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The Adequacy of PA Didactic Psychiatric Education

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The Adequacy of PA Didactic Psychiatric Education

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Abstract

With a shortage of mental health specialists, primary care providers, which increasingly include physician assistants (PAs), must be able to adequately recognize, diagnose, and treat common mental health disorders. Unfortunately, providers are not currently able to meet this challenge and frequently underdiagnose and undertreat psychiatric conditions. This paper examined the amount of didactic education in psychodiagnostics PA students receive compared to the amount of didactic psychodiagnostics training psychotherapists students receive in graduate school. Results indicated that while psychotherapists have, on average, more classroom time, the difference in seat time between PAs and psychotherapists is less than double, but the assigned readings are more than triple for psychotherapists. Moreover, PA programs are not taught directly from the industry standard, the *Diagnostic and Statistical Manual of Mental Disorders,* fifth edition (*DSM-5*). This suggests that PAs have adequate time to be taught psychodiagnosis, but that that the reading assignments are not sufficient. Following from the research, the differences between the biomedical and the biopsychosocial model of health and wellness are explored. Finally, suggestions for further and future research are discussed.

Introduction

Medical providers struggle to deliver adequate mental healthcare both in the United States and worldwide. There are significant barriers to accessing specialty mental healthcare, including a shortage of mental healthcare providers such as psychiatrists, psychotherapists, psychologists, and social workers.[1,2,3] These barriers to care have led to a large percentage of patients with psychiatric problems being treated exclusively by their primary care provider.[4,5,6,7,8] As with most specialty providers, primary care providers (PCPs) have limited training in mental health, and yet they are expected to be able to manage basic and common psychiatric conditions without referring the patient out to specialty care. The research has repeatedly shown that primary care is underdiagnosing and undertreating mental health conditions.[9,10,11,12,13,14,15,16,17]

This paper will review the current research on mental healthcare in the primary care setting, and the ways in which the academic education of primary care providers may play a significant role in the quality of care provided. This paper will then include an examination of the most common and current approaches to addressing the problems faced by primary care providers treating patients with psychiatric conditions, namely the use of screening questionnaires and universal screening recommendations. In particular, the current debate over the United States Preventive Services Task Force (USPSTF) recommendation for universal screening of adults for depression will be discussed and summarized. A comparative analysis will then be discussed pertaining to the didactic education of physician assistants (PAs) and mental health counselors (psychotherapists), utilizing content analysis data. The results of this study will be analyzed and the implications will be discussed. Limitation of this study will be identified and further future research will be suggested.

Literature Review

Mental Health in Primary Care

Many patients with mental health problems never seek nor receive adequate treatment due to the inaccessibility of care. Of those who do seek mental healthcare, primary care is the most common setting for such treatment to take place.[4] Worldwide, patients with mental health conditions constitute a significant percentage of a general practitioner's or primary care provider's patients.[5,6] In the U.S., primary care provides half of all mental health services.[8] In Canada, more patients seek mental healthcare from their family doctor than from specialists like psychiatrists or social workers.[7] In 2013, a white paper was published by the *Journal of the American Board of Family Medicine* identifying that family physicians are essential to mental healthcare in the U.S.[18] With expected shortages of mental health specialists, primary care providers will continue be responsible for the mental healthcare a of a significant percentage of psychiatric patients.[2]

With such a large percentage of mental health patients being seen in the primary care setting, PCPs must be familiar with a wide range of psychiatric disorders such as depression, anxiety, eating disorders, bipolar disorders, schizophrenia, and personality disorders, among others. Anxiety disorders are some of the most common mental health conditions that present to primary care. However, they are often undiagnosed or mistreated.[9] Specifically, generalized anxiety disorder is frequently underdiagnosed and inadequately treated overall.[10,11] Likewise, social anxiety disorder is also often not treated adequately due to low detection rates.[12]

Depression, and specifically major depressive disorder, is another mental health condition that is common in primary care patients.[14] Some studies estimate that about 10% of all primary care patients are likely to meet the diagnostic criteria for depression.[19,20] Even when family

practitioners routinely screen for depression, it can often be missed.[13] General practitioners and PCPs only accurately recognized depression in their patients about 47% of the time.[14,15] Bipolar disorder is also common among primary care patients, and it too can easily be misdiagnosed as anxiety or unipolar depression.[16] In summary, there is amble research which shows primary care providers are not adequately detecting, diagnosing, and treating common psychiatric conditions.

Unfortunately, undiagnosed and untreated mental illness is a significant burden for the patients and society overall. Untreated mental health disorders, for example, can be deadly to the patients who may accidently or intentionally inflict self-harm. Numerous studies have shown the association between depression and increased mortality.[21] Furthermore, primary care providers are often in a position in which they represent the last opportunity for a disorder to be recognized. It has been found that about half of all patients who die by suicide had contacted their general practitioner in the month prior to their suicide.[20,22] For this reason, primary care providers have a key role in recognizing and intervening with suicidal patients.[20] Collectively, the research shows that primary care providers are often the first, last, and only medical provider that will see many mental health patients.

