing attitudes toward patients with mental illness, and that these attitudes may negatively impact both patients' care and physicians' health (Bjorkman, Angelman, & Jonsson, 2008; Chaplin, 2000; Horsfall et al., 2010; Hugo, 2001; Papish et al., 2013; Roa et al., 2009; Volmer, Maesalus, & Bell, 2008). Papish et al. (2013) conducted a randomized control trial to assess the impact of two different educational interventions on medical students' attitudes toward mental illness, using a one-time contact-based educational intervention and a 4-week mandatory psychiatry course at the University of Calgary, in Calgary, Canada. Participants were primarily female (59.5%), between the ages of 18-25 (63.9%), and of "white" ethnicity (69.9%). Their primary analysis examined the change between the first and second set of ratings to allow for a comparison of changes at a point in time, where one half of the sample had received the contact-based intervention (intervention group) and one had not (control group).

The investigators (Papish et al.) concluded that the combination of knowledge and contact has not consistently reduced stigma in medical students (Feldman, 2005; Sartorius et al., 2010; Smith & Weaver, 2006), and that improvements in attitudes toward

mental illness do not necessarily translate into an increased interest in pursuing a psychiatric career (Pinfold, Thornicroft, Huxley, & Farmer, 2005), indicating that underlying concerns likely remain. Papish et al. reported that the stress medical students experience when treating very ill or challenging patients on psychiatric rotations (Culter, Alspector, Harding, Wright, & Graham, 2006; Culter et al., 2009; Niedermier, Bornstein, Brandemihl, 2006) and also those who struggle with empathy may lead to poor quality care and burn out among medical students and physicians (Culter et al., 2006; Niedermier et al., 2006).

According to Druss et al. (2003), physician bias may result in patients with behavioral health problems receiving poorer care. Also, Galletly and Burton (2011) reported that people with greater numbers of severe mental health problems often do not receive the same quality of care as other patients. In addition, both health providers and medical students have been found to have high stigmatizing attitudes for patients with mental illness (Ogunsemi, Odusan, & Olatawura, 2008; Rao et al., 2009; Schulze, 2007). Some researchers found that physicians expressed more negative ratings for patients with a mental illness than did the general public (Jorm, Korten, Jacomb, Christensen, & Henderson, 1999; Nordt, Rossler, & Lauber, 2006), and also a greater desire for social distance (Ferret et al., 2011). Papish et al. (2013) reported a need to reduce negative attitudes of health professionals, although physicians' attitudes were found to be increasingly difficult to change as they progressed into their careers (Smith & Weaver, 2006).

Medical students' stigma. Of a group of medical students, Sivakumar et al. (1986) found that 28% reported individuals with mental illness were “not easy to like,”

but as doctors two years later, that figure rose to 56%. In their study, Sivakumar et al. found that after an 8-week clerkship in psychiatry and at the end of their clinical curriculum, positive changes in medical students' stigmatizing attitudes were not maintained by the end of their first post-graduate year. Their findings suggest that positive changes in students' specific attitudes toward psychiatry can be found following a clerkship, although these changes are not long-lasting and negative attitudes can increase. In addition, Totic et al. (2011) found medical students stigmatize a person with a psychiatric label more frequently in their final year, after psychiatric rotation. In contrast, Ay, Save, and Fidanoglu (2006) found that medical students in their final year improved their attitudes toward patients with mental illness. However, Ogunsemi, Odusan, & Olatawura (2008) found that final year medical students reported a desire to maintain social distance from an otherwise normal person who was labeled as "mentally ill." Totic et al. also found that medical students who had yet to go on psychiatric rotation had a tendency to stigmatize in a manner similar to non-medical students, a finding that was inconsistent with previous research (e.g., Chung, Chen, & Liu, 2001). Finally, medical students' negative attitudes may vary according to gender (Angermeyer & Dietrich, 2006), ethnicity (Silton, Flannelly, Milstein, & Vaaler, 2011), and personal or vicarious experiences of mental illness (Corrigan et al., 2003).

Due to the stigmatization of patients with behavioral health conditions, medical students often report the field of psychiatry to be an unappealing area of medicine (Malhi et al., 2002). Therefore, medical students' attitudes toward people with mental illness and towards the field of psychiatry are important constructs to measure in medical students (Kassam, Glozier, Leese, Henderson, & Thornicroft, 2010) because attitudes of

health care professionals are a determinant of the quality of care given to people with mental illness (Thornicroft, 2006; 2008). For this reason, Thombs, Adeponle, Kirmayer, and Morgan (2010) included medical students' attitudes toward the field of psychiatry and toward individuals with mental health issues during the development of the Doctors' Attitudes Toward Collaborative Care for Mental Health (DACC-MH) scale.

Reducing stigma. Because medical students will influence and shape the medical field and serve as models for the next generation of medical students and other health professionals, raising awareness and reducing stigma is highly desirable (Kassam et al., 2010). By understanding medical students' attitudes, those that are potentially problematic can be addressed through their education (McKenna et al., 2012). Stigma might be modified by level of education and direct contact with patients who have behavioral health issues (Totic et al., 2011). Although medical students' attitudes tend to strengthen over the course of their training and residency, students' attitudes are thought to be amenable to change (Papish et al., 2013). Also, educational training to reduce stigma is more likely to be effective with medical students than practicing physicians (Kassam et al., 2010). In fact, many initiatives to reduce stigma were found to achieve their objectives and resulted in positive outcomes (Corrigan & Lundry, 2001; Cowan & Hart, 2004; Startorius & Schulze, 2005; Schulze, Richter-Werling, Matschinger, & Angermeyer, 2003). Therefore, educational initiatives seem to be a prerequisite of good medical education (Kassam, Glozier, Leese, Thornicroft, & Loughran, 2011).

