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The effects of education and training experiences on primary care and behavioral health providers' practice in integrated primary care

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Abstract

Patients in primary care clinics frequently present with behavioral health related concerns, but for various reasons often fail to receive effective treatment for these problems. The integration of behavioral health providers within primary care practice has been receiving an increasing amount of research, policy, and funding support as the most appropriate way to address this health care problem. Experts in the field have suggested that specific education and training as well as a shift in professional cultures and attitudes regarding integrated primary care among the various disciplines implicated are necessary for overall success of this emerging model of care. However, little research currently exists to support their claims. An examination of the effects of educational, training, and profession experiences as well as clinic structure, provider type, and type of health organization on level of integrated practice was performed by this author. Providers (n=203) working collaboratively in primary care (PCPs=118, BHPs=85) were administered a survey constructed by this author based on expert theory and limited past research. Participants included family medicine, internal medicine, pediatric, and obstetric/gynecologic physicians, nurse practitioners, and physician assistants as well as psychologists, social workers, psychiatrists, and professional counselors.

Results of a statistical multiple regression and ANCOVA analyses indicated that clinic structure (i.e., shared clinic space, shared health records, shared treatment plan, and integrated office visits) is a strong predictor of providers' integrated practice, explaining 33% of the variance. Education, training, professional experience, and provider age were found to have no statistically significant effect on integrated practice. These findings suggest that the structures and resources of primary care clinics are considerably more important to supporting behaviorally integrated primary care practice than are educational, training, and professional experience factors. Therefore, it appears that policy makers and administrators tasked with producing effective integrated primary care practitioners in an era of Patient-Center Medical Home (PCMH) transformation would do well to prioritize resources toward clinic structure improvements over education and training factors. However, given the exploratory nature of this research, additional research is needed to confirm and expand upon these findings.

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*THE EFFECTS OF EDUCATION AND TRAINING EXPERIENCES ON PRIMARY CARE AND
BEHAVIORAL HEALTH PROVIDERS' PRACTICE IN INTEGRATED PRIMARY CARE*

A DISSERTATION

SUBMITTED TO THE FACULTY

OF

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Abstract

Patients in primary care clinics frequently present with behavioral health related concerns, but for various reasons often fail to receive effective treatment for these problems. The integration of behavioral health providers within primary care practice has been receiving an increasing amount of research, policy, and funding support as the most appropriate way to address this health care problem. Experts in the field have suggested that specific education and training as well as a shift in professional cultures and attitudes regarding integrated primary care among the various disciplines implicated are necessary for overall success of this emerging model of care. However, little research currently exists to support their claims. An examination of the effects of educational, training, and profession experiences as well as clinic structure, provider type, and type of health organization on level of integrated practice was performed by this author. Providers (n=203) working collaboratively in primary care (PCPs=118, BHPs=85) were administered a survey constructed by this author based on expert theory and limited past research. Participants included family medicine, internal medicine, pediatric, and obstetric/gynecologic physicians, nurse practitioners, and physician assistants as well as psychologists, social workers, psychiatrists, and professional counselors.

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Keywords: primary care psychology, behavioral health integration, primary care providers, interprofessional education.

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Introduction

Collaborative and team-based treatment models have become some of the most discussed and debated health care concepts in recent years. Efforts to better coordinate care have champions among those in quality improvement, administration, and direct service provision. Although team-based care has been a part of US healthcare for decades with instances of multi-disciplinary care teams operating in hospitals and rehabilitation facilities since the 1960s (Butt & Caplan, 2010), only recently has a broad and strong body of research literature formed establishing the benefit of healthcare teams. These studies have examined primarily work in hospital and rehabilitation settings to determine the effectiveness of teams comprised mostly of physicians, nurses, physical therapists, occupational therapists, and social workers.

Many primary care clinics have also begun to adopt team-based models of care, utilizing various health professionals to more effectively and efficiently manage complex and chronic illness. Although these teams have offered a broader array of medical support to patients with chronic health conditions, issues of healthy lifestyle behavior changes and co-occurring mental illness often remain intransigent. In response, various stakeholders in primary, behavioral, and mental health care have worked to make behavioral and mental health services more accessible to primary care patients, including placing behavioral and mental health providers (BHPs) directly into primary care teams (Nash, McKay, Vogel, & Masters, 2012).

Over the past 15 to 20 years the integration of BHPs into primary care has steadily grown with large, well-known health organizations such as the Veterans Administration (VA), Kaiser Permanente, Group Health, and Geisinger Health implementing behavioral integration of their primary health care teams (Mauer & Druss, 2010; Butler et al., 2008). Pilot projects have given way to on-going programs, resulting in an accumulating body of research (Butler et al, 2008). The initial data suggests an overall

benefit of an integrated approach with improved access to behavioral and mental health services, greater patient satisfaction, and, for some problems, superior clinical outcomes.

Despite what appears to be building empirical support for the effectiveness of behavioral and mental health in primary care settings, integrated primary care (IPC) remains the exception rather than the norm. Various factors seem to be holding back the pace of broader implementation of this new health care model. Many point to reimbursement constraints by both private and public insurers and the overall fragmentation of the U.S. healthcare system as the foremost barriers to integration efforts (Blount & Miller, 2009; Bluestein & Cubic, 2009; Bray, 1996; Garcia-Shelton, 2006; Kathol, Saravay, Lobo, & Ormel, 2006). Financial and organizational factors have challenged the efforts of healthcare workers and their patients attempting to effectively manage chronic conditions and prevent new health problems. Financial constraints due to unequal and complicated reimbursement policies of third-party payors often require organizations providing behavioral and mental health services to develop and maintain separate and isolated programs from the rest of the health care system. As well as leading to communication and coordination difficulties in the care of shared patients, some have argued that the historic and ongoing operation of behavioral and medical health in separate “silos” has led to significant professional educational, training, and cultural differences among behavioral health and medical health providers (Collins, Levis Hewson, Munger, & Wade, 2010). Such factors may produce differing perspectives between teams of medical and behavioral health providers regarding appropriate practices in the clinical management of patients, potentially impeding the successful implementation and delivery of integrated care.

In this study, I seek to develop a better understanding of the attitudes and practices of primary care and behavioral health providers in behaviorally integrated primary care (IPC) settings. Although behavioral and mental providers are increasing integrated into primary care clinics and teams, the

actual models of care used in these settings can vary significantly. Additionally, differences between the dominant training models of primary medical care and behavioral care providers might further separate these providers' perspectives of standards of care, leading to varying expectations of each other. Several prominent researchers in the field of IPC have suggested these differences are real and significant. They argue that differing education models and professional cultures have led to disparate perspectives on effective models of care, hampering truly integrated clinics and limiting access and continuity of care for primary care patients. I hypothesize that education and training experiences are related to provider attitudes and practices and that a significant difference does exist between BHPs and PCPs' understanding of appropriate practices in IPC.

Before reviewing the existing research on provider attitudes and practices in IPC, I will examine the role of primary care in the overall US health care system and why it might be well suited to address longstanding gaps in behavioral health care delivery. Practice models, the role of behavioral health, and potential barriers to successful behavioral integration will also be reviewed. Finally, I will propose a study to determine whether provider education and training affect practices related to IPC.

Review of Literature

Primary Health Care

The most common point of entry for those seeking healthcare services, primary care has long been considered the “front lines” of medicine (Schoen et al., 2006). Representatives of various disciplines of medicine, such as family practitioners, internists, pediatricians and obstetrician-gynecologists, as well as nurse practitioners and physician assistants all commonly serve as direct care providers in primary care settings. PCPs working in these outpatient clinics tend to be the first to encounter a patient's developing as well as the fully developed, but yet to be treated, illnesses. Any and every illness can and does present to a PCP—from a common cold to a complex autoimmune disorder to a devastating cancer. A PCP is most often the first detective on the scene of an individual's health concern, working with the patient to identify the presenting problem, assist in self-management of the patient's recovery, and referring to specialty health care providers if necessary.

Primary care is charged with more than just the task of treating the sick individual. No less than the promotion of the health of entire populations of individuals is expected of the successful primary care clinic and their providers. The late, prominent primary care researcher Barbara Starfield (Starfield, 1998) eloquently and comprehensively defined primary care:

Primary care is an approach that forms the basis for and determines the work of all other levels of health systems...addresses the most common problems in the community by providing preventative, curative, and rehabilitative services to maximize health and wellbeing. It integrates care when there is more than one health problem and deals with the context in which illness exists and influences the responses of people to their health problems. It is care that organizes and rationalizes the deployment of all resources, basic as well as specialized, directed at promoting, maintaining, and improving health. (p. 9)

Dr. Starfield has described a health promotion, illness prevention, and coordination of care approach known as population-based care. A population-based care model takes into account available resources, functional gains, and long-term health of patients when selecting diagnostics, interventions, and referrals to manage patients' health concerns and is generally considered the hallmark attribute of primary care. This can be contrasted with specialty care, which primarily focuses on each individual and a specific, identified problem they present with for a discrete episode or short-term course of care. Cardiology, endocrinology, and ophthalmology are all examples of specialty medical care, utilizing state of the art technologies to deliver targeted care generally for acute health conditions.

Both primary and specialty care are necessary for a comprehensive healthcare system that utilizes the most effective techniques and technologies to achieve the best outcomes for both populations and individuals. However, specialty care tends to require significantly more capital and labor to deliver than primary care (Starfield, 1998). As such, these services often prove less accessible to those with fewer financial resources. Also the number of specialty providers in developing nations, and particularly the US, has been steadily increasing relative to those practicing in primary care over the past half century (Bodenheimer & Pham, 2010). In the past couple of decades this care imbalance has reached a point where there is now a shortage of primary care services for as many as 65 million Americans. Many health researchers blame this shortage of health promotion care, relative to disease intervention services, as a major factor in what appears to be an increasingly sicker nation (National Center for Chronic Disease Prevention and Health Promotion, 2010).

In an attempt to address this basic health service shortage problem as well as control ballooning health care costs, the recent legislative efforts of the White House and the US Congress have emphasized the importance of reinvigorating of primary care (Druss & Mauer, 2010). A central component of these initiatives is the Patient-Centered Medical Home (PCMH), a model of care that

seeks to increase access and coordination of primary care health services to better meet the needs of patients and their families (Berenson, Devers, & Burton, 2011). Other key components of the PCMH include a team-based approach to care, use of evidenced-based practices, use of health information technology, and care quality measures that track clinical outcomes and financially incentivize PCPs who provide more effective care. In addition to increasing the overall access and quality of care, many researchers and policy makers believe such an approach will ultimately reduce overall costs by more effectively managing those patients with chronic health conditions (e.g., diabetes, hypertension, etc.). Such patients, who often experience limited access to primary care services and thus receive more intensive care in emergency departments and hospitals due to the inevitable acute illness episodes, have historically been the most expensive to the health care system as a whole. In fact, 10% of patients overall account for 64% of health care costs, with those with chronic illness accounting for 75% of costs (National Center for Chronic Disease Prevention and Health Promotion, 2009; Orszag & Emanuel, 2010).

Although little rigorously gathered data yet exists that fully establishes specific PCMH models' ability to improve outcomes and cost effectiveness, research regarding the overall system effectiveness of primary care (vs. specialty care; Friedberg, Hussey, & Schneider, 2010)) as well as various components of the PCMH (Agency for Healthcare Research and Quality, 2011) have shown positive results. Among those components producing improved outcomes is the team-based approach that utilizes various types of providers (e.g., physicians, nurse practitioners, physician assistants, etc.), allied health professionals (e.g., registered nurses, pharmacists, behavioral health, etc.), and support staff (e.g., medical assistants, case managers, etc.) all within the primary care setting. By employing all primary care workers to deliver coordinated care in a comprehensive manner, especially for those patients with chronic health conditions, care can move beyond discrete medical office visits to on-

going health indicator monitoring, medication regimen adherence support, and enhanced coordination with specialty care. Also integral to this team-based and collaborative approach is the ability to better address patient behavior change necessary for improved self-management of mental and medical conditions. Indeed, behavioral and mental health concerns have long been recognized as present in primary care settings, but only more recently accepted as requiring a concerted and targeted effort in order to achieve effective care.

Behavioral Health Problems in Primary Care

In addition to the broad array of presenting medical illness, PCPs regularly find themselves on the receiving end of requests for behavioral and mental health care as well (hereafter referred to together as behavioral health). Many if not most primary care office visits include a behavioral component, which often involve diagnosable mental illnesses. Only half of the 28% of Americans a year suffering from a psychiatric disorder receive care, and only half again get their treatment at specialty behavioral health clinics (Regier et al., 1993). But 80% of Americans see a PCP in any given year (Strosahl, 1998). This suggests that patients with a mental illness are more likely to seek out a PCP for care rather than a behavioral health specialist. The fact that 67% of psychotropic medications are prescribed by PCPs (James & O'Donohue, 2009) adds further evidence to the leading role that primary care plays in behavioral health treatment today.

As well as the more common mental illnesses such as depression and anxiety, behavioral problems often present in unusual or particularly challenging forms in the primary care setting. Current research suggests that 8% of primary care patients suffer from medically unexplained symptoms that are thought to originate from psychosocial stressors (Jackson & Kroenke, 2008). Patients experiencing somatization have higher rates of health service utilization, are more likely to be labeled as “difficult” by their PCPs, and suffer greater incidence of comorbid mental disorders than research control groups.

Despite receiving little help from medications or other conventional medical treatments, these patients continue to turn to help from primary care often leaving the well-intentioned PCP frustrated.

Other behavioral concerns often do not reach the severity of a diagnosable disorder, yet adversely affect overall health and frequently become of focus of attention in primary care office visits (Robinson & Reiter, 2007). Marital conflict, life transition adjustments, domestic violence, and other psychosocial issues often overwhelm PCPs as they struggle to use their scarce time and resources to manage and refer these problems appropriately. Unhealthy lifestyle behaviors such as smoking, poor diet, and alcohol and drug abuse, identified as leading public health problems (Koh, 2010), also must all too often become the primary target of a PCPs' clinical attention.