The burden of depression is not limited only to the symptoms of depression, but extends to other aspects of health. Patients with mental health conditions experience high rates of morbidity. To compound this challenge, depression makes treatment of other physical conditions more difficult.[23] Depression also worsens health outcomes for a large spectrum of chronic diseases, such as angina, arthritis, asthma, and diabetes.[24]

Despite the high usage needs and importance that mental healthcare plays in primary care, many primary care providers report they are not adequately trained in this field. Two studies asked family physicians in Canada to rate their undergraduate and graduate training in

bipolar disorder and eating disorders. Family physicians rated their undergraduate training in eating disorders as poor in 75% of the responses, and they rated their postgraduate training in eating disorders as poor 59% of the time.[25] Similarly, 42% of responding family physicians rated their undergraduate training in bipolar as poor, and postgraduate training as poor 42% of the time.[26] This is not a unique attitude to Canadian family physicians. Family practice physicians in the United States also cited insufficient training as a barrier to adequate mental health treatment in primary care.[27]

The problem of insufficient training is known to medical leaders, though some discrepancies exist between self-evaluations and the assessment of specialty providers. In a study of primary care residency directors, respondents acknowledged that the psychiatric training of PCPs is not adequate and needs to be improved. The overwhelming majority of general practice residency directors, including internal medicine, OB/GYN, and pediatric directors, rated their psychiatric training as suboptimal or minimal.[28,29] However, when family practice residency directors were surveyed, many rated their psychiatric training as adequate, though psychiatric residency directors disagreed with this evaluation.[30] This discrepancy may point to a problem at the level of foundational training, in that some providers may be unaware that their training is not adequate per the standards of specialists, who are better equipped to evaluate.[29]

Inadequate training of providers during their education can lead to deficits in the provider's knowledge base, which can become another barrier to care. The ability to make an accurate diagnosis has been cited as an important challenge to family physicians when treating major depressive disorder.[31] In a meta-analysis of twenty studies of the barriers to the integration of mental health services into primary care, limited knowledge and skills was listed as one of the most frequently reported obstacles.[32] Similar barriers to care, such as a lack of

knowledge by the provider, and other challenges of primary care, exist for anxiety disorders as well, and can lead to misdiagnosis and inadequate treatment.[33] In a qualitative study of depression in primary care, the authors found numerous barriers to the care of the patient's depression, including substantial information gaps and frequently missed diagnoses.[17]

Even when a family physician is able to accurately diagnose a mental illness such as depression, their training might not be sufficient to be able to provide adequate treatment. There is clear evidence that psychotherapy in combination with psychopharmacological treatment is superior to either treatment alone.[34,35,36] However, with primary care providers having to be the mental health provider for many patients, and the limited availability of mental health specialists, PCPs may be expected to provide treatments like cognitive behavior therapy (CBT) with very limited training. In one study conducted in London, Onterio, a third of providers reported providing CBT treatment despite also reporting they had limited training in the technique.[13] Providers delivering treatments for which they are not adequately trained and are not comfortable with is dangerous for both the patient and the provider. As with any medical procedure, CBT is intended to be delivered only by trained professionals who understand its limitations, benefits, and risks, and who are equipped to assess the patient's response.[37,38] A PCP who has not been trained specifically in psychotherapy may be unaware that CBT is not appropriate for all patients and can cause harm if delivered ineffectually.[39]

A possible cause of the knowledge gap for primary care providers is that the psychiatric training in educational programs is not standardized and there is a wide variability in the amount of mental healthcare taught, with an equally wide variety of methodology.[28] While anxiety and mood disorders (e.g., depression and bipolar disorders) are frequently taught in family medicine

clerkships, other important psychiatric topics such as counseling skills and screening tools are taught much less consistently.[4]

Unfortunately, the problem of primary care providers being under-trained in psychiatric conditions and treatment is not recent. A 1987 article in the *International Journal of Psychiatry Medicine* proposed standards for psychiatric trainings for primary care residents, noting that primary care physicians see themselves as poorly trained and that this inadequate training may be contributing to the poor psychiatric care that they provide.[40] In 1999, the same journal published an article describing the manner in which one medical school was teaching psychiatry to family medicine residents in an attempt to highlight the importance of psychiatric training for primary care providers.[41] The problems of mental healthcare being provided in primary care have been a constant refrain and the importance of improving psychiatric education to PCPs has been espoused for decades, seemingly with few changes to practice.

A significant portion of the existing research literature focuses on psychiatric training during physicians' residency programs, and thus little is available pertaining to didactic psychiatric education during the academic phase of medical education. However, a pair of studies conducted in Saudi Arabia provide some insight. These studies showed that after an intensive four-day training course in mental illnesses, PCPs were found to have increased knowledge, but multiple regression analyses suggested that their undergraduate psychiatric courses had a positive contribution to the results.[42,43] This suggests that a strong didactic psychiatric foundation would be beneficial to primary care providers who are providing mental healthcare. Continuing education may be unable to fully fill the knowledge gap.

Integrated healthcare teams offer another perspective on the competent delivery of mental healthcare by PCPs. In integrated healthcare teams, PCPs and mental health specialists

collaborate on shared patient cases. Mental healthcare specialists stress the importance of a strong foundational knowledge of psychiatry and mental healthcare for their colleagues, in order to facilitate such interprofessional collaborations.[44] If general medical providers are lacking knowledge about mental health, then there is a significant barrier to the integration of mental health services.[45] In an integrated healthcare system, primary care providers must be knowledgeable in mental health in order to effectively operate as a part of the patients' healthcare team.

Physician Assistants and Mental Health in Primary Care

Physician assistants (PAs) are providing an increasing amount of primary care, with PAs and Nurse Practitioners accounting for 10% of primary care providers in 2000-2001, and 15% in 2009-2010.[46] One third of PAs report working in primary care.[47] PAs are now an integral part of primary care and when looking at the challenges that primary care providers face, it is necessary to include PAs in the analysis and proposed solution.