Referral Decisions

As behavioral health integrates with primary care, it is likely that referral decisions will become increasingly complex (Knight, 2003), and it is important to

understand the factors that influence behavioral health referrals for the appropriate, efficient, and effective use of behavioral health services (Knight, 2003). In fact, numerous studies have identified physician-related factors, as well as service-related and patient-related factors (Knight, 2003; Orleans, George, Houpt, & Brodie, 1985; Rowland, Irving, & Maynard, 1989). Frequently cited potential barriers that physicians consider in behavioral health referral decisions include: 1) timeliness and availability of psychologists, 2) patients having to make appointment arrangements, 3) insurance and financial factors, 4) poor communication between departments and across disciplines, and 5) attitudinal resistance on the part of patients and physicians to therapy and behavioral health referral (Kainz, 2002).

Physician-related factors. Previous studies have found that there is a large variation among physicians with regard to referral frequency, interventions, recommendations, interest, and confidence in treating patients with behavioral health problems (Knight, 2003; Hendryx, Doebbeling, & Kearns, 1994; Sheperd., Cooper, Brown, & Kalton, 1966; Verhaak, 1993; Whitehouse, 1987). However, Ghiacy (1995) found that quality of service and waiting times for appointments were the most important factors that physicians took into consideration when making referrals. In addition, proximity to behavioral health clinicians was an intermediate factor and cost was of minimal concern (Ghiacy, 1995). Knight (2003) found that physicians reported they were more likely to make a behavioral health referral when limited by time and/or expertise, although physicians who were more interested and confident in treating behavioral health problems were less likely to generate referrals.

Factors that are likely to increase referrals include: 1) insurance coverage, 2) follow-up and summary of treatment provided to physician in a timely fashion, 3) short term therapy, 4) treatment of children and adolescents, and 5) availability of behavioral medicine services (Papish et al., 2013).

Patient-related factors. Of the identified patient-related factors, Verhaak (1993) found that severity of the diagnosis and the patient's age and gender were considered by physicians when making referral decisions. However, Verhaak (1993) also found that the type of diagnosis had minimal influence on the types of behavioral health referrals physicians made. Morgan (1989) found that physicians most often made behavioral health referrals when medical treatment was not effective.

Conclusion

Behavioral health concerns include both physical and mental wellness, as well as any associated behaviors and decision-making. Increasingly large numbers of patients are presenting in primary care with behavioral health issues. Although current findings indicate standalone behavioral health outcomes in primary care are often negative, integrated health care models offer to improve treatment outcomes. However, many medical education programs provide their students insufficiently with training for the recognition and management of patients' behavioral health needs. Level of education (years in medical school), empathy, and stigma may be predictive of medical students' attitudes toward integrated care. Also, medical students' attitudes toward integrated care might be associated with their ability to recognize a patient potentially in need of a behavioral health referral. If true, improving behavioral health education in medical training, increasing medical students' empathy and reducing their stigmatizing attitudes

may have a profound influence on patient care and treatment outcomes, patient-physician relationships, costs of healthcare, behavioral health referrals, and the overall integration of behavioral health and primary care.

Chapter Two

Hypotheses

Hypothesis One. Medical students' empathy in patient-care situations, as determined by the Jefferson Scale of Physician Empathy (S-version), perceived stigma toward people with mental illness, as identified using the Mental Illness Clinicians' Attitudes (MICA 2) scale, and year in D.O. training are predictive of their attitudes toward collaborative care for behavioral health, as measured by the Doctors' Attitudes Toward Collaborative Care for Behavioral Health (DACC-MH) scale. Specifically, the relationship between medical students' empathy ratings, perceived stigma toward people with mental illness, and year in D.O. training will predict their attitudes toward collaborative care for behavioral health.

Hypothesis Two. Medical students' attitudes toward collaborative care for behavioral health as measured by the DACC-MH scale, ratings on factors that influence their referral decision making, as measured by *The questionnaire* and *Referral Decisions: Physician-Related Factors Questionnaire*, year in D.O. training, and other demographic characteristics will be related to their recognition of a hypothetical patient potentially in need of a behavioral health referral, as measured by their vignette score. Moreover, D.O. students' recognition of a hypothetical patient potentially in need of a behavioral health referral will be positively related to their attitudes toward collaborative care for behavioral health, factors that influence their referral decision making, year in D.O. training, and other demographic characteristics.

Chapter Three

Methods

Overview and Design Justification

A cross-sectional study was conducted using a survey method to investigate if there is a relationship between D.O. students' year in medical training, empathy in patient-care situations, perceived stigma for behavioral health problems, and attitudes toward collaborative care for behavioral health. In addition, this study examined if D.O. students' attitudes toward collaborative care for behavioral health, factors that influence their referral decision making, year in medical training, and other demographic characteristics were related to their recognition of a hypothetical patient potentially in need of a behavioral health referral.