Behavioral factors also become a component of many medical conditions, especially those of a chronic nature. Chronic medical problems such as diabetes, obesity, and hyperlipidemia are the fastest growing group of problems presenting at primary care clinics (Patterson, Peek, Heinrich, Bischoff, & Scherger, 2002) and the management of such long-term conditions requires lifestyle changes as well as ongoing self-management practices to maintain stability. Yet up to 60% of patients with these problems fail to adhere to treatment recommendations (Dunbar-Jacob & Mortimer-Stephens, 2001). PCPs have become the de facto lifestyle counselor of such patients, regularly admonishing them toward healthier living with the fleeting minutes they have available to them after addressing presenting concerns, lab results, and medication management.

Facing such a wide range of people and problems poses quite a challenge to PCPs who seek to provide quality care to their patients. But this dynamic of broad inclusiveness of care inherent to primary care also gives rise to great possibility. Would a significant increase in the provision of primary care services be able to address the problem of high levels of untreated and under-treated behaviorally-related problems in the U.S.? With the passage of the Patient Protection and Affordable Care Act

(ACA) in March of 2010, the product of recent health care reform legislative efforts, it is expected that 32 million newly insured patients will be seeking out a PCP by the end of 2014 (Adashi, Geiger, & Fine, 2010). Additionally, \$47.6 million have been set aside to expand primary care training programs and \$12.5 billion to grow community health centers across the nation. Advocates of this legislation are hoping that more Americans receiving primary care services will lead to a healthier population and ultimately overall lower healthcare costs. The ACA also places an emphasis on prevention and health promotion with the formation of a new national council and fund an array of community resources to support such efforts (Koh, 2010).

However, primary care, as it is currently structured, often struggles greatly to effectively manage behavioral problems. Several organizational and cultural factors appear to be working against PCPs efforts toward better behavioral care. To begin, PCPs hear an average of three health concerns from a patient in each 10 to 15 minute office visit (Kaplan, Gandek, Greenfield, Rogers, & Ware, 1995). This inevitably requires prioritization of care and often deferment of behavioral health concerns. In addition, PCPs often lack training to effectively diagnosis and treat behavioral conditions (Grenier, Chomienne, Gaboury, Ritchie, & Hogg, 2008; Head et al., 2008; Henke et al., 2008). Considering the dearth of time and training, referral of behavioral problems to a behavioral health specialist in the community would appear to be the best practice for PCPs in such clinical situations. Unfortunately, patients all too often fail to follow up with behavioral health referrals, further hindering their PCPs' efforts. A large-scale pediatric study (Rushton, Bruckman, & Kelleher, 2002) found that 39% of families presenting to their PCP with psychosocial problems and referred for services failed to see a mental healthcare provider in the 6-month period following referral. Some have suggested that low specialty mental health services utilization may be due to the heavy stigma that mental illness and services carries in our society (Corrigan, 2004). Such a strong cultural barrier may prevent PCPs from

ever getting many of their patients with behavioral concerns into specialty mental health clinics.

Finally, should a PCP manage to convince their patient with behavioral health problems to follow through with a specialist referral, they receive a frustratingly low rate of treatment feedback from the behavioral health specialist. In a study of primary care to behavioral health specialty referral (Yuen, Gerdes, & Waldfogel, 1999) PCPs reported that approximately 50% of the mental health providers to whom they referred their patients “never/seldom” reported information back to them. This lack of communication leaves PCPs wondering whether or not their referred patients actually received the healthcare they need and how best to manage the patient's concerns during the next primary care office visit.

Integration of Behavioral Health in Primary Care

Although those with behavioral health concerns are more likely to present for care in primary rather than specialty behavioral health care settings, PCPs appear to lack the resources and support to adequately manage such problems. This dilemma has not missed the attention of prominent health governing bodies and research groups. In 2002 U.S. President George W. Bush commissioned a task force to study behavioral health services in the U.S. and provide recommendations (President's New Freedom Commission on Mental Health, 2003) for areas of improvement. One of the main directives resulting from this commission is for a higher level of coordination between primary care and behavioral health services. That commission built upon an earlier declaration from the U.S. Surgeon General's office (US Department of Health and Human Services, 1999): “The fundamental components of effective service delivery...include integrated community-based services, continuity of providers and treatments” (Ch. 8, “Ensure the Supply of Mental Health Services and Providers”).

The ACA contains multiple provisions to begin implementing the coordination of primary care and behavioral health services (Substance Abuse and Mental Health Services Administration, 2011).

Grants to community health centers with medical home programs that integrate behavioral health services, administrative support for large scale changes in Medicaid and Medicare services based on the integrated models demonstrated to be effective, and funding for primary care programs targeting the screening and behavioral interventions to prevent or encourage better self-management of chronic health conditions communicate a governmental priority of achieving greater integration of behavioral services in US primary care settings (Department of Health and Human Services, 2011; Druss & Mauer, 2010). Head of the Substance Abuse and Mental Health Services Administration (Substance Abuse and Mental Health Services Administration, 2011), Pamela S. Hyde, explained succinctly the rationale of these new policy efforts.

By bringing together behavioral health and primary care where people enter health care services, [US Health Departments] are bringing federal resources to bear on improving the overall health status of individuals with multiple chronic conditions...All too often people with behavioral health problems suffer from premature morbidity and mortality as a result of poor diet, lack of exercise and primary prevention services (para. 10).

The call to integration of primary care and behavioral health services has been answered by some notable healthcare organizations (Butler et al., 2008). The Veterans Administration (VA) health system has integrated behavioral services among many of their medical sites, placing an emphasis on depression and post-traumatic stress (PTSD) management. Some well-known managed care companies such as Kaiser Permanente, Intermountain Health, and Group Health also staff many of their primary care teams with behavioral health specialists. And many community health centers (CHCs), clinics dedicated to providing care to under-served patient populations, have adopted treatment models that include significant collaboration of medical and behavioral primary providers (Mauer & Druss, 2010; Butler et al., 2008).

It is important to note that existing programs vary in the manner by which behavioral health services are brought into their primary care clinics (Robinson & Reiter, 2007). Some clinics choose to organize their staff into treatment teams that include a medical provider, behavioral provider, nurses, and care coordinator who share a panel of patients, whereas other programs might utilize behavioral health providers only for consultation on an as needed basis to any PCP requesting assistance in the management of their patients. And still others may simply invite behavioral health providers to practice independently within their clinic building to facilitate referrals, but have little structured medical-behavioral collaboration procedures in place. Such differences can confuse those attempting to understand how behavioral integration operates and might improve patient care (Doherty, McDaniel, & Baird, 1996).

Alexander Blount (2003), a prominent advocate of primary care behavioral health integration, suggested categorizing models of IPC as *coordinated*, *co-located*, or *integrated*. He emphasizes that although significant differences in delivery of care do exist among his proposed model types, “the precise definition of these descriptions would be that they are dimensions of collaborative care, not mutually exclusive categories” (p. 122). Coordinated services usually occur when a patient receives a referral from one organization to obtain care at another and information about care in both organizations is routinely shared between providers. Blount points out that practice differences between coordinating agencies such as approaches to confidentiality, frequency of treatment, and promptness of communication may cause significant difficulty and stressors on coordination efforts. As such, major programs based on coordinated services often struggle and fail.

In co-located models medical and behavioral providers share clinic or office suite space and a common patient waiting area. Communication and procedural differences become less problematic as greater proximity and the resulting increase of contact frequency tend to facilitate more effective

collaboration. Blount (2003) noted that the vast majority of consultations between providers in a co-located model are unscheduled and usually last fewer than five minutes. Such frequent and informal sharing of information tends to better inform PCPs of what BHPs can offer their patients and acculturates BHPs to the treatment structure and pace of primary care. Yet some problems persist in such a model, the most prominent of which might be patient referral follow-up. Although the co-located PCP and BHP may have more frequent contact, the availability of a BHP for introduction to a patient immediately upon referral from the PCP will often be lacking. Such a referral introduction, known as a “warm hand-off”, has shown to significantly improve otherwise poor behavioral health referral follow-up rates.

Blount's (2003) final category of integrated care is structured by the delivery of a single, mutually agreed upon treatment plan for each patient by a multi-disciplinary team. At times multiple providers will see the patient (and sometimes their family as well) simultaneously to improve continuity of care. This method of intervention often resolves the previously cited referral follow-up problems. Treatment teams have frequently employed this approach along with pre-arranged protocols that manage the care of certain patient populations with particularly difficult to manage illnesses. Integrated care has been employed to address chronic health problems in which behavioral aspects are viewed as integral, such as depression or diabetes.

Along with efforts to better organize practice models, recent research to assess the effectiveness of IPC offers further understanding of these approaches. In a meta-analytic study, Butler et al. (2008) reviewed the previously performed research on the implementation and outcome results of various models of care, integrating primary care with specialty behavioral health services. Programs addressing a variety of medical and behavioral health as well as substance abuse problems were included in the review. Analyzing 38 head-to-head trials, better results were indeed found to be associated with

integrated approaches. In particular, clinics targeting depression produced the greatest outcome improvements through behavioral integration.

However, Butler et al. (2008) could not determine whether the better outcomes could be attributed specifically to integrated care or simply a more systematic, evidenced-based approach to behavioral care, which occurred more frequently in integrated than conventional primary care clinics. In addition, these researchers found no relationship between the level of behavioral integration (e.g., co-located, coordinated, etc.) in each model and the degree of outcome improvement. But they suggested that future research should more specifically parse the attributes of each model to more accurately identify differences and similarities to confirm this finding. Despite the lack of definitive findings on improvement attribution, Butler and colleagues concluded that including behavioral services in primary care effectively provides needed services to a variety of populations and should continue to be pursued as the standard of care.

Much of the current research performed and theory written regarding behavioral integration in primary care looks at the role of psychologists in this model of care. This likely reflects the fact that psychologists have had a significant and growing presence in the medical field for nearly a half century. The most recent available estimate places the number of psychologists as full-time faculty at U.S. and Canadian medical schools at over 4,000 (Tovian, Rozensky, & Sweet, 2003). In addition, among non-prescribing behavioral health providers, only psychologists and clinical social workers are reimbursed for behavioral health services by Medicare (U.S. DHHS, Health Services Resources Administration, 2003), the largest health insurance program in the U.S. (APA Practice Organization, 2006). And some have argued that the broad diagnostic, treatment, and research skill set standard to doctoral training programs in psychology prepares psychologists particularly well, relative to other behavioral health providers, to practice in both general medical as well as primary care settings

(Chaffee, 2009; Tovian et al., 2003).

Despite the dominance of psychologists in the research of IPC and arguments for their clinical skills, outcome research in behaviorally integrated models has not shown a significant difference between the providers of various behavioral health disciplines (e.g., psychiatrists, nurses, psychologists, social workers, etc.; Butler et al., 2008; Chaffee, 2009). These results suggest that future research should examine broad selections of behavioral health providers to better understand the relative roles and strengths various disciplines might serve in the future of primary care. As such, this study seeks to include participants from a wide variety of behavioral health disciplines in its sample.

Barriers to Successful Integration

After considering the high frequency with which behavioral health problems present at primary care settings, the difficulty PCPs experience in attempting to manage them, and the support from research and policy-making groups for behavioral integration, someone unfamiliar with the standard of primary care in the U.S. might assume at least one BHP providing integrated care is placed in at least most primary care clinics in the nation. Unfortunately, outside of the VA health system (Wray, Szymanski, Kearney, & McCarthy, 2012), this does not appear to be the case as the repeated calls for increased integration continue (Mauer, 2009; Collins, Levis Hewson, Munger, & Wade, 2010; Koh, 2010; DHHS, 2011; SAMHSA, 2011). Although integrative primary care seems to be a logical solution to a widespread issue of unmet healthcare needs, this approach remains the exception rather than the rule. But, as in many other system-level changes, the failure of widespread primary care behavioral integration is more likely multi-causal rather than the fault of any one factor and various explanations for the current state have been offered.

Financial and Health System Barriers to Integration. Some experts in the field have blamed the organizational and financial fragmentation of the US health system calling it a “patchwork of

poorly coordinated systems” (Garcia-Shelton, 2006, p. 676). This “patchwork” includes various private and public care delivery systems as well as third-party payors with limited consistency and direction from independent oversight. This chaos often discourages the valuing of long-term health outcomes among many of the more powerful stakeholders of the system (i.e., insurance companies and private healthcare networks). Patients/policy holders with more expensive health care needs (e.g., sufferers of chronic conditions) can be denied initial coverage, denied coverage after a particular payout limit, expected to become another insurance company's responsibility due employment change or loss, and/or eventually become the government's responsibility via poverty, disability, or retirement (e.g., Medicaid and Medicare). Therefore, little incentive currently exists for most private health insurers to place significant resources in preventive or chronic disease care. Long-term health improvement and maintenance, with its subsequent long-term cost-containment, is of little consequence to these private health insurers. As a result many with chronic behavioral health conditions and medical conditions that require significant behavioral management struggle to receive adequate services (Kathol et al., 2006).

Other rather specific and mundane seeming components of third-party reimbursement of services have been identified as serious barriers to integrating behavioral services into primary care. One frequently cited challenge to the provision of integrated care is the restriction by many payors of reimbursing services from multiple providers in the same organization for the same patient on the same day (Mauch, Kautz, Smith, & Center for Mental Health Services, 2008). Such a restriction impedes BHPs from delivering integrated visits or visits scheduled on the same day as a PCP visit, a hallmark component of IPC that greatly increases patient access to services. Another key characteristic of IPC is consultation of the PCP with the BHP to assist in management of their patient panel. However, payors generally do not cover the provision of these consultation and collaborative services from one provider to another, presenting yet another financial barrier hindering the integration behavioral services into

primary care settings.

Educational and Cultural Barriers to Integration. Provider factors may be equally culpable for the slow pace of integrated care implementation as the more frequently cited and easily recognizable organizational and financial factors. Although payment restrictions certainly limit the provision of services, provider resistance to practice in innovative models such as IPC may preclude the services from being delivered at all. Blount (2009) noted there are few doctorate-level psychology programs that provide a full training experience in IPC leading to a sense of separation from medical health care and engendering a sense of competition within psychology education circles toward physicians. Collins, Hewson, Munger, and Wade (2010) identified the provider-related impediments to integration as “significant cultural barriers” (p. 48) resulting from “behavioral and physical health providers [having] long operated in their separate silos” (p.4). In particular, Collins et al. cited poor communication and information sharing between behavioral and medical providers regarding shared patients as a consequent problem from on-going discipline separation. Although these arguments seem plausible explanations for the slow implementation of IPC, a review of actual studies examining medical and behavioral providers’ attitudes and resulting practices regarding collaboration and integration with each other has yet to be performed. This study seeks to organize and expand upon such research.