Unfortunately, the mental health and psychiatric training of PA school is not any more standardized or comprehensive than it is for medical doctors. The accreditation standards for PA school do not provide significant guidance for the amount or level of psychiatric education, and thus there is a large variance in the manner in which mental health and psychiatry are taught.[48] The *Ad Hoc Committee on the Future of PAs in Mental Health* issued a report that underscored the inconsistencies in psychiatric education during PA school, concluding that this is detrimental to both patient care and PAs' ability to practice within the field of psychiatry.[3] The report also reiterated the importance of PAs in any field of medicine to be adequately trained on psychiatric conditions and treatments in order to be effective members of healthcare teams.[3] An editorial in *Academic Psychiatry* called for psychiatrists to take a more active role in the education of PAs,

citing the inconsistent training between PA schools.[1] As a shortage of psychiatric providers is predicted to peak by 2024,[1,3] more attention is being given to PAs as potential providers to cover this gap. The inconsistent academic and clinical training also appears to be gaining attention from the larger medical community. There are repeated calls to ensure that PAs are properly educated by experts in the field of psychiatry in order to prepare PAs to work within both the fields of psychiatry and primary care.[1,48]

Screeners and Algorithms

As has been showed thus far, the difficulties and quality of mental healthcare being provided by primary care providers is well acknowledged and many researchers have attempted to address this problem and offer solutions. The most common approach to this problem, as represented by research literature, focuses on increasing the use of screening questionnaires and diagnostic algorithms. One example of such research is a 2019 study in which researchers screened patients with the PHQ-2 and PHQ-9 and concluded that "The intervention shows promise in expanding access to care and reducing disparities." [49] The Patient Health Questionnaire (PHQ), in its various forms (PHQ-2, PHQ-9), is a very common screening tool for depression, and researchers are continuing to look for new ways and situations in which to use it, such as screening for depression in the acute trauma setting.[50] Other common screening tools include the Major Depression Inventory (MDI) and the Beck Depression Inventory (BDI). Clinicians are encouraged to use these inventories as diagnostic tools by the research literature.[51] However, the validation of these tools, as diagnostic or as screeners, is questionable due to many of the tools having been developed using previous, outdated editions of the *Diagnostic and Statistical Manual of Mental Disorders* (*DSM*). For example, in the previous citation from 2019, Christensen et al[51] claimed that the MDI was diagnostic, citing Bech et al in a 2001 article that

claimed the MDI was diagnostic per to the *DSM-IV* standards.[52] However, the *DSM-IV TR* (text revision), to which Bech et al refer,[52] was replaced by the *DSM-5* in 2013. While the changes to the definition and diagnosis of depression were not significant between the *DSM-IV TR* and the *DSM-5*, this example demonstrates that there is significant reason to remain skeptical of the claims of diagnostic validity of these tools. Discriminating between disorders with these tools may also be complicated. In 2019, Kotiaho et al. looked at the accuracy of the BDI, finding that many patients who scored high on the BDI had two or more psychiatric conditions, not only depression.[53]

In 2019, Ferenchick et al. summarized the current guidelines on screening for depression in primary care, in which the authors discussed several different screening options for primary care providers, including using a two-step screening approach with the PHQ-2, then the PHQ-9 to confirm a positive screen,[54] a method also discussed by Thompson et al.[49] While Ferenchick et al. stated that a positive screening should lead to further diagnostic assessment, the use of screeners by PCPs for psychiatric patients is featured and emphasized.[54] While the PHQ-9 and General Anxiety Disorder-7 (GAD-7) are specific for individual mental health conditions (depression and anxiety respectively), there are also generalized mental health disorder screening tools which can be used by providers, such as the Primary Care Evaluation of Mental Disorders Patient Questionnaire (PRIME-MD PQ). For example, one study using PRIME-MD confirmed that there is a high prevalence of psychiatric conditions in primary care patients, and the authors further concluded that there is utility in using the tool as a screener for mental health disorders.[5] Again, this further demonstrates that the current approach to addressing the mental healthcare gap in primary care is focused on the use of screening tools by clinics and providers.

With advancing technology and electronic medical records, more research is being published on the use of computer algorithms in combination with these screening tools. There are now computer programs such as VitalSign6, which can automatically apply a screener to a patient's electronic chart and flag positive screenings, which researchers claim helps improve primary care providers' ability to identify and manage depression in their clinics.[55] VitalSign6 was explicitly created to help primary care providers manage depression and combat "the assumption that primary care providers (PCP) cannot effectively manage depression." [56] Again, the method used to improve mental healthcare by PCPs is not improving the abilities or training of providers, but rather applying a computer program, or algorithm, to assist the provider.

From a survey of the literature, we can see that there is considerable focus on the use and role of mental health screening questionnaires such as the PHQ and others. While much of the research shows positive results when these tools are used regularly by PCPs, screening tools are not without limitations. Screening questionnaires for mental health conditions have been a focus of scholarly research in an attempt to address the poor diagnostic and treatment adequacy for years. If these tools were fully effective, surely results would have been seen by this time, and the research literature would reflect largescale improvements, which unfortunately, is not the case.

While diagnostic screening instruments are useful at times for preventing missed psychiatric diagnoses, they cannot replace a trained clinician's professional assessment and judgement. Screening metrics are based upon diagnostic checklists, which are explicitly not intended to be used as a standalone test devoid of clinical training. As explained by the authors of the *DSM-5*, the diagnostic material in this book is to be used only alongside mental health education and training: "the relative severity and valence of individual criteria and their

contribution to a diagnosis require clinical judgement." [57(p19)] Moreover, most research articles, including those cited above, are careful to state that a positive screening with tools such as the PHQ or BDI should prompt further clinical evaluation. However, in primary care clinics, there are often barriers to doing a more complete diagnostic assessment, including time constraints and lack of clinical ability to perform this task.[33]

There is some debate within the research literature about the use of screening tools. It has been argued that when these tools appear effective in study data, it is likely that the clinician, and not the tool, was the most important variable.[58] Additionally, screening tools have been found to be less useful for minority patients, patients without previous psychiatric history, and patients who require fewer interventions and less treatment.[59] One study was able to show that a provider's training is critical to an accurate diagnosis of depression, even when a structured interview was not followed.[60] In other words, a well-trained provider is able to accurately diagnose depression, even when a structured interview or screener is not used. This is especially important for patients for whom a screener is not normed, validated, or appropriate.