Participants

The participants were recruited from the Philadelphia College of Osteopathic Medicine (PCOM), Philadelphia and Georgia campuses, D.O. program. Participants were recruited by an email request to D.O. students' email addresses, along with information about the study and benefits for participating. Their email addresses were obtained from the Office of Registrar. Participants were informed that their participation was voluntary, and that each participant was eligible to be entered into a raffle for a chance to win one of three Visa gift cards. As reported in PCOM's program statistics, the demographics for the entering class of 2011 (Philadelphia campus) were reported as: 51% female, 49% male; 75% White (non-Hispanic), 14% Multiple Races, 4% Black (non-Hispanic), 3% Asian Indian, 2% Indian/Pakistani, 1% Other Hispanic, and 1% Unidentified. The demographics for the entering class of 2011 (Georgia campus) were

reported as: 39% female, 61% male; 67% White (non-Hispanic), 4% Multiple Races, 4% Black (non-Hispanic), 1% Japanese, 1% Filipino, 1% Southeast Asian, 4% Asian, 6% Indian/Pakistani, 4% Other Asian, 2% Korean, 2% Chinese, 1% Other Hispanic, 1% Vietnamese, and 1% Puerto Rican.

Inclusion and Exclusion Criteria

Inclusion Criteria

Eligible participants for this study were required to be attending the Philadelphia College of Osteopathic Medicine, Philadelphia or Georgia campus, and be actively enrolled in the D.O. program. Eligible participants voluntarily responded to a request sent to their PCOM student email account asking for their participation in this study.

Exclusion criteria

Participants not eligible for this study were persons who were not students at PCOM Philadelphia or Georgia campus, as well as any PCOM student who was not actively enrolled in the D.O. program, or any D.O. student who was not in good academic standing. Furthermore, PCOM students who were registered in the D.O. program but who had not maintained active enrollment were not eligible for participation in this study.

Vignette Development

The vignette was designed to include a brief narrative of a hypothetical patient who presented with concerns that were consistent with behavioral health problems commonly reported by primary care patients (see appendix A). To account for gender bias, half of the participants were administered a male patient version and the other half were administered a female patient version of the same vignette. In addition, three independent health professionals who were doctoral-level psychologists or were licensed

physicians reviewed the vignette to verify the appropriateness of the description of the hypothetical patient's potential behavioral health needs. Participants were given instructions to rate the likelihood that they would make each of the provided treatment recommendations, including a behavioral health referral, using a 6-point Likert scale (1 = not very likely, 6 = very likely).

Questionnaires

The questionnaire was developed by Knight (2003) to identify different factors that influence physicians' referral decision making (see appendix D). Each factor is answered on a 6-point Likert scale (1 = not very likely, 6 = very likely). The following eight service-related factors were included: 1) Cost of the service, 2) Ease of access to the service for the patient, 3) Length of waiting list, 4) Quality of the service, 5) Physician's rapport with the service provider, 6) Quality of feedback from the service provider, 7) Service provider's theoretical orientation, and 8) Physician's previous experience with the service. These service-related factors were extracted from Ghiacy's (1995) research mentioned in the literature review (Knight, 2003). In addition, eight patient-related factors derived from previous research (e.g., Verhaak, 1993; Morgan, 1989; Robertson, 1979) and discussions with psychologists were also included (Knight, 2003). The patient-related factors included were: 1) Type of problem presented by the patient, 2) Chronicity of the problem, 3) Patient's treatment history (i.e., previous response to treatment), 4) Severity of distress, 5) Patient's preference, 6) Patient's motivation, 7) Quality of the patient's social support system, and 8) Patient's needs. This questionnaire was used to explore the relatedness between and among these sixteen factors mentioned and medical students' behavioral health referral decision making.

The *Referral Decisions: Physician-Related Factors Questionnaire* (see appendix E) was developed to examine eight physician-related factors found in previous research (e.g., Hendryx et al., 1994; Knight, 2003; Orleans et al., 1985; Rowland, Irving, & Maynard, 1989; Sheperd et al., 1966; Verhaak, 1993; Whitehouse, 1987). The physician-related factors included were: 1) Physician's time/availability, 2) Physician's professional relationship with the patient, 3) Physician's experience treating the patient's problem, 4) Physician's expertise treating the patient's problem, 5) Success of physician's treatment, 6) Needing assessment or advice from a therapist, 7) Difficulties with particular patients, and 8) Workload, emotional involvement. This questionnaire was also used to explore the relatedness between these eight factors and medical students' behavioral health referral decision making.

Measures

The *Jefferson Scale of Physician Empathy – Students Version* (JSE-S) (Hojat et al., 2002) was originally developed to measure the attitudes of medical students toward physician empathy in patient-care situations. This scale was labeled as the “S” version and it was constructed on the basis of an extensive and comprehensive literature review. The researchers conducted pilot studies with groups of practicing physicians, medical students, and residents. After further development and changes to the scale, the JSE-S included 20 Likert-type items answered on a 7-point scale (1 = strongly disagree, 7 = strongly agree). Convergent validity was confirmed by significant correlations ($p < 0.05$) between scores on the empathy scale and conceptually relevant measures, such as compassion (for residents, $r = 0.56$; for medical students, $r = 0.48$). Also, significant correlations were observed between the Jefferson Scale of Physician Empathy and

Interpersonal Reactivity Index (14) subtest scores for empathetic concern (for residents, $r = 0.40$; for medical students, $r = 0.41$); perspective taking (for residents, $r = 0.27$; for medical students, $r = 0.29$), and fantasy (for residents, $r = 0.32$; for medical students, $r = 0.24$). Correlations of scores on the Jefferson Scale of Physician Empathy and self-ratings of empathy were ($r = 0.45$) for residents and ($r = 0.37$) for medical students. Discriminant validity was supported by the lack of a relationship between empathy and conceptually irrelevant measures such as self-protection ($r = 0.11$, non-significant). Internal consistency reliability of the original scale was determined by coefficients alpha (0.87 for residents; 0.89 for medical students).