Medical and Behavioral Health Provider Attitudes and Practices for Collaborative Care

Given the literature suggesting that conflicting medical and behavioral health provider attitudes and practices present a barrier to successful primary care integration, an examination of the relevant research literature appears warranted to assess the potential hindrances and related factors. Studies of the attitudes and practices of medical and behavioral health providers regarding collaboration with each other in general will be reviewed before investigating the research of attitudes of those PCPs and BHPs

practicing in IPC settings.

Medical provider attitudes regarding collaboration with behavioral health providers. In the wake of the formation of APA Division 38 (Health Psychology) and the rapid growth of clinical psychology in medical settings, Schenkenberg, Peterson, Wood, and DaBell (1981) conducted a study of physicians' perceptions of psychologists practicing in medical settings. Their survey of a group of VA hospital physicians (n=79) revealed an overall support for the expansion of psychological services in medical settings (83.5%, strong or moderate agreement) and belief that psychological factors were important in medical treatment (93.7%). When eliciting the physicians' expectations of psychologists in this hospital via constructed response, Scheckenberg et al. found in order of decreasing frequency “knowledge, modest background in medical illness and medical systems, verbal and written communication skills, testing skills, knowledge of available psychological programs in the community, and diagnostic acumen” mentioned as important professional qualifications in a psychologists in this setting (p. 315). Additionally, availability, promptness of reply, and a willingness to see patients on short notice were seen by physicians as important practice factors of psychologists practicing in medical settings.

More recently, Kainz (2002) examined physicians' desires and concerns in collaborating with psychologists in two multi-specialty outpatient practices that included psychologists on staff. She used both focus group and survey methods in an effort to better understand potential barriers and enhancements to physician-psychologist collaboration. In order to better understand the connection between physician behavior and perceptions, she separated the focus group participants into categories of either high (n= 8) or low referrers (n= 9) of psychological services. The survey included items requesting physicians (n= 85) to identify the degree they viewed certain medical conditions as benefiting from psychological care, how frequently they refer for certain behavioral conditions to

psychologists, and how important they viewed various factors when deciding whether to refer their patients to psychologists.

Kainz (2002) discovered that physicians felt most satisfied with psychological services when the quality of the professional relationship with psychologists was strong, psychological services were covered by their patients' insurance, their patients could be seen quickly, a summary of treatment was provided to the physician, short-term and behaviorally-focused therapies were provided, and the psychologists possessed the ability to treat children and adolescents. Most physicians in this study generally viewed psychological treatments as scientifically valid and useful for identifiable health conditions. Those seen as benefiting most from psychological interventions included fibromyalgia, cancer, and infertility, whereas those seen as benefiting least included hypertension, dermatitis, and carpal tunnel. The behavioral conditions ranked as most likely to be referred to psychologists were depression, anxiety, and chemical dependency and those as least likely were urinary stress incontinence, premenstrual syndrome, and obesity.

Grenier, Chomienne, Gaboury, Ritchie, and Hogg (2008) studied PCPs specifically, surveying 118 family physicians practicing in non-behaviorally integrated clinics in Ontario, Canada. They found these PCPs to also highly value treatment feedback from behavioral health providers and greater accessibility to psychological treatment. The participating PCPs in this study perceived their own level of training in treating mental illnesses to be insufficient and endorsed the belief that “the integration of psychologists into primary care would improve the quality of services” (p. 232). Additionally, PCPs in this study identified patient financial constraints, lack of knowledge regarding availability of psychologists, and scarcity of psychological services in the community as major barriers to obtaining services for their patients.

Although admittedly limited, these studies suggest that medical providers desire greater access

to behavioral health services for their patients and believe that the inclusion of BHPs into medical practices might provide improved care. This research also seems to indicate that when working closely with BHPs, medical providers generally value the services provided by them and view these services as appropriate for a variety of presenting problems. Findings of studies specific to PCPs were consistent overall in their major findings with those looking at medical providers in general.

BHPs attitudes regarding collaboration with medical providers. As limited in scope and few in number as the studies of PCP attitudes of behavioral providers are, even less published empirical research currently exists looking at BHPs' attitudes and practices regarding collaboration with medical providers and medical care. Gavin and colleagues (1998) surveyed 47 PCPs and 37 BHPs practicing in non-integrated, physically separate clinics belonging to a single HMO. Administering an adapted version of the Physician Belief Scale, a measure of physician beliefs about psychosocial concerns and patient care (Ashworth, Williamson, & Montano, 1984), they found that 68% of the BHPs surveyed strongly agreed with the statement "Mind and body influence medical disease and body perception." Additionally, those BHPs whose pre-qualification training programs emphasized collaboration with medical providers, and who perceived that the organization where they currently practice expected them to collaborate, tended to do so more frequently and with greater reported ease.

However, Gavin et al. (1998) also found that, although they professed a greater adherence to a biopsychosocial approach than their more senior counterparts, younger BHPs reported collaboration with medical providers as more difficult and less useful. Gavin and colleagues suggested that this finding might indicate that younger BHPs lack the confidence to interact with medical providers comfortably, but will feel differently with increased experience. They concluded that collaboration overall would be greatly enhanced if healthcare organizations simply provided increased opportunities for interdisciplinary contact, implemented shared charting systems, and made available contact lists of

providers, all attributes common to most IPC settings.

Seeking to identify factors that affect the psychologists' attitudes and practices regarding collaboration with PCPs, Eberhardt De Master (2011) surveyed clinical psychologists (n = 104) from varying practice settings and areas of expertise. Results of a measure constructed and administered designed to assess psychologist's openness to collaborating with PCPs suggested a generally supportive attitude toward collaboration with PCPs among psychologists. This finding held true even when accounting for participants' amount of education, clinical training, and practice experience in medical settings as well as their identified theoretical orientation. However, Eberhardt De Master did find differences in reported practices. Those study participants who reported more training and professional experiences in medical settings also endorsed engaging in on-going collaborative care more frequently with primary care providers. Also, those completing graduate coursework directly related to practice in medical settings reported obtaining and reviewing their clients' medical records more frequently.

These two studies of behavioral and mental health providers who practice in non-integrated settings appear to indicate that those behavioral and mental health providers with more training and practice experience in medical settings or interacting with medical professionals tend to engage in collaborative care more frequently and value that practice as a part of quality patient/client care. However, it seems BHPs hold generally positive attitudes toward collaboration with PCPs regardless of education, experience, or actual practice. These results suggest that attitudes and professional culture likely do not affect BHPs collaboration with PCPs, but that education and experience may.

Provider Attitudes and Practices in Integrated Primary Care

As the above research suggests, medical and behavioral health providers appear to be generally supportive of collaborating in the care of their patients. Although some differences exist regarding particular care practices, there seems to be an overall mutual respect and desire to increase access of the

other's services for their patients. The bulk of this research has been performed on providers practicing in conventional outpatient, co-located, or in-patient medical settings with more questions remaining of how PCPs and BHPs view practicing together in the IPC settings. The current body of research in this area is small but appears to be growing.

In an effort to better understand collaborative relationships between PCPs and mental health providers (MHPs), Gerdes, Yuen, Wood, and Frey (2001) studied 175 PCPs in a Pennsylvania healthcare network. Some PCPs were HMO (health management organization) staff employees regularly working alongside staff MHPs, whereas the others were simply contracted as network providers with few having co-located MHPs in their clinics. Using surveys administered to both PCPs and clinic directors, Gerdes et al. found the number of days MHPs were on-site to be positively associated with relationship quality and collaboration frequency with PCPs. Additionally, results of the study showed no relationship between density of MHPs in the community (presumably equivalent to mental health service accessibility) and relationship quality. Not surprisingly then, the HMO PCPs reported a stronger collaboration with MHPs than did the contracted providers. Gerdes et al. concluded that a “culturally cohesive organizational system” (p. 441) was vital in developing effective behavioral/mental health integration in primary care.

Westheimer, Steinly-Bumgarner, and Brownson (2008) surveyed and interviewed 10 PCPs' regarding their perceptions of and experiences with practicing in a university health clinic operating from a behavioral integration model. This *Integrated Healthcare Program* (IHP) partnered the university medical clinics with two psychologists and two social workers from the university's counseling center. The behavioral providers held scheduled appointments upon referral from PCPs and were also available for immediate consultation as requested by the PCPs. Westheimer et al. found that PCPs viewed many conditions traditionally viewed as medical (e.g., headaches, irritable bowel

syndrome, back pain, etc.) as benefiting from behavioral care. However, the PCPs also identified their frequency of behavioral health referrals of such problems as relatively low. Such results suggest a perceived greater importance by PCPs placed on behavioral care for any traditionally behavioral health conditions (e.g., depression, anxiety, etc.) over “medical” conditions with behavioral components. Although not surprising, these findings identify a potentially common view PCPs have regarding the usefulness of behavioral professionals in medical settings that could be hampering the successful implementation of behavioral health integration.

Garfunkel, Pisani, leRoux, Phil, and Siegel (2011) compared pediatric medical residents training in two pediatric primary care clinics, one clinic operating from a behavioral health integration model and the other a conventional referral-based model. When following up with these residents (n = 174) up to 10 years post-graduation, those in the integrated clinic were more likely to report feeling prepared to collaborate as well as actually engaging in consultation, joint treatment, and collaborative care with BHPs. This study appears to provide support for interprofessional training experiences as means to prepare health professionals, particularly physicians, for practicing within integrated and team-based health care models.

In one of the few published efforts collecting data comparing both PCP and BHP attitudes and practices in IPC, Funderburk et al. (2010) surveyed the providers at five primary care clinics part of the Veterans Affairs (VA) system in New York state during the period between January 2006 to November 2006 in order to evaluate the implementation of an integrated care model. 46 PCPs and 12 BHPs completed questionnaires regarding practice of working with, access to, and communication with each other. The sample of PCPs included 31 medical doctors (MDs), nine nurse practitioners (NPs), and six physician assistants (PAs) with the sample of BHPs consisting of four psychiatrists (MDs), five psychologists (PhD), two nurse practitioners (NP), and one social worker (MSW). The questionnaires

administered to the PCPs and BHPs were rated for level of agreement on a scale ranging from 1 (“Not at all”) to 9 (“Completely”). Adjustments to wording and nine additional items were included in the questionnaire given to BHPs from the PCP version of the questionnaire in an effort to better assess adherence to primary care practice specific to BHPs (e.g., “I may set up infrequent visits with a patient, that continue over time, to help reduce unnecessary medical utilization”). Open-ended, constructed response questionnaires were also administered to both PCPs and BHPs containing similar provider type-specific qualitative-response questions such as, “How have the PCPs responded to your presence in the clinic?”

Funderburk and colleagues (2010) found, overall, both PCPs and BHPs endorsed a positive response regarding their collaboration in the areas of same-day communication about shared patients (7.15/6.57 out of 9), integrated treatment plans (7.36/6.33), and BHPs viewed as “core” members of primary care team (7.30/6.73). Also, PCPs saw few significant barriers to accessing BHPs (3.43). However, PCPs endorsed significantly greater agreement with the statements that patients were co-managed with BHP (7.04 vs. 5.82), behavioral health data was incorporated into patient staffing meetings (6.62 vs. 5.08), and wait times for BHP appointments were one week or less (6.19 vs. 4.67).

Several other particularly striking findings emerged from this study regarding the use of BHP services in primary care. A significant difference was found between the level of which prescribing and non-prescribing BHPs rated the frequency that PCPs sought out curbside consultations with them (8.00 vs. 6.17). A similar difference was found between prescribing and non-prescribing BHPs in PCP referrals for concerns regarding medications such as regimen adherence (7.17 vs. 4.60). Finally, similar to the results of Westheimer et al. (2010), Funderburk et al. (2010) found that both PCPs and BHPs reported low rates of referral for behavioral health interventions for chronic medical illness management (4.17/5.36) and healthy lifestyle changes (5.93/6.00).

From this data Funderburk and colleagues (2010) concluded that, overall, PCPs and BHPs both endorsed high levels of collaboration and positive attitudes toward the role of behavioral health services in the primary care team. However, BHPs showed a trend of perceiving the integration of treatment planning and co-management of patients as occurring less often as or to a lesser degree than do PCPs. Funderburk et al. hypothesized that this may be due to divergent expectations of PCPs and BHPs regarding dedication of time to treatment planning and management. Given BHP interventions traditionally span 30 to 50 minutes, whereas PCP typically utilize 15 to 20 minute office visits, it may then follow that BHPs are professionally acculturated to expect more time to provide services as well as engage in consultation and staffing of patients than do PCPs. Additionally, PCPs appeared to be underutilizing BHPs for behavioral concerns related to chronic medical conditions such a medication adherence and lifestyle changes, a valuable service in IPC settings. Funderburk et al. understood this finding to likely result from a combination of PCPs historically referring to community BHPs almost solely patients with mental illness as well as BHPs greater comfort in working with those with primary mental illness diagnoses.

Among the limitations identified in their study, Funderburk et al (2010) noted they only collected data from providers in VA clinics, potentially hampering the generalizability of their results to primary care clinics in other health systems. Additionally, they admitted that the approximately one year existence and period of data collection from this integrated program may not have allowed for detecting differences of amount of experience working within the model. Additionally, they did not account for past experience or training for practice in IPC settings in their measures. From these identified study limitations, authors suggested future research examine providers in integrated clinics beyond those part of the VA system, that have used an integrated model for an extended period of time, and take into account experience and education of providers.

Summary and Study Hypotheses

Recent research has highlighted the need for more effective models of behavioral care to address the growing issues of care access, effective utilization, and health condition chronicity (Regier et al., 1993; Koh, 2010). Primary care appears to be ideally positioned to address many of the problems plaguing traditional behavioral health care (Strosahl, 1998; James & O'Donohue, 2009). Indeed, studies performed thus far on clinics and organizations implementing various models that integrate behavioral care into primary care settings have produced promising findings (Butler et al., 2008; Funderburk et al., 2010). However, despite relatively strong empirical support and rallying calls by many prominent figures and organizations in healthcare, IPC remains under-utilized by health care systems (Mauer, 2009; Collins, Levis Hewson, Munger, & Wade, 2010; Koh, 2010; DHHS, 2011; SAMHSA, 2011).