The focus and debate on screening questionnaires is epitomized by the current opposing recommendations by national task forces. In 2009, the U.S. Preventive Services Task Force (USPSTF) issued a grade B recommendation for universal and routine screening of adults for depression as long as there are services for follow-up and support.[61] The American College of Preventive Medicine strongly supported this recommendation, further reiterating the role of PCPs in mental healthcare.[62] In contrast, the Canadian Task Force on Preventive Health Care (CTFPHC) recommended against using screening questionnaires to routinely screen for unrecognized depression.[63,64] The United Kingdom also does not recommend screening for depression.[54]

As Thombs and Ziegelstein pointed out in their editorial regarding the CTFPHC recommendation, screening is usually done for medical conditions when early detection of a condition, during a time of low symptom or asymptomatic presentation, is necessary in order to begin effective treatment. They argued that this is not the case with depression, which can be screened for only during active symptom presentation.[65] Furthermore, the authors noted that there is not any significant evidence from randomized controlled trials (RCTs) that supports the recommendation by the USPSTF.[66] In 2016, the USPSTF reaffirmed their recommendation for universal screening of adults for depression,[67] and the lack of RCT evidence was again emphasized by Mojiabai.[68] While the debate among task forces continues, what is undisputed is that the debate on how to improve mental healthcare in the primary care setting is focused on the use of screening questionnaires.

Mental Health Education for PCPs

A common approach to addressing the shortcomings of mental healthcare in primary care has been through continuing education courses or training courses, such as one offered by CME Institute, called "Major Depressive Disorder in Primary Care: Strategies for Identification." Citing the USPSTF's recommendation, this course's description states, "Clinicians can improve the recognition, diagnosis, and treatment of depression by using a measurement-based care approach. The systematic use of validated screening tools can improve recognition and diagnosis." [69] Courses such as that described above and other continuing education (CE) classes have not been found to be effective at improving clinician's diagnostic competency.[70] This is consistent with the evidence that primary care providers were not given a strong foundation in mental health and psychiatry during their medical education. Without a strong foundation, continuing education or supplemental trainings on psychiatric conditions are unlikely to succeed.

The importance of a clinician's formal education to the recognition of mental health disorders is best understood by comparing PCPs to providers of other clinical disciplines. One such study compared clinicians trained in four different backgrounds: medicine, psychology, nursing, and social work. Social workers had a greater likelihood of screening for depression than each of the other disciplines. While the authors of this study noted that there are numerous challenges to recognizing and treating patients with depression in the primary care setting, they concluded that addressing the differences in education could be one way to minimize the barriers to adequate mental health care.[71]

The need for quality education is clearly not limited only to psychopharmacology and medication management. Education also does not need to be limited strictly to diagnosis. Some researchers have begun to explore teaching the necessary skills and competencies for non-pharmacological treatment during residency for physicians.[8] Not every patient is appropriate for medication, and even if supplemented with medication, access to talk therapy interventions is important for many patients. Increased training for PCPs, especially in rural areas where the mental health specialist shortage is pronounced, have been recommended in the literature several times.[2,72] It also logically follows that when mental healthcare is prioritized in formal education, as it is with social workers and psychotherapists, that those providers are more likely to consider a mental health diagnosis and screen for it.

One of the few articles available in the research literature which specifically calls for increased academic training in the field of psychiatry at both the undergraduate and graduate levels, does so in the context of rural Nepal. The authors concluded that "to address the mental health education gap, primary care providers in Nepal, and perhaps other low- and middle-income countries, require more training during both undergraduate and graduate medical

education."[73] The authors noted that in low- and middle- income nations, many patients with mental health conditions are not able to get treatment due to a shortage of mental healthcare providers. Accordingly, primary care providers are being asked to provide mental healthcare.[73] The problems of rural Nepal mirror those of high-income nations, such as the United States,[2] and yet the approaches in the literature are quite different. It is likely that medical educators in the United States could benefit from the best practices of medical education across the globe.

Mental Health Education for Specialists

As shown above, it is well established that the mental health training for PCPs is not adequate. This is demonstrated by providers' own dissatisfaction with their training and comfortability in treating patients with mental health disorders and by the data which shows that primary care is not providing adequate care and treatment for patients with psychiatric conditions. While it is unreasonable to expect PCPs to be trained to the same level as mental health specialists, it is useful to examine the ways in which mental health specialists are trained in order to find ways to improve the training of generalists. Several articles above suggested that psychiatric providers should be more involved in the training of primary care providers.[1,2,48] Psychiatric medical training, however, has become siloed into its own specialty and does not sufficiently interact with other fields of medicine. This has led to medical providers who are not trained well enough to provide even basic psychological care for their patients.[74] There are training frameworks available which have been developed by mental health specialists which ensure a provider does have a strong foundation, or core competency, in psychiatry, but currently they are not being widely used.[74]

Mental health clinicians may be licensed under various titles, according to state affiliation. Under the umbrella term of psychotherapists, these clinicians are trained to diagnose

the full range of mental health conditions and develop treatment plans. For patients who are fortunate to be able to seek specialized mental healthcare, the psychotherapist is often the provider who sees the patient the most and has the most developed relationship. Because of their role as a specialist provider, psychotherapists are seen as experts on the diagnosis of mental health disorders and have been used as the standard in scholastic literature.[75]

Psychiatric diagnoses are difficult in part because they rely on the patient report of symptoms and the clinician's ability to elicit a complete picture. It is therefore key to making accurate diagnoses to conduct a complete diagnostic interview, which can be helped by the use of semi-structured interview techniques.[76] In primary care, this is a challenge due to limited time.[27,33] Psychotherapists may choose to meet with a client over multiple 50-minute sessions before generating a diagnosis,[77] which is difficult in primary care.