The *Mental Illness Clinicians' Attitudes* scale version two (MICA 2) is a 16-item scale that measures medical students' attitudes toward people with mental illness (see appendix B). Each item is answered on a 6-point Likert scale (1 = strongly agree, 6 = strongly disagree). Total scores can range from a minimum of 16 to a maximum of 96 (Kassam, Glozier, Leese, Loughran, & Thornicroft, 2011). High scores indicate more negative stigmatizing attitudes toward mental illness (Gabbidon et al., 2013). Kassam et al. (2010) found that the scale was both reliable ($\alpha = 0.79$; test-retest = 0.80) and valid. The *Mental Disorder Understanding* scale was used to determine convergent validity ($r = 0.17$). In addition, the *Complementary Health Beliefs Questionnaire* ($r = -0.08$) and the *Marlow-Crowne Social Desirability* scale ($r = -0.27$) were used to assess divergent validity. Also, the MICA demonstrated responsiveness to change following an intervention, and a standardized response mean (SRM) was found to be 0.4. Kassam et al. (2010) indicated further research is needed to assess its internal structure, because

factor analysis revealed seven factors. Last, in some instances, small sample sizes were used to assess the reliability and validity (Gabbidon et al., 2013).

The *Doctors' Attitudes Toward Collaborative Care for Mental Health* (DACC-MH) scale was developed to assess doctors' attitudes toward two core components of collaborative care for mental health: mental health management by non-psychiatric physicians and psychiatric consultation (see appendix C). The 8-item scale includes four items to assess attitudes toward management of mental health problems, as well as four items to assess attitudes toward psychiatric referral. All item responses are dichotomous (agree or disagree). Thombs et al. found that both subscales of the DACC-MH have good internal consistency reliability, 0.65 for the Management subscale (4-items) and 0.67 for the Consultation subscale (4-items). In addition, Thombs et al. reported that the reliability values are lower than might be expected, although this is due to the fact that the magnitude of Cronbach's alpha is dependent on the number of items in a scale. The validity of the DACC-MH was assessed by comparing latent factor levels and raw scale scores between physicians and surgeons, using results from previous studies (Cohen-Cole & Friedman, 1982; Mayou & Smith, 1986; Morgan & Killoughery, 2003; Thombs, Adeponle, Kirmayer, & Morgan, 2010). As hypothesized, Thombs et al. found factor and raw scores of physicians were significantly higher than scores of surgeons on both subscales. This indicated that physicians held more positive attitudes toward management of mental health problems and consultation with psychiatrists and psychologists, than did surgeons.

Procedure

This study was conducted after receiving approval from the Institutional Review Board (IRB) at Philadelphia College of Osteopathic Medicine. The participants received information regarding this study via their student email accounts. Eligible students who were interested and volunteered to participate were provided with one of two web addresses directing them to SurveyMonkey.com. This provided participants with access to the study information and measures.

Participants then completed the informed consent process. Following this, participants were prompted to complete the measures in the following order: Jefferson Scale of Physician Empathy – Student Version (JSE-S), Mental Illness: Clinicians’ Attitudes (MICA 2) scale, and Doctors’ Attitudes Toward Collaborative Care for Mental Health (DACC-MH) scale. Then, participants were asked to read the vignette and provide a rating for each response option; this was to be followed by *The questionnaire* and Referral Decisions: Physician-Related Factors questionnaire. Last, participants provided their demographic information (see appendix F).

At the end of the survey, participants who expressed their willingness to participate in the raffle were entered into the drawing for a chance to win one of three Visa gift cards.

Chapter Four

Results

Demographic Characteristics of Participants

The total sample consisted of 105 participants. Participants with missing data on any of the independent or dependent variables (i.e., JSE-S, MICA 2, DACC-MH, Vignette, and demographic characteristics) or those that did not meet inclusion criteria (i.e., actively enrolled in PCOM D.O. program and in good academic standing) were excluded from the analysis. Thirteen participants were removed for incomplete responses and one participant was removed for not being in good academic standing. Therefore, the total sample size decreased to 91 participants.

Table 1 depicts the sample size and the percentage of the sample for the following demographic variables: age group, year in D.O. program, race/ethnicity, gender, PCOM campus, religious affiliation, vignette version, prior experience with mental health, perceived quality of experience with mental health, and perceived area of future specialty.

Table 1
Frequencies of Demographic Independent Variables (N = 91)

Variable	N	%
Age Group		
21-25	45	49.5
26-30	39	42.9
31-35	5	5.5
36-40	1	1.1
>40	1	1.1
Year in D.O. Training		
First	32	35.2
Second	16	17.6
Third	8	8.8
Fourth	34	37.4
Fifth	1	1.1
Race/Ethnicity		