In attempting to explain this state of affairs, most behavioral health researchers have bemoaned the financial constraints of shortsighted third-party payor systems and the resulting fragmentation of U.S. healthcare in general (Blount & Miller, 2009; Bluestein & Cubic, 2009; Bray, 1996; Garcia-Shelton, 2006; Kathol, Saravay, Lobo, & Ormel, 2006). But others have suggested that clinician factors may also play a significant role in the slow pace of behavioral integration into primary care (Blount, 2009; Collins, Hewson, Munger, & Wade, 2010). Various studies have examined medical providers or behavioral health providers' collaborative attitudes and practices with each other finding a general openness to collaboration among both medical (Kainz, 2002; Grenier, Chomienne, Gaboury, Ritchie, & Hogg, 2008; Gavin et al., 1998; Gerdes, Yuen, Wood, & Frey, 2001; Westheimer, Steinly-Bumgarner, & Brownson, 2008; Garfunkel, Pisani, leRoux, Phil, & Siegel, 2011;) and behavioral health (Gavin et al., 1998; Funderburk et al., 2010; Eberhardt De Master, 2011) providers, but varying actual collaborative practices (Gavin et al., 1998; Eberhardt De Master, 2011; Garfunkel, Pisani, leRoux, Phil, & Siegel, 2011) that appear to be at least somewhat based on education and training experiences. Few studies

have looked at PCPs and BHPs simultaneously (Funderburk et al., 2010) and little is known about the effect of education and experience on the providers of IPC (Gavin, et al., 1998; Garfunkel, Pisani, leRoux, Phil, & Siegel, 2011). Finally, no studies have been identified that have collected data regarding both PCP and BHP experiences in IPC in a broad cross-section of various health delivery systems across the US.

In the following described study I seek to confirm the above initial findings and theories about the provision of behavioral health services in IPC and identify what training and experience factors are associated with PCPs' and BHPs' reported practices related to integrated care. Additionally, differences in practices and perspectives of behavioral health integration in primary care between PCPs and BHPs as well as between types of systems to which their clinic belongs (e.g., VA vs. CHC vs. private) will also be examined. Using a quasi-experimental design, this study will be performed by the administration of questionnaires to BHPs and PCPs regarding their education, training, amount of practice experience, current practice setting, clinical practices, and perspectives related to the provision of behavioral health services in IPC settings. Considering the previously cited literature, the following results of this study are hypothesized:

Hypothesis 1: Participants who endorse more time in clinical training experiences in primary care settings will rate more highly items measuring integrated practices compared to those who endorse less time in clinical training experiences.

Hypothesis 2: PCPs who endorse completing more classroom courses directly relevant to practice in behavioral and mental health contexts and BHPs who endorse completing more classroom courses directly relevant to practice in medical settings will rate more highly items measuring integrated practices in comparison to PCPs and BHPs who endorse completing fewer relevant courses.

Hypothesis 3: Participants endorsing more years of licensed clinical practice in co-located,

collaborative, or integrated settings will endorse more integrative practices than those who endorsed fewer years of licensed clinical practice in co-located, collaborative, or integrated settings.

Hypothesis 4: Participants who endorse practicing in more behaviorally integrated primary care clinics will endorse more integrative practices than participants who endorse practicing in less behaviorally integrated clinics.

Hypothesis 5: PCPs will rate more highly items measuring integrated practices in comparison to BHPs.

Hypothesis 6: Providers practicing in VA settings will rate more highly items measuring integrated practices in comparison to providers practicing in HMOs, CHCs, or other health systems.

METHOD

Participants

A total of 195 Primary Care Providers (PCPs) and Behavioral Health Providers (BHPs) were recruited via convenience and snowball sampling. Emails (Appendix A) were sent to professional associations, clinic administrators, and directly to providers associated with IPC settings requesting them to participate and/or post the included hyperlink to the study survey on their respective email listservs or forward to known eligible participants. In addition, the study invitation and hyperlink was posted on several websites related to the work of primary care providers.

Eligible participants included licensed PCPs and BHPs currently practicing in the US. Additionally, PCPs eligible for this study attested to routinely referring patients for behavioral health services and interacting with their patients' BHPs. PCPs who are medical doctors (MD or DO), doctors of naturopathy (ND), nurse practitioners (NP), and physician assistants (PA) were recruited to participate. BHPs eligible for this study attested to practicing in a setting in which they provide behavioral health services to a patient/client load mostly referred to them by or collaboratively managed with PCPs. BHPs who are psychologists (PhD or PsyD), psychiatrists (MD or DO), psychiatric mental health nurse practitioners (PMHNP), professional counselors (Masters level), and social workers (LCSW/MSW) were sought out to participate. Participants were sought from various types of primary care clinics, including Veterans Affairs (VA), Health Maintenance Organizations (HMOs), Federally Qualified Health Centers (FQHCs), large private health systems, and private independent practices.

Instruments

No standardized measures of providers' practices and perspectives in IPC settings currently exist. However, as previously described, Funderburk, et al (2010) constructed questionnaires for both

PCPs and BHPs to evaluate the implementation of an integrated care model in a group of VA primary care clinics. No psychometric analysis or validation was performed on these questionnaires. Yet, given the exploratory nature of this research, these questionnaires and the data collected by Funderburk and colleagues provide valuable tools to build upon and findings comparable to the results of the present study. As such, two questionnaires, one for PCPs and one for BHPs, were constructed based on Funderburk et al.'s instruments. Various items were omitted or modified from the Funderburk et al questionnaires to achieve increased brevity and relevance to the research questions of this study. These questionnaires were administered to participating PCPs and BHPs via a web-based computer survey program.

The 28-item questionnaire for BHPs (Appendix B) used in this study included 26 forced-response items of which three items offer an alternative “other” option allowing the participant to construct a more applicable response and six items requested a whole-number response without an upper limit. The first six items inquire about basic demographic identification (e.g., age, sex, etc.) and professional experience (e.g., region, setting, years of practicing, etc.). The inclusion of items 7 through 12 regarding the nature of participants' education and training experiences are included to confirm and extend the findings of Gavin et al. (1998) that BHPs whose training emphasized collaboration with medical providers found it easier to do and did so more frequently. Blount's (2009) assertion that the absence of graduate training involving collaboration with medical providers has perpetuated attitudes of separateness and resistance to integration will also be tested in this way. Finally, data collected from these items will also examine further the findings of Eberhardt De Master (2011), who found a positive correlation between psychologists' training experience in medical settings and collaborative practices with PCPs.

Items 13 through 16 were rationally constructed (Holden & Fekken, 1990) from Blount's (2003)

signs of IPC. He argues that shared clinic space, health records, treatment plans, and shared office visits (i.e., warm hand-offs) between PCPs and BHPs are the major hallmarks of integrated clinics. These items will be used to determine the degree of integration of the clinic in which each participant practices to control for the amount of opportunities the BHP participants have to collaborate with PCPs. Items 17-24 were all taken directly from Funderburk et al. (2010). Items 25 and 26 were added in a similar form to items 17-24 to measure the level of participation in consultations or referrals from PCPs at the time of a patient medical office visit and comfort with interrupting scheduled behavioral health sessions to provide a PCP an urgent consultation or referral. Finally, items 27 and 28 were included to elicit qualitative responses from participants regarding this study's primary research question of how education and training affects providers' attitudes and practice in IPC and gather information regarding other barriers to integration not yet considered by the current research literature.

The 28-item questionnaire for PCPs (Appendix C) is similarly constructed to that administered to BHPs who participate in this study with items gathering information regarding participant demographics, education and practice experience, and current practice structure. The PCP questionnaire includes 26 forced-response items of which four items offer an alternative “other” option, allowing the participant to construct a more applicable response, and six items request a whole-number response without an upper limit. The first six items of the questionnaire inquire about basic demographic identification (e.g., age, sex, etc.) and professional experience (e.g., region, setting, years of practicing, etc.). Items 7 through 12 require the PCP participants to provide responses about the nature of their education and training experiences as well. These items were included to provide comparison data collected from BHPs, examining potential effects that education and training experiences may have on PCPs' attitudes and practices related to behavioral health services.

The PCP questionnaire also includes the four items constructed from Blount (2003) to measure

the level of integration of the clinic in which the participant practices. Items 17 through 22 were taken directly from Funderburk et al. (2010). Items 23-26 were added in a similar form to items 17-22 to measure the level of participation in BH consultations or referrals at the time of a patient medical office visit, comfort in interrupting scheduled behavioral health sessions to seek out urgent consultation or referral, and frequency of BH referrals to increase patient adherence to medical care and recommendations. Finally, items 27 and 28 are identical to the final two items in the BHP questionnaire, seeking qualitative responses from PCPs regarding their education and its effects on their practice in IPC and perceived barriers to access to behavioral health services in their clinic.

The questionnaires were piloted with a BHP and PCP working in an IPC setting to assess for participation, time duration, and comprehension. Wording and structure feedback were solicited and incorporated as appropriate.

Procedure

Recruitment of participants was performed by invitation of study participants via professional association listservs, Internet webpages, and emails forwarded from colleagues or clinic administrators, which included a hyperlink to the study survey webpage. Upon navigating to the webpage, participants were presented with a briefly stated purpose of the study, inclusion criteria, estimated time to complete, and informed consent. Participants were then given the option to freely and voluntarily agree or not agree to participate as well as identify themselves as a PCP or BHP. Participants who chose to agree were directed to the above-described, provider-appropriate questionnaire and requested to complete all items. Participants who did not agree to the informed consent or did not meet inclusion criteria were directed to a screen thanking them for their consideration of participating in the study. Upon completion of the questionnaire, participants were directed to the final screen of the study which thanked them for their participation in the study and included an email address to send a request to

obtain study findings.

Overall, participation in this study was expected to require no longer than 15 to 20 minutes of each participant's time. In an effort to ensure anonymity, no personally identifying information was requested in the informed consent or questionnaire. The study investigators were thus unable to link study responses to any particular participant name, address, license number or any other identifying information.

Analysis

This study was conducted as a quasi-experimental design. The computer software program G*Power (Faul, Erdfelder, Buchner, & Lang, 2009) was used to calculate the minimum necessary study sample size, given the proposed statistical tests, to detect a medium to large effect size. Upon completion of data collection, the study data was downloaded from SurveyMonkey.com into the computer software program Microsoft Excel to be examined for critical omissions and patterns suggesting invalid responding. These responses will be removed from the final total and data analysis. This data was then imported into the software program SPSS in order to perform statistical analysis of the final data.

Hypothesis 1. Hypothesis 1 was tested using the statistical test multiple linear regression (Mertler & Vannatta, 2005) with the amount of clinical training as the predictor variable; the amount of classroom education, the amount of licensed practice experience in integrative settings, and the level of integration of clinic as controlling variables; and the amount of integrative practices as the criterion variable. The amount of clinical training was measured by the number of months of full-time participation in clinical training placements in primary care settings (item 11). The amount of classroom education was measured by the number of classroom courses completed that are perceived by the participants to have been directly relevant to behavioral/mental health care (PCPs; item 10) or

practice in medical settings (BHPs; item 9). The amount of licensed practice experience in integrative settings was measured by the number of years endorsed by participants in which their patient/client caseload has been majority referrals from PCPs (BHPs; item 5) or regularly referred patients to behavioral/mental health care and interacted with those providers to whom they referred those patients (PCPs; item 5). The level of integration of the clinics in which the participants practice was measured on a scale of 0 to 4 and determined by four yes/no questions (items 13-16) in the study questionnaires. The amount of integrative practices was measured by participant responses to items 17-26 in the study questionnaires, which measure clinical practices related to integrated care on a total scale of 10 to 90.

Hypothesis 2. Hypothesis 2 was also tested using the statistical test multiple linear regression with the amount of classroom education as the predictor variable; the amount of clinical training, the amount of licensed practice experience in integrative settings, and the level of integration of clinic as controlling variables; and the amount of integrative practices as the criterion variable. These variables were measured as outlined above in the description of the analysis of Hypothesis 1.

Hypothesis 3. Hypothesis 3 was also tested using the statistical test multiple linear regression with the amount of licensed practice experience in integrative settings as the predictor variable; the amount of classroom education, the amount of clinical training, and the level of integration of clinic as controlling variables; and the amount of integrative practices as the criterion variable. These variables were measured as outlined above in the description of the analysis of Hypothesis 1.

Hypothesis 4. Hypothesis 4 was also tested using the statistical test multiple linear regression with the level of integration of clinic as the predictor variable; the amount of classroom education, the amount of clinical training, and the amount of licensed practice experience in integrative settings as controlling variables; and the amount of integrative practices as the criterion variable. These variables were measured as outlined above in the description of the analysis of Hypothesis 1.

Hypothesis 5. Hypothesis 5 was tested using the statistical test One-way ANCOVA (Analysis of Co-variance) with the type of provider (i.e., PCP vs. BHP) as the independent variable, level of integration of clinic as the covariate, and the amount of integrative practices as the dependent variable. The type of provider was determined by each participant's response to a pre-survey item. The integration of clinic and integrative practices were measured as outlined above in the description of the analysis of Hypothesis 1.

Hypothesis 6. Hypothesis 6 was tested using the statistical test One-way ANCOVA (Analysis of Co-variance) with the type of practice setting (i.e., VA vs. CHC vs. HMO vs. other health system) as the independent variable, the level of integration of clinic as the covariate, and the amount of integrative practices as the dependent variable. The type of practice setting was determined by each participant's response to item 6. The integration of clinic and integrative practices were measured as outlined above in the description of the analysis of Hypothesis 1.

Finally, the qualitative data resulting from constructed responses to the final two questions of both the PCP and BHP questionnaires was analyzed by a method based on the Braun and Clarke (2006) model of thematic analysis (Braun & Clarke, 2006). The goal was to identify themes related to the primary research question of what effect does education and training have on providers' practices in IPC as well as an associated research question of what barriers remain that prevent the maximally effective implementation of IPC. In order to adequately identify these themes the study investigator a) familiarized himself with the data, b) generated initial codes, c) searched for themes, d) reviewed, defined and named themes, and e) produced a summary report of the themes.