As within the primary care literature, screening instruments have been investigated within the psychotherapy research base, to examine the efficacy of improving diagnosis. The results of one such study showed that while checklists reduced incorrect diagnosis (false positives), they also reduced accurate diagnosis of depression (true positive).[78] This conforms with the research emphasizing clinical judgement; if a questionnaire helps to rule out a psychiatric diagnosis, but not rule one in, there is a risk of building confidence in a tool which cannot be relied upon for client care.

Psychotherapist education is of course foundationally different than that of PAs and other medical providers. This education, however, is pertinent to any healthcare providers who need to diagnose mental health conditions. Classroom education hours and readings have been shown to correlate with improved diagnostic judgment and accuracy for psychotherapists.[79]

Conclusion of Literature

In summary, the current research shows that primary care providers, including an increasing number of PAs, are not adequately recognizing and treating mental health conditions in their patients. While the literature suggests that education, training, and comfortability with mental health play a significant role in the care of psychiatric patients, most of the current research and recommendations are focused on supplemental education and the use of screening questionnaires. A direct comparison of the formal education of PCPs and mental healthcare specialists may illuminate the weaknesses in primary care providers' education and offer novel methods for improving mental healthcare in the primary care setting.

Methods

Data Collection

This study required the comparison of medical education to mental health education. The decision to compare the didactic instruction of PAs and psychotherapists was made in order to keep the project limited in scope and to compare two similar degrees. Both PA and psychotherapy are master's level professional clinical degrees, preparing clinicians to be able to independently diagnose mental health conditions. A document review of syllabi was decided as the data collect method. Since no human subjects were being studied, it was decided in consultation with this author's faculty advisor that no Institutional Review Board (IRB) process was required. An IRB exemption request was sent to Augsburg University's IRB chair, which was granted. Draft language of the email request to faculty, describing the research and requesting syllabi, was submitted to and approved by the faculty advisor before email requests were sent out.

A list of all accredited PA programs is provided on the website of the Accreditation Review Commission on Education for the Physician Assistant (ARC-PA), the accrediting body of PA programs, listed alphabetically by state. Each school's public PA program website was viewed by this author and examined for an appropriate contact email. The first choice for the selection of email contacts was to select a general PA program information email that was not specifically for admission questions, or a general contact form. If no general email was found, then public faculty listings were searched for a faculty member listed as "Academic Coordinator" or "Didactic Coordinator," provided that this individual had a publicly viewable email on the school's website. If no faculty was explicitly listed as academic or didactic coordinator, then either the chair or co-chair of the PA program was used if they had a publicly listed email. A handwritten list of schools, email used, and contact name, if applicable, was kept in a locked home office. In total, 142 emails were sent requesting syllabi and schedules for any class that fulfilled ARC-PA standard B2.08: "The curriculum must include instruction in: ... d) psychiatric/behavioral conditions..."[80] Thirteen PA schools ultimately provided syllabi and schedules for their psychiatric units. Also included in this study was the author's school's psychiatric unit information, bringing the total sample size of PA programs to fourteen. Messages from other programs suggested that overall response rates may have been adversely affected by the significant number of researchers approaching this population with research requests.

Psychotherapist programs were limited to Council for the Accreditation of Counseling and Related Educational Programs (CACREP) accredited programs. Syllabi were acquired through public program websites where sample syllabi were posted. Program course catalogues were examined for classes such as "diagnosis" or "psychopathology." CACREP standard

5.C.2.D states that schools are required to teach "diagnostic process, including differential diagnosis and the use of current diagnostic classification systems, including the Diagnostic and Statistical Manual of Mental Disorders (DSM) and the International Classification of Diseases (ICD)." [81] Every effort was made to include all classes within a program that would teach psychotherapists to diagnose mental health conditions and fulfil this requirement. Two additional schools were acquired through personal connections with the professor, bringing the total number of psychotherapy programs to eight. A larger sample of psychotherapist programs was not prioritized in this study, due to counselors not being the primary population of interest.

Syllabi were printed out, grouped by program, and assigned an identification number that was recorded in a notebook and kept in a locked home office. The syllabi were analyzed and data was entered into an Excel spreadsheet on a password-protected personal computer, kept in a locked home office. Each school or program was considered a single unit; if multiple classes taught diagnosis of mental health conditions, they were combined and recorded as a single entry. This file only used the assigned school ID numbers, and was only saved to the physical hard drive of that computer and not to any web-hosted data backup or cloud-based storage. The raw data was only viewed by this researcher and the faculty advisor. At the end of this project, all physical copies of syllabi were destroyed.

Units of Measurement

Syllabi and course catalogs showed that some schools covered psychiatric diagnosis within one course, whereas others spread the material over two courses. To compare the educations of students equitably, if a school utilized two classes to cover the diagnostic material, the two syllabi were analyzed together. As such, the unit of measurement within this study is the school, not the syllabus or class.

Data collected from each school consisted of hours of seat time, approximate pages of textbook reading assigned, and whether or not the *DSM-5* was listed as an assigned text. Not every school provided each data type, and missing data was noted.