Caucasian/White	67	73.6
Asian	12	13.2
African-American	4	4.4
Mixed	2	2.2
Hispanic/Latino/a	2	2.2
Other	3	3.3
Native Hawaiian/Pacific Islander	1	1.1
Gender		
Male	33	36.3
Female	58	63.7
PCOM Campus		
Philadelphia	67	73.6
Georgia	24	26.4
Religious Affiliation		
Catholic	26	28.6
Protestant	4	4.4
Christian	21	23.1
Jewish	3	3.3
Muslim/Islamic	2	2.2
Other Religion	8	8.8
Not Religious	27	29.7
Vignette Version		
Male	44	48.4
Female	47	51.6
Prior Experience with Mental Health		
No Experience	9	9.9
Minimal Experience	39	42.9
Some Experience	31	34.1
A lot of Experience	12	13.2
Perceived Quality of Experience with Mental Health		
Very Poor	1	1.1
Poor	19	20.9
Fair	37	40.7
Good	27	29.7
Very Good	7	7.7
Perceived Area of Future Specialty		
Anesthesiology	5	5.5
Cardiology	3	3.3
Dermatology	2	2.2
Emergency Medicine	9	9.9
Family Medicine / General Practice	11	12.1
Internal Medicine	15	16.5
Neurology	0	0
Neurosurgery	2	2.2
Obstetrics / Gynecology	7	7.7
Oncology	4	4.4

Orthopaedic Surgery	2	2.2
Otolaryngology	0	0
Pediatrics	7	7.7
Physical Medicine / Rehabilitation	1	1.1
Preventive Medicine	2	2.2
Psychiatry	1	1.1
Radiology	1	1.1
Surgery	7	7.7
Urology	0	0
Not Decided	8	8.8
Other	4	4.4

The participants in the sample were primarily Caucasian/White (73.6%), female (63.7%), enrolled at the PCOM Philadelphia campus (73.6%), between the ages of 21-25 (49.5%) and 25-30 (42.9%), in their fourth (37.4%) or first (35.2%) year of medical training, identified as being Not religious (29.7%), Catholic (28.6%), or Christian (23.1%), had minimal prior experience (42.9%) or some prior experience (34.1%) with mental health, and their perceived quality of experience with mental health ranged between good (29.7%), fair (40.7%), and poor (20.9%). Also, the participants reported a perceived area of future specialty in internal medicine (16.5%), family medicine/general practice (12.1%), emergency medicine (9.9%), obstetrics / gynecology (7.7%), pediatrics (7.7%), surgery (7.7%) or were undecided (8.8%).

Method of Analysis

Prior to analysis, all variables that consisted of more than two levels were dummy coded to make them dichotomous. A multiple regression analysis using SPSS was conducted to test Hypothesis One. The dependent variable for analysis of Hypothesis One consisted of participants' total scores on the *Doctors' Attitudes Toward Collaborative Care for Mental Health* (DACC-MH). Although the independent (predictor) variables for hypothesis one consisted of their total scores on the *Jefferson*

Scale of Physician Empathy – Student Version (JSE-S), Mental Illness Clinicians’ Attitudes scale version two (MICA 2), and year in D.O. training.

A correlational analysis was conducted to test Hypothesis Two, using SPSS. The variables included in Hypothesis Two were participants’ recognition of a hypothetical patient in need of a potential behavioral health referral (vignette scores), *Doctors’ Attitudes Toward Collaborative Care for Mental Health (DACC-MH)* scores, ratings on factors that influence their referral decision making, year in D.O. training, and demographic characteristics.

Hypothesis One

To determine if medical students’ empathy in patient-care situations, attitudes toward people with mental illness, and year in D.O. training were predictive of their attitudes toward collaborative care for behavioral health, a multiple regression was conducted using SPSS. Multiple regressions are useful for estimating the value of one variable from two or more variables (Field, 2013). A table of the means and standard deviations for the DACC-MH, JSE-S, MICA 2, and participants’ year in training can be found in Table 2 and Table 3.

Table 2
Means and Standard Deviations of Independent Variables (N = 91)

Variable	M	SD
JSE-S	111.78	13.56
MICA 2	40.77	9.72
Year in D.O. Training	2.52	1.34

Table 3
Mean and Standard Deviation of Dependent Variable (N = 91)

Variable	M	SD
DACC-MH	15.25	1.30

The Jefferson Scale of Physician Empathy normative sample mean total score (108.4) and standard deviation of (12.7) is relatively close to participants' in the present sample mean total score (111.78) and standard deviation (13.56). In addition, the MICA 2 normative sample mean total score (37.7) is relatively close, when compared with the present sample's mean total score (40.77). Although a normative mean total score and standard deviation is not found in the literature for the DACC-MH scale, the minimum possible score is 10 and the maximum possible score is 16. However, participants in this sample had a total mean score of (15.25) and standard deviation of (1.30) and the majority of the participants achieved the maximum possible score.

All of the assumptions for a multiple regression analysis were met. Upon initial examination of the predictor variables, it was noted that the assumption of multicollinearity was not violated because none of the correlations between any of the variables were above 0.70 or 0.80. Initially, participants' responses on the DACC-MH did not appear to be normally distributed; however, by checking the Skewness and Kurtosis it was found that the variability of responses were approximately normal because the mean, median, and mode of participants' responses on this measure were similar. The *Pearson Correlations* among all variables in the analysis to test Hypothesis One can be found in Table 4.

Table 4*Pearson Correlations*

Variable	1	2	3
DACC-MH	.34	-.41	-.09
Independent Variables			
1. JSE-S	--	-.49	-.22
2. MICA2		--	.17
3. Year in D.O. Training			--

A moderate positive relationship was found between participants' empathy in patient-care situations and attitudes toward collaborative care for behavioral health, $r(87) = .34, p \leq .001$. Also, a moderate negative relationship was found between participants' perceived stigma toward people with mental illness and attitudes toward collaborative care for behavioral health, $r(87) = -.41, p < .001$. Moreover, a moderate negative relationship was found between participants' attitudes toward people with mental illness and empathy in patient-care situations, $r(91) = -.49, p < .001$. Furthermore, a small but significant negative relationship was found between participants' year in D.O. training and empathy in patient-care situations, $r(87) = -.22, p \leq .02$.