Results

Participant Characteristics

A total of 226 survey responses were collected at the time of analysis. Of the 226 survey responses, 23 were excluded from the analysis due to being incomplete, leaving a final sample size of 203 (PCP $n = 118$, BHP $n = 85$). The largest portion of respondents practiced in the West region of the US (52.7% West, 26.1% East, 11.1% Midwest, and 9.1% South). The most common PCP specialty was Family Medicine (MD/DO; 54.2%) and BHP specialty psychologist (PhD/PsyD; 60%; Table 1).

Table 1

Provider Type and Specialty of Participants

Provider	Specialty/Discipline	<i>N</i>	PCP/BHP %	Overall %
PCP				
	Family Medicine (MD/DO)	64	54.2	31.5
	Nurse Practitioner (NP)	19	16.1	9.4
	Physician Assistant (PA)	15	12.7	7.4
	Pediatrics (MD/DO)	14	11.9	6.9
	Internal Medicine (MD/DO)	10	8.5	4.9
	Naturopath (ND)	2	1.7	0.99
	Nurse Midwife (CNM)		1.7	0.99
	OBGyn (MD/DO)	1	0.8	0.5
BHP				
	Psychiatry (MD/DO)	4	4.7	1.9
	Psychology (PsyD/PhD)	51	60.0	25.1
	Social Work (MSW/LCSW)	20	23.5	9.9
	Nurse Practitioner (PMHNP)	2	2.4	0.99
	Professional Counselor/ Therapist (LPC, LMFT, LCPC, etc.)	8	9.4	3.9

Respondents were 68.5% female (PCPs 66.1%, BHPs 71.4%), 58.1% PCPs, with a mean age of 43.1 years (Table 2). The mean of respondents' years of practice in or in collaboration with primary care was 8.29, with PCPs endorsing 9.66 and BHPs 6.08. The mean amount of training experience in

primary care was 10.69 months, with PCPs reporting 15.0 months and BHPs 5.44 months. PCPs endorsed a mean of 5.6 behavioral health related graduate level courses and BHPs 3.2 courses specific to practice in medical settings.

Table 2

Demographic, training, education, and practice factors

	<u>PCPs (n = 118)</u>	<u>BHPs (n = 85)</u>	<u>Overall (n = 203)</u>
	<i>M(SD)</i>	<i>M(SD)</i>	<i>M(SD)</i>
Age	43.44(10.25)	42.1(11.10)	42.92(10.59)
Years licensed practice	12.34(9.67)	9.57(8.35)	11.28(9.23)
Years PC collaborative practice	9.66(8.97)	6.08(5.55)	8.29(7.95)
Months PC training	15.00(14.15)	5.44(10.96)	10.69(13.66)
Months “cross” training	2.88(4.85)	10.42(14.52)	5.88(10.64)
Courses of “cross” curriculum	5.60(7.65)	3.20(6.42)	4.40(7.14)
Clinic Integration Score (0-4)	3.07(1.05)	2.93(.905)	3.01(.990)
Provider Integrated Practice Score (10-90)	60.05(16.83)	68.27(16.51)	63.49(17.14)

Analyses of Hypotheses

Hypotheses 1-4. The study data was downloaded as a Microsoft Excel spreadsheet and imported into the software program SPSS Statistics (Version 18) for statistical analyses. Statistical multiple regression was conducted to determine whether and to what degree education, training, IPC professional experience, and clinic structure factors predict IPC practice. Pre-analysis data screening eliminated 23 cases due to incomplete data. The assumptions of normality, linearity, and homoscedasticity were all met, thus the dataset was determined to be appropriate in its current form for further analysis. Means and standard deviations of the predictor and criterion variables are presented in Table 2.

The results of the regression indicate that overall the four proposed predictors explained 33.3% of the variance ($R^2=.333$, $F[4,199]=24.851$, $p<.000$). However, it was found that clinic structure was the only factor to show statistical significance in predicting providers' integrated practice ($\beta= .574$, $p=.000$, 95% CI [8.18, 12.25]).

Table 3

Regression coefficients of dependent variable integrated practice

	Unstandardized Coefficients		Standardized Coefficients	T	Sig	95% Confidence Interval for β		Correlations		
	β	Standard Error	Beta			Lower Bound	Upper Bound	Zero-order	Partial	Part
(Constant)	33.209	3.488	-	9.520	.000	26.330	40.088	-	-	-
Collaborative Professional Experience	.080	.131	.036	.611	.542	-.179	.339	.007	.043	.035
“Cross” Education	-.185	.151	-.075	-1.226	.222	-.483	.113	-.072	-.067	-.071
PC Training	-.057	.079	-.044	-.720	.472	-.213	.099	-.023	-.051	-.042
Clinic Structure	10.216	1.033	.574	9.886	.000	8.179	12.254	.569	.574	.572

The optimal prediction equation from the factors measured is $Y'_{Integrated\ Practice} = (.574)x_{Clinic\ Structure}$.

Hypotheses 1 (more clinical training in primary care results in more integrated practices), 2 (greater number of “cross” discipline courses completed results in more integrated practices), and 3 (more experience in collaborative primary care practice results in more integrated practice) were not supported by the results of this analysis; whereas, Hypothesis 4 (clinic system structures supporting integrated care results in more integrated practice) was supported by the results.

Bivariate correlations of the regression factors found several statistically significant relationships. In addition to the correlation between clinic structure and integrated practice, significant positive relationships were found between collaborative primary care experience and “cross” courses,

collaborative primary care experience and primary care training, and “cross” courses and primary care training (Table 4).

Table 4

Bivariate correlations of proposed regression model

Factors	Integrated Practice	PC Experience	“Cross” Courses	PC Training	Clinic Structure
Integrated Practice	—				
Collaborative Experience	.460	—			
“Cross” Courses	.153	.009	—		
PC Training	.371	.012	.000	—	
Clinic Structure	.000	.407	.388	.163	—

Hypothesis 5. A one-way analysis of covariance (ANCOVA) was conducted to determine if type of provider (BHP vs. PCP) differed significantly in integrated practice when controlling for clinic structure. Pre-analysis data screening eliminated 23 cases due to incomplete data. The assumptions of normality, homogeneity of variance, and homogeneity of regression were all met, thus the dataset was determined to be appropriate in its current form for further analysis. Means and standard deviations of the independent, dependent, and co-variables are presented in Table 2.

The ANCOVA was found to be statistically significant, $F(1, 9.76)=27.28$, $MSE=115.17$, $p=.000$, partial eta squared (η_p^2) = .736, indicating a significant difference in average integrated practices between PCPs and BHPs after controlling for clinic structure. BHPs were found to report significantly greater integrated practices than did PCPs. Hypothesis 5 (PCPs rate more highly items measuring integrated practices in comparison to BHPs) is not supported by these results, rather the reverse is indicated by this analysis.

Hypothesis 6. A one-way analysis of covariance (ANCOVA) was proposed to determine if type of primary care clinic differed significantly in integrated practice when controlling for clinic structure. Pre-analysis data screening eliminated 23 cases due to incomplete data. However, too few common

cases were found in the seven different clinic types reported, other than academic ($n = 47$) and community health center (CHC; $n = 134$) settings, in order to produce reliable main effect statistics. Additionally, the pair-wise comparison showed no significant difference between academic ($M = 42.99$, $SE = 2.88$) and CHC ($M = 41.48$, $SE = 2.32$) clinic type in integrated practice. Therefore, Hypothesis 6 (providers in VA settings rate more highly items measuring integrated practices than those in primary care clinics of other types) could not be adequately evaluated by the available data.

Qualitative Analyses. Qualitative responses were elicited from participants using two open-ended questions constructed to draw perspectives regarding the effects of training and education on IPC practice and the ongoing barriers to effective integrated practice. The resulting data was reviewed, general themes were identified, and the frequency of endorsed themes in participant responses was tabulated. The results of this analysis are outlined below.

Question 1: How has your education and training affected your approach to practicing in a behaviorally integrated primary care setting? Unexpectedly, participants appeared to interpret and respond to this question in various ways. Some identified both their training and education experiences and its effect on their current practice, others only identified the presence or lack of training and education experiences related to IPC, while others only identified aspects of their practice affected by their training and education experiences but not what those experiences were. The most common response themes were medical training helped participant see the value of a specially trained BHP practicing in primary care (12.02% overall, 19.63% PCPs, and 1.32% BHPs; Table 4) and the participant having none to very little training and/or education in IPC and noticing none to very little overall impact on their practice (12.02% overall, 11.21% PCPs, and BHPs 13.16%). Other common response themes found were non-primary care interprofessional training experiences provided preparation for IPC (10.38% overall, 0.93% PCP, 23.68% BHP), all significant IPC training was “on-

the-job” (10.38% overall, 14.02% PCP, 5.26% BHP), and the holistic/biopsychosocial emphasis of participants’ particular education/training programs provided preparation for IPC (10.38% overall, 10.28% PCP, 10.53% BHP).

Some responses were very descriptive and seemed to encapsulate well the perceptions and experiences offered by many other participants. For instance, one PCP answered this qualitative question saying, “Shared decision making, motivational interviewing and preference-sensitive care were stressed in my training program, this gave me a foundation to embrace integrated care.” Another PCP offered:

Education and training have nothing to do with it. Clinical practice and identifying the needs at the time, doing decent [history and physicals] are what have affected my approach. Plus having a good working relationship with our behavioralists who are accessible and willing to take urgent cases promptly...do curbside consults.

A BHP recounted their experience by writing:

My education during graduate school had an emphasis on integrated health care and my post-doc was in health psychology and [primary care behavioral health]. I have been trained to function as a BHC and work within primary care behavioral health model daily. This level of training allowed me to feel prepared and confident in working with both patients and providers in primary care.

Question 2: What, if any, significant barriers to the access of behavioral health services do you perceive to be present in the clinic in which you practice? Participants provided a wide variety of factors they believed to be the most significant barriers to the access of behavioral services in their clinics. The most common response themes were a shortage of BHP staffing in primary care (21.69% overall, 21.90% PCPs, and 21.43% BHPs; Table 5) and general insurance/reimbursement problems for

behavioral health services in primary care (17.46% overall, 17.86% PCPs, and BHPs 13.16%). Other common responses included limited access to specialty mental health services in the community (8.99% overall, 9.52% PCPs, and BHPs 8.33%) and no significant barriers perceived to be present (8.99% overall, 9.52% PCPs, and BHPs 8.33%).

Similar to the other qualitative question, several participants provided particularly notable responses. One BHP wrote:

I need five more of me. We don't have enough resources to provide for the volume of patients that need mental health support. I wish we had a whole behavioral health department designated for our clinic, but we don't. Also, we're a busy clinic so there isn't enough time for the providers to meet as a team to improve communication about patients as a whole.

A frustrated PCP added:

The activity is not supported by actual reimbursement. We 'rob Peter to pay Paul' to get these services to our patients. The bigotry in our healthcare system against cognitive as opposed to procedural interaction with our patients is literally killing us.

Finally, a PCP pointedly identified numerous perceived barriers related to the practices of BHPs and reimbursement challenges in their clinic.

[BHPs] are not there every day and when I need them they seem to be missing somewhere 50% of the time. They won't see 'certain' types of insurance and they require the patient to call and schedule on a different day once their visit is 'authorized' by their insurance. By then the patient no longer needs a visit or they are not interested and they are lost to follow up. Not enough availability for 'point of care' help. They expect the patient to be actively engaged in making their own follow ups and write off patients who are 'non-compliant'. Most patients need help with management of being compliant - not to be written off. They need to be more

confident in medication matters...They generally can't 'fix' my patients social problems or even help them to fix their own problems, they can analyze well but generally can't really fix 'em.

Table 5

Most common qualitative responses regarding training, education, and barriers in IPC

Question	Response Category	PCP%	BHP %	Overall %
Perceived effects of training and education on approach to practice in IPC				
	Non-PC interprofessional training experiences useful preparation	0.93	23.68	10.38
	Medical training helped see value of specially trained BHP in PC	19.63	1.32	12.02
	Little/no education or training in IPC and little/no overall impact	11.21	13.16	12.02
	All significant IPC training was on the job	14.02	5.26	10.38
	"Holistic"/biopsychosocial emphasis of education and/or training aided	10.28	10.53	10.38
	Training included IPC experience	9.35	10.53	9.84
	Little/no education or training in IPC and subsequent difficulty with IPC practice	9.35	6.58	8.20
	Recognition of importance of incorporating behavioral health into primary care clinical encounters	9.35	0.0	5.46
	Training/education provided greater facility in collaborating with medical professionals	0.0	11.84	4.92
	Training/education in specific behavioral change interventions/techniques helped (e.g., Motivational Interviewing)	2.80	7.89	4.92
Perceived barriers to the access of behavioral health services in participant's clinic				
	IPC behavioral health staffing shortage	21.90	21.43	21.69
	General insurance/reimbursement problems	17.14	17.86	17.46
	Access to specialty mental health services in community	9.52	8.33	8.99
	No significant barriers perceived	9.52	8.33	8.99
	Patient attitudes, stigma, limited understanding of utility of BH services	8.57	7.14	7.94
	Lack of psychiatric prescribers overall, those accepting Medicaid/Medicare	12.38	2.38	7.94
	Limited PCP understanding of and skill in BH services	1.90	11.90	6.35
	Financial constraints of patients	5.71	5.95	5.82
	Same-day appointments (warm hand-offs) limited due to scheduling or reimbursement issues	6.67	4.76	5.82
	Lack of physical/systems resources to patients (e.g., transportation, reliable phone, etc.)	0.95	11.90	5.82

Post-hoc Analyses

After the initial analysis of the data and hypotheses examined, several post-hoc analyses were conducted to explore other possible relevant relationships between factors examined in this study.

Education, Training, and Experience of BHPs versus PCPs. Although earlier research (Gavin et al., 1998; Eberhardt De Master, 2011) found a significant effect of education and training on BHPs' collaborative practice, a similar result was not found in this study among BHPs and PCPs in collaborative primary care settings. The proposed hypotheses and analyses examined BHPs and PCPs combined; therefore, a post-hoc analysis was performed to look at BHPs and PCPs individually. Separate statistical multiple regressions were conducted on the BHP and PCP study participant responses with interdisciplinary coursework, training experience, professional experience, and clinic structure as predictor variables and integrated practice as the criterion variable. The assumptions of normality, linearity, and homoscedasticity were all met. The optimal prediction equations from the factors analyzed are $Y'_{BHP\text{Integrated Practice}} = (.603)x_{BHP\text{ClinicStructure}}$ and $Y'_{PCP\text{Integrated Practice}} = (.670)x_{PCP\text{ClinicStructure}}$ with explained variance unique to clinic structure among these two subsamples of 35.8% and 43.7%, respectively. No statistically significant effect was found of education, training, or experience on the integrative practices of either BHPs or PCPs.