Data Analysis

Analysis consisted of generating descriptive statistics. Course and lecture schedules were reviewed. The total amount of class time was calculated, rounded to the closest 15-minute increment, and recorded in decimal format. Class time was counted at face value without any attempt to account for breaks or early release. If no class time was listed, it was recorded as missing data. Included in the total class time was any scheduled period listed on the syllabus, including tests, quizzes, group work, and review days. If lecture topics were included on the course schedule, seat time was further categorized as either *psychodiagnosis* or *other*. Topics that were included in psychodiagnosis time were lectures which addressed or covered conditions listed in the *DSM-5*, death and grief, and emergency psychiatry. The topics of death, grief, and emergency psychiatry were included because it is important for clinicians to be able to distinguish normal emotional and psychological reactions to death and trauma. Not included in psychodiagnosis class time were times for exams, quizzes, lectures on suicide and abuse, and review sessions.

Required and recommended or suggested textbooks were recorded, specifically whether the *DSM-5* was included in either category. Assigned readings were calculated using the "Look Inside" feature on Amazon.com to view the tables of contents and count the pages listed. Supplemental readings, handouts, and posted articles were not counted due to insufficient information about which readings were assigned. Readings from pharmacology or

pharmacotherapy textbooks were counted separately from other assigned readings, but were included in the overall assigned reading page count.

Psychotherapy syllabi were analyzed for similar data as the PA program syllabi: total required classroom time, time devoted to diagnostic skills and knowledge, and total number of textbook pages assigned. Additionally, the number of assigned pages from the *DSM-5* were counted separately. Reading assignments were calculated by using online tables of contents or by using the assigned page numbers listed on the syllabi. Additional readings and assigned journal articles, noted on syllabi as available on the course website or to be distributed by faculty, were not included.

Results

Syllabi from fourteen PA programs and eight mental health counselor programs were analyzed. Seven of the fourteen PA programs taught the psychiatric unit as its own class with a stated credit load. In two programs, the psychiatric unit was a unit within a broader class. The other five programs' syllabi did not provide enough information to determine the credit load of the psychiatric class or unit. Of the seven programs that did specify a credit load exclusive to the psychiatric unit, two were listed as 3-credit courses, and five were two credits.

Of the eight psychotherapist programs examined, four programs had only one 3-credit course that covered psychodiagnostics, and four programs had two 3-credit courses, for a total of six credits. These programs represent schools on both the quarter and the semester systems. Counting seat time mitigated differences between credit hour systems.

The total amount of classroom time and the amount of time devoted to psychodiagnosis was counted from the sample syllabi when possible. These results are shown in Table 1.

Table 1. *Total and diagnostic classroom time (in hours)*

	PA Programs[1]		**Psychotherapist Programs[2]**	
	Mean	*SD*	*Mean*	*SD*
Total classroom time	*37.17*	*14.27*	*63.75*	*23.89*
Psychodiagnosis time	*24.56*	*6.78*	*42.31*	*9.91*

[1] n=12
[2] n=4

When examining the sample syllabi for textbooks and reading assignments, only one PA program listed the *DSM-5* as a required textbook, account for approximately 7% of the sample. However, specific reading assignments were not able to be calculated for this program. Three of the other thirteen programs listed the *DSM-5* as a recommended or optional textbook, or about 23% of the sample. In contrast, all eight (100%) mental health counselor programs required the *DSM-5*, and reading assignments were able to be calculated in six of the eight programs. The total number of pages of assigned readings are summarized in Table 2.

Table 2. *Assigned textbook readings (in pages)*

	Assigned textbook readings[1]	
	Mean	*SD*
PA Programs[2]	434.33	148.47
Psychotherapist Program[3]	1265	271.45

[1] Includes all assigned textbook readings including pharmacology and pharmacotherapy.
[2] n=9
[3] n=6

It was noted when examining the required textbooks from PA programs that several courses were using pharmacology or pharmacotherapy textbooks as part of the assigned readings. If readings from pharmacotherapy textbooks are excluded from the assigned readings page counts of the PA programs, the average decreases to 380.33 pages with a standard deviation of 105.01 pages. Similarly, since all of the sampled psychotherapist programs required the *DSM-5,* and all six of the therapist programs which had specific readings included on the syllabi had assignments that could be quantified, it was possible to count and calculate the average amount of readings from the *DSM-5* for counselor programs. The mean number of pages assigned from the *DSM-5* for mental health counselors was 652.33 pages, with a standard deviation of 146.41 pages. Because no PA program included in the sample had specific assigned readings from the *DSM-5*, the average assigned page count of *DSM-5* reading is zero.

Discussion

As the literature review demonstrated, primary care providers are not adequately able to recognize and diagnose mental health conditions, and thus are unable to adequately treat these health conditions in the primary care setting. As the shortage of mental healthcare specialists is expected to worsen, it will become increasingly important for PCPs to perform this duty. The purpose of this study was to compare the training of PAs, who increasingly provide primary care, and psychotherapists, who are recognized as experts in psychodiagnosis. It is important to note that PAs and psychotherapists have very different roles and duties within the healthcare system. The training, therefore, will not be the same. However, comparing PAs to psychotherapists provides insights about the gap between PA education and the standard of care in specialty care. If the inadequacies of mental health treatment by PCPs are to be addressed at the didactic graduate level, rather than during the post-graduate, or residency (or later) phase of a provider's

career, then it is important to compare the ways in which primary care providers are currently educated to the educations of experts and specialists. This will provide both a starting point and a goal to move towards.

As experts in the field of mental health, it was expected that psychotherapists would have more didactic instruction and training in psychodiagnosis than PAs. However, results showed that psychotherapists have less than twice amount of classroom time, both in total classroom time and in number of hours specifically devoted to teaching psychodiagnostics. While PAs, and other PCPs, are not expected to be experts in the field of psychiatry, they are expected to be able to handle simple cases of common mental health conditions.[4,18,82] With more than 50% of the training hours that psychotherapists receive, this goal seems attainable. However, the evidence cited in the literature review shows that PCPs are not currently performing this skill at an appropriate level. Causes other than lack of classroom training time must be considered as reasons for the poor performance by PCPs when diagnosing and treating mental health conditions in primary care. While PAs appear to have sufficient hours of training in psychiatry to perform at a basic level, it is more difficult to assess whether that training is adequate.