The *Model Summary*, *ANOVA* test results, and *Standardized Coefficients* can be found in Table 5, Table 6, and Table 7.

Table 5*Model Summary*

R	R Square	Adjusted R Square	Std. Error of the Estimate
.44	.20	.17	1.18

Table 6
ANOVA

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	29.55	3	9.85	7.05	.000
Residual	121.64	87	1.40	--	--
Total	151.19	90	--	--	--

Table 7
Standardized Coefficients

Individual Predictors	Beta	τ	Sig.
JSE-S	.18	1.62	.109
MICA2	-.33	-2.95	.004
Year in D.O. Training	.01	.06	.952

A multiple regression was conducted to predict participants' attitudes toward collaborative care for behavioral health from the variables, empathy in patient-care situations, perceived stigma of people with mental illness, and year in D.O. training. Overall, the regression was significant, $F(3, 87) = 7.05, p \leq .000, R^2 = .20$. Of the predictors investigated, only participants' perceived stigma of people with mental illness ($\beta = -.33, \tau(87) = -2.95, p \leq .004$.) was a significant predictor of participants' attitudes toward collaborative care for behavioral health. Empathy in patient-care situations ($\beta = .18, \tau(87) = 1.62, p \geq .109$.) and year in D.O. training ($\beta = .01, \tau(87) = .06, p \geq .952$.) were not significant predictors of participants' attitudes toward collaborative care for behavioral health.

Hypothesis Two

A Pearson Correlation analysis was computed using SPSS to determine if participants' recognition of a hypothetical patient in need of a potential behavioral health referral is related to their attitudes toward collaborative care for behavioral health, factors that influence their referral decision making, year in D.O. training, and demographic

characteristics. Correlations are useful for determining if variables are related. All assumptions for this correlation analysis were met. A table of the means and standard deviations for the Vignette, DACC-MH, factors that influence referral decision making, year in D.O. training, and demographic characteristics can be found in Table 8.

Table 8
Means and Standard Deviations of Variables (N = 91)

Variable	M	SD
Vignette Score	4.89	1.44
DACC-MH	15.25	1.30
Vignette Version	1.52	.50
Campus	1.26	.44
Year in Program	2.52	1.34
Age Range	1.62	.74
Gender	1.64	.48
Ethnicity/Race	1.60	1.32
Religious Affiliation	3.91	2.47
Prior experience with mental health	2.51	.85
Quality of perceived experience with mental health	3.21	.94
Perceived preferred future specialty	9.64	6.22
Type of problem presented by the patient	5.17	1.24
Chronicity of the problem	4.95	1.33
Patient's treatment history (i.e., previous response to treatment)	4.93	1.27
Severity of distress	5.06	1.29
Patient's preference	4.55	1.38
Patient's motivation	4.68	1.38
Quality of the patient's social support system	4.70	1.26
Patient's needs	5.18	1.28
Cost of the service	4.22	1.47
Ease of access to the service for the patient	4.63	1.31
Length of waiting list	4.13	1.34
Quality of the service	5.13	1.17
Your rapport with the service provider	4.29	1.48
Quality of feedback from the service provider	4.43	1.37

Service provider's theoretical orientation	3.58	1.63
Your previous experience of the service	4.77	1.40
Your time/availability	3.56	1.60
Your professional relationship with the patient	4.09	1.47
Your experience treating the patient's problem	4.71	1.33
Your expertise treating the patient's problem	4.71	1.40
Success of your treatment	4.73	1.37
Needing assessment or advice from a therapist	5.02	1.32
Difficulties with particular patients	4.29	1.48
Workload, emotional involvement	3.81	1.49

The Pearson Correlations (r) and alpha levels (α) between participants' vignette score and their attitudes toward collaborative care for behavioral health, factors that influence their referral decision making, year in D.O. training, and other demographic characteristics in the analysis to test Hypothesis Two can be found in Table 9. A Bonferroni correction was made for a more conservative alpha level because of the number of correlations that were simultaneously performed ($p \leq .001$).

Table 9
Pearson Correlations

Variable	r	α
	Vignette Score	
DACC-MH Total Score	.23	.029
Vignette Version	.03	.760
Campus	.01	.980
Year in Program	-.21	.050
Age Range	.03	.760
Gender	.12	.270
Ethnicity/Race	-.15	.170
Religious Affiliation	.04	.700
Prior experience with mental health	-.11	.310
Quality of perceived experience with mental health	.01	.933

Perceived preferred future specialty	.19	.073
Type of problem presented by the patient	.56	.000
Chronicity of the problem	.60	.000
Patient's treatment history (i.e., previous response to treatment)	.54	.000
Severity of distress	.55	.000
Patient's preference	.36	.001
Patient's motivation	.41	.000
Quality of the patient's social support system	.37	.000
Patient's needs	.57	.000
Cost of the service	.21	.044
Ease of access to the service for the patient	.40	.000
Length of waiting list	.34	.001
Quality of the service	.57	.000
Your rapport with the service provider	.36	.000
Quality of feedback from the service provider	.40	.000
Service provider's theoretical orientation	.24	.025
Your previous experience of the service	.44	.000
Your time/availability	.11	.304
Your professional relationship with the patient	.29	.006
Your experience treating the patient's problem	.61	.000
Your expertise treating the patient's problem	.61	.000
Success of your treatment	.62	.000
Needing assessment or advice from a therapist	.58	.000
Difficulties with particular patients	.30	.004
Workload, emotional involvement	.21	.043