Individual Components of Providers' Clinics. Clinic structure was found to have a significant effect on integrated practices. However, the initial analysis did not allow for an examination of the four factors composing the measure of clinic structure used in this study. These individual clinic components were analyzed post-hoc to determine which individual components appeared to have greater predictive strength for integrative practice than the others. A factorial ANOVA was conducted to examine these variables. Pre-analysis assumptions of normality and homogeneity of variance were met. The main effects of Shared Treatment Plan ($F[1, 202]=5.94, p = .016, \eta^2 = .03$) and Warm Hand-Offs

($F[1, 202]=17.202, p = .000, \eta^2 = .083$) were found to be statistically significant. Therefore, those who practice in a clinic with shared treatment plans and those in clinics that allow for warm hand-offs reported significantly higher average scores of integrated practices than those who do not, accounting for 3% and 8.3% of the variance of integrated practice, respectively.

The main effects of Shared Clinic ($F[1, 202]=.208, p = .649, \eta^2 = .001$) or Health Records ($F[1, 202]=.849, p = .358, \eta^2 = .004$) were not found to be statistically significant. Providers practicing in a setting with shared PCP/BHP clinic space and those with shared health records did not report significantly different average scores of integrated practices than those who do not. Additionally, no statistically significant interaction effects between clinic characteristic on integrated practices were found in this analysis.

Provider Age. In a follow-up analysis to that of the variable of professional experience, provider age was examined as a possible correlate to integrated practice. A bi-variate correlation was conducted to determine if provider age was correlated to integrated practices reported. Provider age and integrative practices were not found to be significantly correlated ($r=.051, p=.475$).

Discussion

As the most common point of entry for those seeking healthcare services, primary care clinics have long been considered the “front lines” of medicine. Patients seeking primary care services frequently present with mental health and health behavior-related concerns, but for various reasons often fail to receive effective treatment for these problems (Regier et al., 1993; Strosahl, 1998; James & O'Donohue, 2009). In recent years the integration of behavioral health providers into primary care practice has been receiving an increasing amount of research, policy, and funding support as the most appropriate way to address this health care problem (Butler et al., 2008; Substance Abuse and Mental Health Services Administration, 2011; Department of Health and Human Services, 2011). Yet various experts in the integration behavioral health and primary care have suggested that multiple factors complicate efforts to implement this emerging model of care. Among the provider-driven barriers cited are providers' lack education and training and training in integrated care as well as the presence of professional cultures and attitudes resisting interprofessional practice (Gavin et al., 1998; Blount, 2009; Pomerantz et al. 2009; Collins et al., 2010; Funderburk et al, 2010). However, the little empirical research supporting these claims is limited in scope for both provider and organization types studied.

The goal of this study was to investigate the question of how education, training, and professional experience affects actual practice of medical and behavioral health providers in collaborative and IPC settings across various organizations. Empirical evidence was gathered to determine if the factors proposed by this researcher and the previously cited authors affected the practice of integrated behavioral health in primary care. A broad sample of primary care medical and behavioral health providers were recruited to provide the data to begin to examine these hypotheses. Of particular note in this study is the fact that the majority of the hypotheses as initially constructed proved unsupported by the resulting data. Education, training, and professional experience were found

to have no statistically significant effect on integrated practice, whether BHPs and PCPs were examined together or separately. As hypothesized, clinic structure (i.e., shared clinic space, shared health records, shared treatment plan, and integrated office visits) did provide some prediction of providers' integrated practice, explaining 33% of the variance (44% PCP and 36% BHP when analyzed separately). The exploratory qualitative items resulted in few common themes regarding the effect of education and training on the practice of integrated behavioral health in primary care. Participants' responses to the question of perceived barriers to effective integrated practice included the common themes of shortage of behavioral health provider staffing and problems related to reimbursement of services.

Given the preliminary nature of this area of research, post-hoc analyses were performed to further explore potentially important variable relationships that were not initially considered. Examining further the positive findings of clinic structure on integrated practice, the four components of the measure used to determine the level of integration of each participant's clinic were compared individually to scores of integrated practice. The presence of a shared treatment plan and a system for "warm hand-off" referrals resulted in significantly higher integrated practice by the provider while a common medical and behavioral health clinic space and common health care record did not. Age was also considered as a possible factor in the adoption and the newer practice of IPC. However, no effect of age on integrated practice was found.

Explanations of Study Findings

The findings of this study suggest that the structures and resources of primary care clinics are considerably more important to supporting IPC practice than are formal pre-qualification education and training as well as professional experience. Given the exploratory nature of this research and the use non-validated instruments, these results are certainly not definitive. Nevertheless, the degree of

predictive strength of clinic structure on integrated practice found provides reasonable confidence that clinical workflow supports and resources are likely significant factors in effective IPC practice. These unexpected findings warrant a closer examination in the context of the previously reviewed literature, new literature to consider, and various possible explanations.

Education, Training, and Provider Experience. Training and education, although found in this study to be correlated with amount of professional experience in primary settings, provided no prediction of behaviorally integrated practice as hypothesized. The lack of an effect found of education, training, and provider experience on the primary dependent variable of integrated practices is somewhat surprising in light of the research of Gavin, et al. (1998) and Eberhardt De Master (2011), which demonstrated a positive correlation between BHPs' training that emphasized collaboration with medical providers and collaborative practice with PCPs. These disparate research outcomes of a seemingly similar construct may be attributable to several causes. First, Gavin et al. and Eberhardt De Master used instruments constructed for dichotomous responding (i.e., yes/no response options) to items measuring didactic and practical training experiences rather than the continuous response (i.e., how many? how much?) to similar items used in this study's measure. This suggests that the simple presence or absence of interdisciplinary coursework or clinical training may have an effect on collaborative or integrated practices while these practices do not necessarily increase with the amount of coursework or training.

Second, the nature of the current practice of the participants of Gavin et al. and Eberhardt De Master appear to be significantly different than those of this study. The participants of Gavin et al.'s study were PCPs and BHPs from the same HMO, but practicing in non-integrated, physically-separate clinics. Eberhardt De Master's study participants were psychologists from primarily private psychology practice settings. Alternatively, this study's participants endorsed practicing in integrated or highly

collaborative primary care settings. It might then follow that if a provider is practicing in a setting designed for or with a strong history of medical and behavioral health collaboration, that education or training experience may not affect integrated practices. The converse then would be true for those, particularly BHPs, who are practicing in specialty or private practice settings.

Finally, because of the relative infancy of IPC few providers currently practicing in this setting have likely had the opportunity to receive significant pre-qualification education and training or even professional experience in that practice setting. This may preclude the ability to measure the effect of training, education, and experience on IPC practice in the general provider population. Rather, the effect of these factors may prove more effectively measured via a longitudinal study comparing providers completing a specialized health profession programs versus those completing conventional programs.

How does this non-significant and possibly inconclusive finding fit within the greater context of interprofessional health education (IPE)? Reeves et al. (2013) performed a review of the effects of interprofessional, primarily continuing education type-training on clinical practice and outcomes. Identifying 15 studies of adequate methodological rigor, an improvement of clinical staff communication, patient satisfaction, and coordination of care was found among those receiving interprofessional training. This review did include one study examining pre-qualification interprofessional training of medical residents, nurse practitioner students, and pharmacy students in primary care finding improved patient engagement and glycemic control for a diabetic patient sample.

Outside of the single study identified by Reeves et al. (2013), which measured practices of the clinicians while they were still in training, there is little evidence that pre-qualification IPE and training produces benefits for licensed independent interprofessional practice overall, much less more specifically in IPC. Thistlewaite (2012) noticed this dearth of interprofessional education (IPE)

outcome research and posited two major obstacles to this stream of scientific inquiry. First, she noted that most pre-qualification health profession programs remain mostly focused on the traditional mandates of their own specific disciplines, making the interprofessional curriculum simply adjunct at best. Additionally, Thistlewaite determined, similarly to Reeves et al., that most IPE research is of poor methodological quality. As such, she argues, it remains difficult to generalize and build upon much of the current research results, keeping this area of research very much in an exploratory stage.

In summary, the effect of IPE on clinical practice remains unclear, many studies showing some positive results and others no effect at all. In all likelihood, IPE does contribute some significant improvement to collaborative clinical practice. However, the current state of inconsistent methodology and standardization of educational interventions and targets prevent researchers from obtaining very useful outcome data.

Clinic Structure and Organizational Factors. As reported earlier, the measure of integrated clinic structure in this study was the only statistically significant predictor of integrated practices, explaining a large portion of the variance (33% overall; 36% BHP, 44% PCP). In addition, a post-hoc analysis showed two of the four factors considered integrated clinic structures—shared treatment plan and integrated patient office visits or “warm hand-offs”—to be statistically correlated to integrated practice while the others were not. Several explanations for these findings seem plausible.

First, in an attempt to control for clinic factors, the questionnaires used may have inadvertently pulled for similar components of the same construct as the integrated practice measure. Item 15, the third of four questions intended to measure integrated clinic structure (“Do you share a common treatment plan with the behavioral/mental health providers to whom you refer patients?”), appears to pull for similar factors as items 20-22 in the integrated practices measure (same day communication, integration of behavioral health goals in medical treatment plan, and regular team meetings).

Additionally, item 16, the fourth of four questions intended to measure integrated clinic structure (“Do you routinely conduct integrated or simultaneous office visits along with behavioral/mental health providers?”), appears to pull for similar factors as items 19 and 25 (make available and refer for same-day schedule openings for behavioral health visits and routine use of “warm hand-offs”). These noted item similarities may explain why the two particular components of integrated clinic structures in question were found to be correlated with total integrated practice scores, while shared clinic space and health records, which do not share as much similarity with the integrated practice measure items, are not correlated with such scores. Taken together, this evidence might support the idea that these items measure the same or a very similar construct as the noted 5 items from the 10 item measure of integrated practice used in this study.

On the face, these similarities suggest an instrumentation problem that may be undermining the results of this study and the strength of its generalizability. Yet, it should be noted, that collinearity statistics did not suggest an excessive degree of shared variance between the variables examined, including clinic structure and integrated practices. Additionally, one might argue that the four integrated structure factors measured in this study are not independent aspects of an integrated clinic, but intertwined systems that enact a cumulative effect on integrated practice. In this instance, shared clinic space and health records may be necessary but not sufficient for increased integrated practice. Shared treatment plans and warm hand-offs then might build off the other clinic components to complete a system of adequate support for integrated practice. This would support an alternative account of the findings such that, although the clinic structure measure may be sensitive to a construct or a set of similar constructs as the integrated practice measure does, enough of a difference remains that other important factors not fully revealed in this study likely play a part in the final delivery of integrated practice.

Another explanation for the significant amount of explained variance in integrated practice by clinic structure is that the organization, resources, and designed workflow of a clinic may simply pose a much greater effect on integrated practice than does provider education, training, and experience. Given the demands of patient volume, coordination of care, documentation, and breadth of presenting problems in primary care, it seems plausible and even probable that the venture of integrating behavioral health services into this hectic setting would be a task very much requiring a systems-based approach. While providers are part of that system, so are a multitude of other players such as allied health staff and administrative staff as well as documentation and scheduling processes and the tools that accompany them (e.g., computers) to name a few.

Past research attempting to quantify the effect of organization factors on clinical practice has begun to identify some specific trends. Gilbody, Whitty, Grimshaw, and Thomas' (2003) review of 36 studies examining education and organizational interventions to improve management of depression in PC found that simple guideline dissemination or clinician in-practice education strategies were not effective. Rather nurse case management and increased integration between primary care and specialty mental health did have a positive effect, with a combination of all these components having the greatest effect. Wensing, Wollersheim, and Grol (2006) found in reviewing 36 reviews on organizational strategies to implement improvements in general patient care that clinical performance was generally improved by enhancement of professional roles of non-providers and computer systems for knowledge management. Additionally, clinical outcomes were generally improved by team care, integrated care services, and general computer system use. Finally, a more recent review (Franx, Dix, Wensing, & Pincus, 2013) of 18 studies examining implementation strategies of collaborative primary care mental health systems determined in-practice education, technological support tools, expansion of nurse practice, and financial incentives for collaborative practice to be most effective. Yet the authors found a

wide variation among effective collaborative system implementation, with the most effective including significant efforts to obtain local stakeholder “buy-in” and tailor each strategy to the specific contexts of clinical delivery.

Taken together, the research does support the use of in-practice education of clinicians to improve collaboration and overall care. However, it appears systems strategies that leverage clinical support staff, technological support, and increased opportunities for interaction with specialty care or multidisciplinary team based care all designed in a manner that best fits the specific clinic in question are even more important than provider specific efforts. Therefore, while instrumentation issues may be affecting at least somewhat the results of this study, the broader body of health care systems research specific to IPC is in fact consistent with these findings. It would then seem necessary for organizational factors to remain a part of any future research attempting to identify predictors of behavioral integration practice in primary care.

Primary Care versus Behavioral Health Providers. BHPs reported significantly greater integrated practice than did PCPs in this study. This finding was counter to what was hypothesized. Although no previous research supported had examined this particular comparison and could inform this hypothesis, various subject area experts in IPC (Blount, 2009; Pomerantz et al. 2009; Collins et al., 2010) argued BHPs face necessary and significant cultural and practice style changes (e.g., faster pace, increased patient information sharing, team care orientation, etc.) in becoming a part of the primary care health team. As such, it would seem that BHPs might experience a greater struggle to accommodate to an IPC practice setting than PCPs. Yet the present data collected suggests quite the opposite.

Several reasons for this unexpected finding were considered. First, the original hypothesis may have been confirmed had the BHP study sample only included those who had primarily worked in

specialty mental health settings, had little training or orientation to team based care, or conceived of their role as BHPs in primary care as co-located specialty mental health clinicians rather than integrated clinicians part of the core patient care team. An attempt was made to broadly detect and control for the nature of previous experience, training, and education as well as the overall degree of clinic integration in this study. Nevertheless, the study sample may be overrepresented by BHPs with significant training, experience, and/or orientation toward an integrated practice. Thus these findings may not be generalizable to traditionally trained and acculturated behavioral health professionals.