There was a wide range in the number of classroom hours devoted to psychiatric education in PA programs within the present sample; total seat time ranged from 19.5 hours to 71.5 hours. This is consistent with the literature which has identified that PA programs lack consistency in psychiatric education. In comparison, however, psychotherapists have a wide range of total seat time as well.

Assigned pages of reading were also utilized to examine the quantity of diagnostic education. In the United States, the definitions and diagnosis of psychiatric conditions are largely determined by the *DSM-5*, which is an industry standard in medicine and medical billing.

For this reason, it was valuable to separate readings from the *DSM* from other supplemental readings. None of the sampled PA program syllabi included specific reading assignments from the *DSM-5*, however, several programs utilized specific pharmacology or pharmacotherapy textbooks in their psychiatric courses. These were easily identifiable by the title of the textbook, and were separated to provide a more accurate comparison between the programs. Results showed that PA students are reading significantly less material in their mental health units than psychotherapists, and what reading they are doing is not drawn from the industry standard for psychodiagnosis.

The most striking difference between the educational models is the use of the *DSM-5*. No sampled PA program included specific reading assignments from the *DSM-5*. Since the *DSM* is the definition and guide to mental health diagnoses, it is not surprising that PCPs are not able to accurately diagnose even common mental illnesses if they are not being widely being taught from the diagnostic manual. In contrast, all sampled psychotherapist programs included the *DSM-5* as required reading, and on average, assigned a significant portion of the text.

Beyond volume of reading, results suggest that the usage of the *DSM-5* may differ. The *DSM-5* consists of three sections and an appendix. Excluding the appendix, Section I through III consist of 804 pages. The average amount of the *DSM* that psychotherapist programs assigned to be read was 652.33 pages, or 81% of the text. This could suggest that psychotherapist educators do not view the *DSM-5* as a reference manual, but as a primary source for known information on the conditions contained within. Requiring full reading, as opposed to referencing of checklists, suggests that this perspective may be being imparted during instruction. This understanding of the DSM-5 is consistent with its own instructions for use:

> The symptoms contained in the respective diagnostic criteria sets do no constitute comprehensive definitions of underlying disorders, … Rather, they are intended to summarize characteristic syndromes of signs and symptoms… Hence, it is not sufficient to simply check off the symptoms in the diagnostic criteria to make a mental disorder diagnosis. … [T]he relative severity and valence of individual criteria and their contribution to a diagnosis require clinical judgement.[57(p19)]

One of the easiest ways to more closely align the education of PCPs with the mental health specialists would be to have PCPs read the *DSM-5* during school. This would result in future providers having a better understanding of the diagnoses contained within the *DSM*, and would also have the provider engage with the text as more than just a reference manual.

When the differences in total reading assignments is examined, another stark difference appears between the educations of psychotherapists and PAs. Over the course of their psychodiagnostics training, psychotherapists were assigned an average of over 1200 pages, whereas PAs were only assigned a little over 400 pages. While classroom time and credit hours differ by about 50%, the reading assignments are about three times more for psychotherapists than for PAs. This difference should not simply be attributed to the difference between a general practitioner and a specialist or expert in the field. Instead, the overall trends of primary care providers and their level of competency should be considered. It is known that the current level of training is not producing PCPs who are able to accurately and appropriately recognize, diagnose, and treat patients with common mental health disorders. Furthermore, it is known that the level to which psychotherapists are educated is considered an expert level. If the goal is to improve the care provided by general practitioners in primary care, the amount of textbook readings should be considered for change. By replacing the current amount of assigned readings

from non-*DSM* texts, with the average amount of *DSM-5* readings that are assigned to psychotherapists, PA students would move from an average of 380 pages to 652 pages of reading, excluding necessary psychopharmacotherapy readings. While this would be a significant increase in assigned reading pages for PA students, it is not impossible to imagine this being achieved. This would not only provide the benefit of having PA students read a primary text, but would again be moving the education of PAs closer to, and more consistent with, the education of mental health specialists.

Increasing seat time, the amount of reading, and the quality of reading materials would likely enhance diagnostic efficacy of PAs. This is true not only because such changes would be more in line with the standard of training for specialists, but because research has suggested that exposure to psychiatric education overall improves the level of comfort that providers have when treating psychiatric conditions.[72] Simply emphasizing the importance of psychiatric care by investing school time demonstrates to students that this topic is important and one in which they are being supported to build confidence. When readings are minimal and surface-level (perhaps referencing the *DSM* instead of being drawn from the *DSM*), students may conclude that this topic is not as important as others covered with more academic rigor.

The *DSM-5* states that clinical judgement is necessary for accurate diagnosis. This is supported by research that shows that psychotherapists frequently reference their clinical judgement and previous experience when discussing the manner in which they managed a new patient interview.[83] Results of the present study suggest differences in how the educational models value clinical judgement. No surveyed PA program required reading the introduction and use of the manual chapters of the *DSM*, which includes the above referenced quotation about

the importance of clinical judgement. It is harder to teach the notion that clinical judgement is key if this section of the text is not assigned.