Strong positive relationships were found between participants' recognition of a hypothetical patient in need of a potential behavioral health referral and factors that influence their referral decision making, including success of treatment $r(91) = .62, p \leq .000$, experience treating the patient's problem $r(91) = .61, p \leq .000$, expertise treating the patient's problem $r(91) = .61, p \leq .000$, chronicity of the problem $r(91) = .60, p \leq .000$, needing assessment or advice from a therapist $r(91) = .58, p \leq .000$, patient's needs $r(91) = .57, p \leq .000$, quality of the service $r(91) = .57, p \leq .000$, the type of problem presented by the patient $r(91) = .56, p \leq .000$, severity of distress, $r(91) = .55, p \leq .000$, and patient's treatment history (i.e., previous response to treatment) $r(91) = .54, p \leq .000$.

In addition, moderate positive relationships were found between participants' recognition of a hypothetical patient potentially in need of a behavioral health referral and factors that influence their referral decision making, including previous experience of the service $r(91) = .44, p \leq .000$, patient's motivation $r(91) = .41, p \leq .000$, quality of feedback from the service provider $r(91) = .40, p \leq .000$, ease of access to the service for the patient $r(91) = .40, p \leq .000$, quality of the patient's social support system $r(91) = .37, p \leq .000$, rapport with the service provider $r(91) = .36, p \leq .000$, patient's preference $r(91) = .36, p \leq .001$, and length of waiting list $r(91) = .34, p \leq .001$.

Chapter Five

Discussion

As primary care and behavioral health head toward full integration, patients with behavioral health needs continue to suffer from stigmatization and limited care, even by health care providers (Culter et al., 2009). Developing empathy in medical students has been recognized both as an essential element of medical education and as a clinical competency (Gleichgerricht & Decety, 2013; Halpern, 2003). Therefore, it is important to add to the knowledge base about physician training in the integrated primary care environment.

This cross-sectional study was conducted to examine the relationships between medical students' year in medical training in an osteopathic medical school, empathy in patient-care situations, perceived stigma toward people with mental illness, attitudes toward collaborative care for behavioral health, and recognition of a hypothetical patient in need of a potential behavioral health referral. The goal of this study was to better understand if D.O. students' attitudes toward collaborative care for behavioral health were predicted by their empathy in patient-care situations, perceived stigma of mental illness, and year in D.O. training.

Another goal of this study was to increase understanding of the relationship between medical students' recognition of a hypothetical patient in need of a potential behavioral health referral and their attitudes toward collaborative care for behavioral health, factors that influence their referral decision making, year in D.O. training and other demographic characteristics.

Hypothesis One

Medical students' empathy in patient-care situations, perceived stigma toward people with mental illness, and year in D.O. training were analyzed to determine if these variables are predictive of their attitudes toward collaborative care for behavioral health. It was hypothesized that D.O. students with less empathy in patient-care situations, greater perceived stigma toward people with mental illness, and those further along in the D.O. training were less likely to report positive attitudes toward collaborative care for behavioral health. The results indicated that variance of D.O. students' attitudes toward collaborative care for behavioral health was accounted for by the three variables: empathy in patient-care situations, perceived stigma toward people with mental illness, and year in D.O. training. However, only D.O. students' perceived stigma toward people with mental illness significantly predicted their attitudes toward collaborative care for behavioral health. Although D.O. students' empathy in patient-care situations and year in D.O. training were not significant predictors of their attitudes toward collaborative care for behavioral health; this could be due to the limited variability of responses on the DACC-MH.

In addition, increases in D.O. students' empathy in patient-care situations were found to be moderately related to increases in their positive attitudes toward collaborative care for behavioral health. Also, increases in D.O. students' perceived stigma toward people with mental illness were moderately related to decreases in their positive attitudes toward collaborative care for behavioral health. Moreover, it was found that increases in D.O. students' perceived stigma toward people with mental illness were moderately related to decreases in their empathy in patient-care situations. Last, it was found that

decreases in students' empathy in patient-care situations were mildly related to increases in their year in D.O. training.

Hypothesis Two

D.O. students' recognition of a hypothetical patient in need of a potential behavioral health referral was compared with their attitudes toward collaborative care for behavioral health, factors that influence their referral decision making, year in D.O. training, and other demographic characteristics. It was hypothesized that D.O. students' recognition of a hypothetical patient in need of a potential behavioral health referral was related to their attitudes toward collaborative care for behavioral health, factors that influence their referral decision making, year in D.O. training, and other demographic characteristics.

The results indicate that there were significant relationships between D.O. students' recognition of a hypothetical patient in need of a potential behavioral health referral and factors that influence their referral decision-making. Furthermore, five patient-related (type of problem presented by the patient, chronicity of the problem, patient's treatment history, severity of distress, and patient's needs), four physician-related (experience treating the patient's problem, expertise treating the patient's problem, success of treatment, needing assessment or advice from a therapist), and one service-related (quality of the service) factors were found to be strongly related to D.O. students' recognition of a hypothetical patient in need of a potential behavioral health referral. Moreover, five service-related (ease of access to the service for the patient, length of waiting list, physician's rapport with the service provider, and previous experience with the service) and three patient-related (patient's preference, patient's motivation, and

quality of the patient's social support system) factors were found to be moderately related to D.O. students' recognition of a hypothetical patient in need of a potential behavioral health referral.