Another potential explanation for this finding is the possibility of a significant and systematic selection bias effect. BHPs may be reporting at some level an aspirational or an intended set of integrated practices, feeling a continual pressure to justify their role and the need for their service in primary care. At the same time PCPs likely feel no pressure to justify their role or feel inordinately concerned with being particularly good at behavioral health integration beyond what they believe each particular patient of theirs needs. As such, PCPs may have reported more accurately or maybe even underreporting their actual integrated practices than did BHPs.

Finally, BHPs may have reported greater integrated practices than PCPs because of their specific role as integrators of behavioral health services among multiple PCPs in a given clinic; whereas, PCPs' main responsibility is to the overall care of their own specific patient panel and their patients' behavioral health only when necessary. In other words, some PCPs may have large behavioral health needs on their particular patient caseload, possibly requiring increased integration efforts, while other PCPs may not. But BHPs in integrated clinics will always have patients requiring integration efforts with PCPs and other primary care clinical staff. In addition to that, many PCPs may simply not have a clinical orientation toward the behavioral aspects of health care. Their pre-existing interests led them to medicine and primarily to the care of medical health conditions and not necessarily toward a

behavioral understanding of illness and health. As such, it would not seem too surprising that BHPs in primary care would overall display a greater level of behaviorally integrated practices.

As stated earlier, no previous research has compared directly the practices of BHPs and PCPs in IPC settings. The relevant research to date has mostly examined perceptions of PCPs and BHPs of each other's practices and overall usefulness of services (Gavin et al., 1998; Kainz, 2002; Grenier et al., 2008; Funderburke et al., 2010; Eberhardt De Master, 2011). While both BHPs and PCPs reported a desire for greater collaborative practice and valued the professional services of the other to care for their patients, some of these studies found that effective communication and understanding of the scope of practice between the two professional groups was challenging. For example, PCPs noted too little clinical feedback from BHPs to whom they referred patients and BHPs often reported that PCPs overwhelmingly referred patients for primary mental health concerns to the neglect of health behavior or lifestyle change issues. More recently, Beacham and colleagues (2012) compared PCPs' view of the general usefulness of BHPs in the care of their patients of integrated and non-integrated settings. Interestingly, they found great variability in PCPs' view of BHP's services regardless of setting, suggesting that many PCPs may be fairly consistent in their perspectives of and use of BHPs regardless of whether a BHP is integrated into their clinic. Similar referral patterns in previous research also appeared in this study—higher referral rates for primary mental health concerns rather than behavioral medicine issues.

Taken to together, this research seems to indicate that some PCPs, although they desire collaborative practice with BHPs, may not find BHPs' services helpful regardless of integration, experience some barriers to effective communication with BHPs, and tend to refer mostly for primary mental health conditions. In this context then, it would seem unsurprising that this study would produce lower average integrated practices scores among PCPs than integrated BHPs. However, this and the

previously proposed explanations have yet to be systematically examined as sources of reduced integrated practice and will likely prove important targets for future research.

Health System Type. The vast majority of participants endorsed practicing in either community health centers (CHCs) or teaching clinics. As such, they were the only groups with a large enough sample size to statistically compare. When analyzed, no significant differences were found between these two types of health systems. Several studies conducted in various health system types have established improved patient and provider satisfaction as well as clinical outcomes resulting from behavioral integration (CHCs, VAs, HMOs, teaching clinics, and university health; Butler et al, 2008; Funderburk et al., 2010; Westheimer et al., 2008; Woltmann et al., 2012). However, none have directly compared outcomes between health system types to determine if any significant difference exists.

Some of the greatest barriers identified to effective and sustainable implementation of IPC in this and other studies (Garcia-Shelton, 2006; Mauch, Kautz, Smith, & Center for Mental Health Services, 2008; Wray, Szymanski, Kearney, & McCarthy, 2012) are behavioral health staffing shortage and reimbursement issues. As such, it would seem that the VA—a closed, single-payor system with a significant emphasis and investment in mental health services—would see greater integrated practice in primary care than other settings that tend to have fewer resources accessible and/or dedicated to these services. But this hypothesis remains yet to be proven.

Provider Age. In an attempt to identify other factors that may affect integrated practices beyond the primary variables of education, training, and experiences, provider age was examined post-hoc. Anecdotally, it has been suggested by providers practicing in IPC that older providers, who likely have had a longer period of time to establish their practice style, may be less inclined to adopt the new practices necessary for behavioral integration in primary care. However, provider age has yet to be studied as a significant factor in the successful implementation of IPC.

Provider age did not show a significant effect on integrated practices as measured in this study. One possible explanation for this non-significant finding is the apparent restricted range of age of the participants in this study. With an overall age mean of 42.92 years ($SD = 10.59$) as well as just 8 of 118 PCPs and 8 of 85 reporting an age greater than 60 years, this sample may not be age-representative of the overall IPC provider population. As such, a generational effect in integrated primary care may exist, but this study sample did not allow for the statistical detection of it.

In a study of the pain management clinical practices of PCPs in a non-IPC setting, Maserejian et al. (2014) found younger PCPs more likely to follow the most up to date guidelines for management of musculoskeletal pain than did older PCPs. Moreover, Keating et al. (2010) found younger physicians were more likely to engage patients in end of life care discussion when diagnosed as terminally ill, according to current clinical guidelines, than did older physicians. However, the small amount of literature on age effects of BHP practice is mixed. In one study older BHPs in a community mental health setting tended to report divergence from a range of evidenced-based practices established as current clinical guidelines (Aarons, 2006), whereas another study of pediatric BHPs did not see an age effect in clinical practice based on BHP age (Nakamura, 2011).

Findings from the research of provider practices in non-IPC, specialty medical, and specialty primary care may not be reliably generalizable to IPC settings. However, given presence of data to suggesting that younger medical providers, and possibly BHPs, are more likely to adopt best practice, an age/generational effect may be found in future research. Were BHPs and PCPs examined separately and the sample's age range not as constricted, the age effect analysis in this study might have shown a significant correlation with integrated practice overall and/or among one provider type or the other. Provider age may yet be a factor of interest as IPC research continues.

Provider Perception of Facilitators and Barriers of IPC. The two questionnaire items in this

study eliciting qualitative responses from participants produced many thoughtful and descriptive answers to the questions “What, if any, significant barriers to the access of behavioral health services do you perceive to be present in the clinic in which you practice?” and “How has your education and training affected your approach to practicing in a behaviorally integrated primary care setting?” Responses ranged from the views that there were no significant barriers to patients accessing behavioral health services in their clinic and education and training had no effect on their approach to practice in IPC to the perspective that multiple, systems-level barriers continued to prevent many patients from accessing behavioral health services in their IPC clinics to training and education having a strong emphasis in biopsychosocial and interprofessional clinical practice was necessary for them to be an effective IPC provider. However, no strong common themes regarding the effects of training and education on IPC practice emerged from the resulting data. This would seem consistent with quantitative findings in this study of the effect of training and education factors on integrated practice. Additionally, several other qualitative studies of collaborative care between behavioral health and primary care providers (Kainz, 2002; Benzer et al., 2012; Davis et al., 2013) failed to uncover significant themes related to the importance of pre-qualification training and education on collaborative clinical practice, suggesting there is little consensus among providers in primary care that formal education and training has specific effects on collaborative and integrated clinical practice.

Two relatively common themes were found among the perceived barriers to IPC with 21.7% of participants citing BHP staffing shortage and 17.5% identifying health insurance and service reimbursement problems. Were one to broaden the conceptualization of these factors and thus the coding of the study data, these themes might have also included related barriers such as general time pressures (3.7%), scheduling challenges (10.1%), overwhelming demand for services (4.8%), patient financial strain (5.82%), and patient transportation and communication barriers (5.82%). These

identified themes of time pressures, staffing shortage, and reimbursement challenges are also supported as major barriers by multiple researchers in the field (Garcia-Shelton, 2006; Mauch, Kautz, Smith, & Center for Mental Health Services, 2008; Blount & Miller, 2009; Bluestein & Cubic, 2009; Beehler & Wray, 2012). Taken together, these findings indicate the provider perception, which is consistent with the existing literature, that much of the barriers to accessing behavioral health services could be addressed by dedicating increased financial resources to these services and placing more BHPs in primary care.

Also reported among both PCPs (4.8%) and BHPs (10.7%) was a concern that the other discipline did not share their perspectives on effective practice. Some PCPs in this study expressed frustration that BHPs discouraged PCPs from interrupting scheduled appointments for emergent clinical issues, resistance to working with patients with limited motivation or for briefer interventions, and the lack of a shared treatment plan. Some BHPs cited a lack of effort from some PCPs in putting forth effort to collaborate with them, lack of an overall interest in behavioral health services for their patients, and a lack of understanding of behavioral factors in chronic illness and the skill of BHPs to address them. These perceptions were also discovered in other qualitative studies examining provider experiences with IPC (Westheimer, 2008; Davis et al., 2013), indicating similar concerns of too limited information sharing and collaboration, referral for medical as well as mental health conditions, and general acculturation to primary care practice. Such findings are also reflected in the previously reviewed quantitative studies (Grenier et al., 2008 & Beacham et al., 2012), strengthening the argument that these factors should remain an ongoing focus of IPC implementation efforts.

Implications for Integrated Primary Care

A building body of evidence supports the integration of behavioral health services into primary care as a means to improve access to care and clinical outcomes for mental health and many chronic

medical conditions. Yet implementation models for this service are varied and factors that facilitate or impede its success have yet to be established. In particular, the effect of pre-qualification or degree/licensure associated education and training as well as previous professional experience on providers' integrated practices is unknown. This study provides initial evidence that, while education, training, and experience may have little or no effect on integrated practice in IPC, the work flow and clinic structural resources likely do significantly impact integrated practice. These findings point to several important factors to consider for efforts to improve IPC implementation.

As health systems, insurers, and governmental health agencies consider how best to allocate resources dedicated to supporting the growth and improvement of primary health care, this and related research appears to provide some initial direction to how those resources can most effectively be invested. The findings of this study would be consistent with efforts focused on improving system and work flow supports within current IPC clinics above that of IPE in health profession degree programs. In particular, increased time per patient, physical space, and clinical resources (e.g., shared records systems, communication tools, etc.) for coordinating treatment plans and warm hand-offs seem to be important factors in the actual delivery of integrated practice for PCPs and BHPs in primary care.

It remains possible that IPE and training does have positive, if relatively small, effect on IPC practice. Also, given that IPE experience appears to be the exception rather than the norm among those currently practicing, it cannot yet be discounted as a potentially stronger predictor of integrated practice in the future as IPE becomes more the norm. Finally, IPE may currently serve another function, ultimately increasing integrated practice and overall availability of IPC services. Students from various behavioral health professions who receive IPE during their degree programs may experience increased comfort and interest for IPC and consider clinical practice in IPC more readily, resulting in the increased availability of BHP staff and addressing the most common barrier to IPC practice identified

by participants in this study. Therefore, withholding resources from IPE may not be a good long-term approach to supporting the effective implementation of IPC.

Ongoing healthcare reform in the form of the Affordable Care Act (ACA or “ObamaCare”) will likely prove to be a salient backdrop to the findings of this study. With millions of newly insured patients seeking care, the majority obtaining Medicaid coverage, healthcare organizations across the US are scrambling to expand their primary care services to meet this demand. Moreover, recent research has also demonstrated the high likelihood of a disproportionate growth in overall health care services needed, given that those eligible for Medicaid coverage tend to have worse health and incur greater care costs than do those with private insurance (Finkelstein et al., 2012). Therefore, despite the great increase in those with insurance, managing the cost of care will likely remain a challenge for health systems given the limited reimbursement available (Medicaid programs tend to pay for services at a much lower rate than Medicare and private insurers).

Health systems and the newly forming Coordinated Care Organizations (CCOs), cost-sharing partnerships between independent healthcare organizations, are increasingly being pushed to contain medical, behavioral, and all other healthcare services costs across their systems and communities. Anticipating and responding to these pressures, the ACA has included a range of rules and incentives to guide and support these integrative efforts, including IPC (Croft & Parish, 2013). Increasing access, identifying level of service needs more efficiently, and targeting high service-utilizing patients for the delivery of preventative care are all components of IPC showing promise for achieving the goals of improved outcomes and lowered costs. The findings of this study build upon existing IPC research to provide some guidance in these heady healthcare times.

Unique Contributions of Present Study

Several characteristics of this study are unique among the body of IPC research. First, the

participant sample of this study is relatively large and varied. 203 complete participant responses were drawn from across the US, from various health organizations and system types, and a sufficiently comparable sample of both PCPs and BHPs to facilitate statistical comparisons. These features represent a size and diversity of sample not yet achieved in published provider-focused IPC research to date, offering a valuable contribution to the body of literature by the increased generalizability of the findings through statistical power and broad sampling.

The present study also initiated a new stream of investigation to this area of research in that it is the first to quantitatively measure the effects of pre-qualification education and training and IPC clinic components on IPC practice. As earlier stated, these findings may provide some early direction for the effective allocation of resources to facilitating IPC as PCMHs continue to be established and strengthened across the country. Ultimately, the greatest contribution of this study will likely be as a useful starting point for more in-depth and refined research approaches to examine the specific factors within degree program interprofessional training, IPC clinic characteristics, and IPC practice.

Limitations

Despite the contributions of this study, several methodological limitations hamper the strength of the findings. First, similar to any other research utilizing widely distributed surveys, this study is subject to the possibility of significant selection bias. Given the approach to sampling (i.e., recruitment through listservs as well as individual email recruitment) used in this study, the exact response rate cannot be determined. Yet approximately 2000 recruitment emails were sent out directly to individuals, indicating a response rate below 9%. The small portion of those recruited who chose to participate were almost certainly much more likely to be interested in and engaged in IPC practices than those who did not, resulting in a less than fully representative sample of PCPs and BHPs practicing in IPC settings. This sampling challenge is particularly difficult to overcome. Future IPC provider practice research

might address selection bias concerns by collecting data physically within clinics harnessing the power of social demand characteristics to increase response rate and achieve a more representative sample of engagement levels in IPC practice, but would be hard pressed to attain a sample drawn from across the country and across health system types.