Philosophical Models

Although not specifically addressed by the research design, another important difference emerged between the educations of psychotherapists and PAs as syllabi were examined. This difference is in philosophical orientation. In 1977, Dr. Engel argued that the biomedical model of disease was not helpful in the field of psychiatry and that mental health should be conceptualized differently. His proposed new model was called the biopsychosocial model, which focused on the interacting factors of biology, psychology, and social influences.[84] In the decades since Engel introduced the biopsychosocial model, it has become a critical part of how mental health specialist understand psychiatric disorders. The value of this model has been reiterated in various publications.[85,86]

In contrast, the medical model does not make great use of the biopsychosocial model. PAs are trained under the medical model to think and diagnose in a way similar to physicians. In looking at the challenges of educating physicians, a 2015 article articulated that one of the barriers to physicians (and those trained like physicians) learning more behavioral health science is that physicians have a particular way that they "think, speak, and prioritize information while caring for their patients."[87] The difference between the biomedical or disease model use in medicine and the biopsychosocial model of psychiatry contributes greatly to the cultural divide between the fields of medicine and psychiatry. To a medical provider like a physician or PA, depression is a disease that affects the patient, and it needs to be diagnosed, treated, and cured. For psychotherapists, other variables, such as life events, relationships, and personal values, are considered as critical for meaning-making. McPherson and Armstrong conducted interviews

with general practitioners in the UK that showed this and highlighted the ways in which primary care providers think differently about mental illnesses like depression.[82]

Since the introduction of the biopsychosocial model, research has repeatedly shown that social and psychological factors contribute as much as biological factors, and yet the medical field overall still has not incorporated it into their daily practices and organizations,[88] perhaps in part because physicians do not feel they are sufficiently trained to assess and manage a patient using the biopsychosocial model.[89] In 2018, Kusnanto, Agustian, and Hilmanto argued that the biopsychosocial model helps primary care providers to better care for their patients and improve patient-provider relationships.[90] Psychotherapists and other psychiatric providers have been using the biopsychosocial model for decades to conceptualize, research, and better understand mental health disorders.

Despite repeated calls for mental health experts to become more involved in the training of primary care providers,[4,18,82] medical education remains siloed.[74] Introducing mental health specialists into PA education could bring not only more focus, but the biopsychosocial model, into medical education. Until PCPs begin incorporating the biopsychosocial model into their practice, they will continue to struggle to adequately treat mental health conditions. Because the biopsychosocial model is a conceptualization of health and a philosophical approach rather than a skill or technique, it is best taught during the academic phase of a clinicians training. It is difficult to change the foundational conceptualization with which providers practice after they have begun practicing.

Implications

Quality, rigorous diagnostic training in the mental health field should not be left to continuing education. PA programs can build educational experiences into graduate school

which address the problem of insufficient mental health care in primary care. PA educators could use the results of this study to reevaluate psychiatric units in PA school. Educators could consider adding reading material, and specially the *DSM-5*, to psychiatric classes and utilizing the biopsychosocial model as a method of conceptualization. PA schools could also consider partnering with mental health specialists to provide some of this education.

Limitations

This study has several limitations. The sample was nonrandom, and results should be interpreted with awareness of possible volunteer bias, as programs may have been more likely to respond if faculty felt proud of their curriculum. Moreover, some schools have a policy of not sharing their syllabi or assisting with other programs' student projects. Also, the sample size is small for both PA schools and psychotherapy programs. Additionally, due to a lack of a standard format for syllabi, and differences in the information included, there were numerous missing data points. Because this study was only a document review, the scheduled assignments and hours were counted at face value and it was not possible to factor in changes that happened during a course, such as early release from lecture, breaks, or changes in reading assignments.

Results of this study are also predicated on an assumption that programs are approximately equal in educational quality. No attempt was made to assess the quality of the assigned readings, textbooks, speakers, or lectures. The importance of quality for a classroom instructor cannot be minimized, but it is not possible to assess from a syllabus. In addition to assuming all assigned reading pages were of equal quality, it was assumed that all pages were of approximately equal length. Finally, many syllabi included assigned readings that were posted to class webpages or provided in class, and were not counted. These could significantly contribute to a student's learning and education, but were not able to be counted for this study.

Future Research

Repeating this study with a larger sample size of syllabi, and collecting missing data, such as specific reading assignments and additional readings, would increase accuracy. It would also be useful to assess actual seat time rather than written schedules, for a more accurate count of hours of education. Further research could also examine the quality of the speakers, lecture content, and textbook content. Different programs could also be compared to determine whether or not added seat time and increased amounts of reading result in differing degrees of diagnostic ability for PA students.

Additionally, further research should investigate the rates that medical providers, and specifically primary care providers, are being educated in a biopsychosocial model, especially when being instructed on mental health disorders. Further studies could follow primary care providers who are trained in the biopsychosocial model long-term to assess whether or not they have improved ability to recognize, diagnose, and treat psychiatric conditions.

Conclusion

This paper has reviewed existing literature on mental health care in primary care settings, including important deficits. The research presented in this paper addresses one possible solution to this problem, which is to increase mental health education in PA programs. As expected, due to their different roles in healthcare, the didactic training of PAs and psychotherapists in psychodiagnostics were found to differ in both amount and source material. It appears from this study that on average, PA programs have enough classroom time to adequately establish a foundation for the mental health conditions they will be responsible for diagnosing and treating in primary care settings, as shown by having more than half the amount of classroom hours that mental health experts receive during their academic training. While the

amount of academic classroom hours between PAs and psychotherapists were not as divergent as predicted, there was very little similarity and overlap in the use of the *DSM-5* and the amount of assigned reading material. This suggests that while the amount of time provided to teach psychodiagnosis may be adequate, the approaches to this topic are very different. It should be a goal to improve the education of PCPs, such as PAs, by changing their academic educations to be more consistent and congruent with the didactic education of mental health specialists such as psychotherapists. It is critical that PCPs are able to provide quality mental healthcare.

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