However, the results indicate that D.O. students' recognition of a hypothetical patient in need of a potential behavioral health referral was not significantly related to their attitudes toward collaborative care for behavioral health, vignette version, campus, year in training, age range, gender, ethnicity/race, religious affiliation, prior experience with mental health, quality of perceived experience with mental health, or perceived preferred future specialty.

Implications of the Findings

Although integrated models of behavioral health and primary care have demonstrated increased patient and physician satisfaction (Katon, 1995; Price, Beck, Nimmer, & Bensen, 2000), and improved adherence to medical recommendations (Haynes, McDonald, & Garg, 2002), it was found in previous research that most medical students receive insufficient behavioral health training and education (Chur-Hansen et al., 2008). Therefore, to add to the knowledge base for enhancing medical students' attitudes for improved recognition and treatment of patients with behavioral health needs, it is important to explore variables associated with collaborative care for behavioral health because it is the first step toward improving medical education and behavioral health interventions in primary medical care.

Because empathy is a key element in patient-care situations and necessary to achieve optimal clinical outcomes (Berg et al., 2011), it was important to examine the relationship between medical students' empathy and attitudes toward collaborative care

for behavioral health. In addition, research previously suggested that medical students' empathy tended to decrease over the course of medical training; therefore, it was important to include participants' year in D.O. training as well. Furthermore, similar to empathy, stigma against people with mental illness is quite prevalent (Dearing & Steadman, 2008), and it is often a primary barrier to patients' treatment and recovery (Abbey, Charbonneau, Tranulis, et al., 2011; U.S. Department of Health and Human Services, 1999). Physicians' and medical students' stigma toward people with mental illness (Ogunsemi, Odusan, & Olatawura, 2008; Rao et al., 2009; Schulze, 2007), were previously found to be increasingly difficult to change as they progressed through their education and careers (Smith & Weaver, 2006). Thus, the finding that medical students who have less perceived stigma toward people with mental illness are predicted to have more positive attitudes toward collaborative care for behavioral health, serves as an early indication that a reduction in D.O. students' stigmatizing attitudes toward people with mental illness can likely reduce patients' barriers to access and to utilization of behavioral health care, in primary medical care.

Although this study did not find that medical students' empathy in patient-care situations were predictive of their attitudes toward collaborative care for behavioral health, the two variables were found to share a moderate positive relationship. Also, a moderate negative relationship was found between D.O. students' perceived stigma toward people with mental illness and their attitudes toward collaborative care for behavioral health. Furthermore, a moderate negative relationship was found between D.O. students' empathy in patient-care situations and perceived stigma toward people with mental illness. Last, a small negative relationship was also found between D.O.

students' empathy in patient-care situations and year in training; it is also a finding that is supported in research literature.

Due to the prevalence and projected increases of patients presenting in primary care with behavioral health needs, and the poor behavioral health outcomes found in the current health care system, it is important to explore factors that influence medical students' attitudes toward collaborative care and their recognition of patients in need of a potential behavioral health referral. The implications of the results may help to enhance the ongoing integration of behavioral health and primary care. This can lead to a reduction in the overutilization and costs of healthcare, a decrease in the burden that patients with behavioral health needs place on physicians and primary care settings, an improvement in the care and treatment outcomes of behavioral health issues and comorbid illnesses, an increase in patient and in physician satisfaction, and the identification for future areas of research.

Also, the implications of significant results from this study will help to inform the future direction of medical education and training. More specifically, the results may help to better understand the factors that influence medical students' recognition of and referral for patients with potential behavioral health concerns, so that medical education can be enhanced to better prepare aspiring physicians for assessing behavioral health concerns and working in integrated healthcare settings. However, due to the numerous physician-related, patient-related, and service-related referral factors, continued exploration will be necessary to improve knowledge of the complex nature of behavioral health referrals, and the role of medical training and physicians' attitudes in the referral process.

Limitations

Although there are many potential benefits, this study is not without its limitations. First and foremost, the results of this study cannot be generalized because a sample of convenience was used. Specifically, osteopathic students from two campuses of one medical school are not representative of all medical students or all osteopathic schools. In addition, only self-report measures were used to obtain information, which is limiting, because the information cannot be independently verified. Furthermore, a potential self-selection bias might have occurred because the majority of those who responded identified as having previous encounters or vicarious experiences with mental health.

Another limitation is the use of only a male or female version of the same vignette to determine students' ability to recognize a hypothetical patient in need of a potential behavioral health referral because behavioral health problems often present differently in individual patients. Thus, this study is merely exploratory and future research is required for further study of the results. Additionally, numerous factors that influence physicians' referral decision making for patients with potential behavioral health needs cannot be easily accounted for due to the complexity of the referral process.

Also, this study was unable to examine the outcomes of behavioral health referrals; rather, it examined only medical students' recognition of a hypothetical patient in need of a potential behavioral health referral. Therefore, this study does not identify the benefits or quality of behavioral health referrals. Although this exploratory study has clear limitations, the results provide reason for future research.

Future Research

Future research should include a comparison between osteopathic and allopathic medical students with regard to their attitudes toward collaborative care, empathy in patient-care situations, perceived stigma toward people with mental illness, and factors associated with medical students' and physicians' recognition of the need for, and generation of, behavioral health referrals. In addition, future research is necessary to identify interventions that can enhance medical students' and physicians' behavioral health decision making, and also whether or not these interventions lead to improvements in behavioral health care outcomes. Last, further research should examine medical programs in which there is no psychology program on campus to investigate the potential effects of exposure.

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