This study obtained a broad sample of participants, relative to other relevant research, hailing from all US regions, various health organizations, and each of the major health system types (e.g., teaching clinics, CHCs, VAs, HMOs, etc.). However, several significant participant characteristics showed a rather restricted range or were not measured at all. First, this study it did not include a balanced representation from the various system types, the vast majority of participants identifying their clinic type as either a CHC or academic/teaching clinic. This restricted sample characteristic in a one of the primary study variables resulted in an inability to perform a full statistical analysis of the effect of system type on integrated practice. This sampling limitation prevented this research from contributing significant conclusions regarding which health system types may be implementing IPC practice more effectively. Second, age range proved to be another restricted sample characteristic, possibly limiting the ability to detect a significant factor for predicting integrated practices. Finally, race/ethnicity, gender identity, sexual orientation, and cultural characteristics of the participants were not measured in this study. In an attempt to construct study questionnaires as brief as possible to facilitate participant recruitment while still adequately measuring the primary research variables, items measuring participant individual diversity factors were omitted. While not the primary research variables, such factors may be important in determining effective implementation of an IPC model but cannot be adequately spoken to from the resulting data of this study.

Instrumentation issues are also an area of limitation for this study. The instrument used was designed specifically for this study and did not undergo a rigorous process of validation. Although it

had been piloted with both a PCP and BHP and the portion of the survey gathering the main dependent variable data was based on a measure used in previous research, ultimately the final structure of the survey was largely determined by this researcher based on assumptions of face validity and ease of statistical analysis of resulting data. Beyond the concerns associated with a weakly validated dependent variable measure, there may have been significant variation in how the rest of the survey items composing various independent variables or predictors were interpreted by the participants. For example, many of the PCP participants, which included both physicians and physician assistants, endorsed completing as many as 30 courses in behavioral health related curriculum during their prequalification education and training programs while the majority, including those in the same specialty as the increased BH course reporters, endorsed only zero to six courses. While it may be that there is some variation in the medical school and residency curricula between programs, it seems unlikely that the variance would be that large, suggesting the likelihood that numerous participants interpreted either “behavioral/mental health related courses” and/or “training program(s)” significantly differently than did others. This apparently inconsistent responding is likely an indicator of the inherent difficulty in developing a standard set of questions that draws comparable data across a wide variety of disciplines and training experiences.

Future Research Directions

Future research on the factors affecting IPC provider practice would do well to address several areas of investigation. First, the further development of measures studying IPC practice that can be administered to both BHPs and PCPs will likely facilitate interprofessional clinical and educational systems improvements. IPC model fidelity measures have been recently designed; however, they are intended for either BHPs or PCPs and tend to be specific to certain health system types (i.e., VAs; Funderburk et al., 2010; Beehler, Funderburk, Possemato, & Vair, 2013). While these appear to be well

constructed measures, they likely cannot offer full standardization and generalizability across system, provider, and training types. Future research could build on these and the present study's measures to further refine and validate the items, gathering more reliable and generalizable data.

Studies making direct comparisons between the IPC efforts of different health system types would serve a significant area of need in the overall body of IPC research. The VA system performs much of the IPC research to date due to special efforts to increase access of mental health services to veterans and their families that have resulted in an increased primary care behavioral health clinical services. Clinics in the VA system also enjoy the simplicity of a single payer reimbursement scheme that simplifies much of the challenges that clinics and providers face in other health systems. However, it remains unclear how much this actually results in greater ease and improved integrated practice. For example, teaching clinics in private health systems may achieve similar or better levels of integrated practice due to factors such as younger provider age or increased time and support in the care of each patient usually afforded medical interns and residents (e.g., increased visit time, preceptor supervision). Discovering the effect of health system type will likely serve to illuminate further factors that facilitate and hinder integrated practice as well as identify which health system types need more support to effectively implement IPC.

Large scale longitudinal research examining health care professionals' experiences as they complete their pre-qualification interprofessional health care training programs and go on to practice in integrated care settings, including primary care, is another important target of future investigation. By studying cohorts over time, the effects of training and education on practice will be more clearly evident above and beyond the retrospective research methods that this and most other IPE research have employed. Undoubtedly prospective methods that match or surpass the sample size of the average retrospective studies will be resource intensive, but will ultimately be of greater use when attempting to

determine the value of IPE.

Finally, with the US federal and state governments, health insurers, and health care delivery systems now moving into full implementation of the ACA, the time appears ripe to begin larger scale studies examining the clinical outcomes and cost effectiveness of IPC. As earlier stated, the ACA includes multiple rules and provisions to strengthen collaborative care, primary care, and behavioral health care. IPC will serve a significant role within these recently bolstered efforts with well-executed research helping to determine which new guidelines and resources stemming from the ACA actually result in improved patient care and affordability. Increased population utilization of preventative and maintenance services common to primary care over and above acute and crisis services such as inpatient and emergency health care as well as specific health outcome metrics (e.g., blood pressure, hgA1c, etc.) will likely be primary targets of this research. Comparing the outcomes of those clinics and health systems with IPC and those without will begin to more clearly tell the story of behavioral health in primary care.

Conclusion

Primary care serves an essential role within any well-functioning health care system. As both the front lines and the peace keeping force in health care, primary care addresses emergent, maintenance, and preventive issues across the entire spectrum of health concerns. However, primary care has literally been devalued over the past several decades with a larger and larger portion of health care dollars going to specialty and inpatient services. Such services focus on acute care leaving fewer resources for the care of chronic conditions and prevention of new disease. Many have argued that such a shift has both lead to the ballooning of overall health care costs as well as an increasingly sicker nation and so have pushed for national reform to address these imbalances.

Leading up to and continuing through the implementation of the ACA, efforts have been made to reinvigorate primary care with the maybe the most prominent being that of the Patient Centered Medical Home (PCMH) model. This model seeks to re-establish primary care as the health care hub or home base for all patients. It introduces redesigns and reinforcements to the conventional organization of the primary care clinic, pursuing greater accessibility, flexibility, accountability, and responsibility for the holistic care of patients. This increases services within the primary care clinic to include resources such as health education, case management, medication management support, and social work services to name a few. PCMH also institutes a certain set of metrics based on important health maintenance indicators such as hgA1c (long-term blood glucose levels), blood pressure, cholesterol, BMI, hospital admissions, emergency department visits, and delivery of essential health screenings. Taken together, these initiatives work to be increasingly responsive to and effective in serving the needs of the particular community that each primary clinic serves.

As most PCPs have long known, many of the above stated PCMH principles and metrics for success are highly based on patients' ability and/or willingness to engage in health services and healthy

lifestyle change. Such adaptive behaviors can be complicated by broader social challenges of low health literacy and poverty. But individual barriers also play a significant part in health engagement including personal stressors, the inherent psychosocial burden of a chronic illness, and mental health problems. The introduction of behavioral health services to the primary care team aims to address these concerns by supporting chronic disease management, increasing access and coordination of mental health services, and providing patients with personal skills to better navigate the challenges of health behavioral change.

Early research of the integration of behavioral health services into primary care (IPC) has demonstrated promising results in clinical outcomes, cost effectiveness, and patient and provider satisfaction measures. In recent years IPC has seen accelerating growth with programs moving from existing primarily in Veteran's Administration (VA) clinics to now being found in many community health centers, medical teaching clinics, large private health systems, and university health centers across the country. However, the common factors influencing successful implementation, whether they are provider, clinic, or health system based, are not clear at this time. The present study sought to illuminate these factors through recruiting from a wide-ranging sample of IPC providers and using a mix of data collection methods.

The primary results of this study suggest that education and training have little or no effect on providers' IPC practices while clinic structures and resources noted in the literature as being associated with integrated primary care clinics appear to have a large effect. Participants cited financial and reimbursement issues and a shortage of behavioral health staffing as the foremost barriers to successful implementation of IPC. These findings add to the current body of IPC research and provide further direction for both current implementation efforts as well as a basis for continued research. With hope, IPC will continue to grow and become the standard of care as it matures and refines the much needed

services it provides to individuals and communities throughout the US and beyond.

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Appendix A

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Greetings!

Please consider contributing to important research in the area of integrated primary care behavioral health by completing an online questionnaire. You will find additional study information and survey at

<http://www.surveymonkey.com/s/Primarycarebehavioralhealth>

Your participation in this study will only take 15 to 20 minutes and may help significantly shape the understanding of behaviorally integrated primary care and support improved training for future clinicians in this model of care.

Thank you!

Appendix B

BHP Survey

1. What is your sex?
 - Female
 - Male
 - Other:
2. What is your age? _____
3. In what state do you practice? _____
4. How many years have you practiced as a licensed behavioral or mental health provider? ____
5. How many years has your patient/client caseload been majority referrals from PCPs? ____
6. In what setting do you currently practice during the majority of your professional clinical hours?
 - Veteran's Administration (VA)
 - Federally Qualified Health Center (FQHC)
 - Health Maintenance Organization (HMO)
 - Large Private Health Care System
 - Independent private practice
 - Other: _____
7. In what state did you complete the graduate degree under which you primarily practice? ____
8. What degree do you primarily practice under?
 - MD
 - PhD
 - PsyD
 - MS/MA
 - LCSW
 - Other: _____
9. How many classroom courses directly relevant to practice in medical settings and/or in collaboration with medical providers did you complete during your graduate training program?

10. Approximately how much clinical training did you receive in medical settings during your training program in terms of equivalence to months of full-time training? _____
11. Approximately how much clinical training did you receive in a primary care setting during your training program(s) in terms of equivalence to months of full-time training? _____
12. Did you complete an internship or a post-doctoral residency with a major rotation or primarily based in a primary care setting?
 - Yes
 - No
13. Do you share a common clinic with behavioral/mental health providers to whom you refer patients
 - Yes
 - No
14. Do you share a common health records system with the behavioral/mental health providers to whom you refer patients?
 - Yes

- No
15. Do you share a common treatment plan with the behavioral/mental health providers to whom you refer patients?
- Yes
 - No
16. Do you routinely conduct integrated or simultaneous office visits along with behavioral/mental health providers?
- Yes
 - No

Rate your level of agreement with following statements from “Not at all (1) to “Completely” (9):

17. I routinely see patients with chronic disease for behavioral health interventions.
18. I routinely see patients needing lifestyle interventions for behavioral health interventions.
19. My schedule is designed to allow "open" space for same day appointments.
20. Medical and BHPs communicate about shared patients in-person, by phone, or e-mail on a same day basis.
21. I work to and/or encourage the appropriate providers to integrate behavioral health goals into the patient's problem oriented record and medical treatment plan.
22. Routine patient staffing and medical team meetings include behavioral health and medical providers, and routinely incorporate behavioral health data.
23. I may be asked to see or talk to a patient emergently to perform some crisis intervention.
24. I may be asked to speak with a patient regarding medication issues, like compliance.
25. *I encourage PCPs to make patient referrals by direct introduction at the time of a PCP office visit (ie, “warm hand-off”).
26. *I encourage PCPs to interrupt my scheduled sessions for urgent consults or “warm hand-off” referrals.
27. What, if any, significant barriers to the access of behavioral health services do you perceive to be present in the clinic in which you practice? _____
28. How has your education and training affected your approach to practicing in a behaviorally integrated primary care setting? _____

*Items added to survey designed by Funderburk, et al. (2010)

Appendix C

PCP Survey

1. What is your sex?
 - Female
 - Male
 - Other:
2. What is your age? _____
3. In what state do you practice?
4. How many years have you practiced as a primary care provider? ____
5. How many years have you regularly referred patients to behavioral/mental health care and interacted with those providers to whom you referred these patients? ____
6. In what setting do you currently practice during the majority of your professional clinical hours?
 - Veteran's Administration (VA)
 - Federally Qualified Health Center (FQHC)
 - Health Maintenance Organization (HMO)
 - Large Private Health Care System
 - University/Academic Health System
 - Independent private practice
 - Other: _____
7. In what stated did you complete the degree under which you primarily practice?
8. What degree do you primarily practice under?
 - MD
 - DO
 - NP
 - PA
 - ND
 - Other: _____
9. If you completed a residency to specialize in a specific area of medicine, what was that area?
 - Pediatrics
 - Family Practice
 - Internal Medicine
 - Medicine/Pediatrics
 - Psychiatry
 - Obstetrics/Gynecology
 - Other: _____
 - N/A
10. How many classroom courses directly related to behavioral or mental health care did you complete during your training program(s)? _____
11. Approximately how much clinical training did you receive in primary care settings during your training program(s) in terms of equivalence to months of full-time training? ____
12. Approximately how much clinical training did you receive in behavioral or mental health care settings during your training program(s) in terms of equivalence to months of full-time training?

13. Do you share a common clinic with the behavioral/mental health providers to whom you refer patients

- Yes
 - No
14. Do you share a common health records system with the behavioral/mental health providers to whom you refer patients?
- Yes
 - No
15. Do you share a common treatment plan with the behavioral/mental health providers to whom you refer patients?
- Yes
 - No
16. Do you routinely conduct integrated or simultaneous office visits along with behavioral/mental health providers?
- Yes
 - No

Rate your level of agreement with following statements from “Not at all (1) to “Completely” (9):

17. I routinely refer patients with chronic disease for behavioral health interventions.
18. I routinely refer patients needing lifestyle interventions for behavioral health interventions.
19. I routinely utilize the BHPs "open" space in his/her daily schedule to refer my patients for same-day BHP appointments.
20. Medical and BHPs communicate about shared patients in-person, by phone, or e-mail on a same day basis.
21. I work to and/or encourage the appropriate providers to integrate behavioral health goals into the patient's problem oriented record and medical treatment plan.
22. Routine patient staffing and medical team meetings include behavioral health and medical providers, and routinely incorporate behavioral health data.
23. *I seek out a BHP to see or talk to a patient emergently in need of a crisis intervention.
24. *I routinely refer patients to BHPs to help patient learn strategies to increase their compliance with an intervention I initiated.
25. *I routinely refer patients to BHPs by directly introducing them to BHP during an office visit (ie, “warm hand-off”).
26. *I routinely interrupt scheduled BHP office visits for urgent consults or “warm hand-off” referrals.
27. How has your education and training affected your approach to practicing in a behaviorally integrated primary care setting? _____
28. What, if any, significant barriers to the access of behavioral health services do you perceive to be present in the clinic in which you practice? _____

*Items added by this author to survey designed by Funderburk, et al. (2010)