A THREE WORLD VIEW META-EVALUATION OF INTEGRATED BEHAVIORAL HEALTH CARE

by

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Integrated behavioral health care (IBHC), the simultaneous interface of medical and behavioral health care, is an emerging solution for the delivery of behavioral health in primary care contexts. While significant scholarship has been devoted to conceptualizing integrated care, little seems to be known about how IBHC is evaluated at the clinical, operational, and financial levels. This dissertation's intent is to evaluate IBHC according to those three levels as conceptualized by Peek's Three World view (2008). The success and sustainability of IBHC depends equally on the clinical, operational, and financial worlds of healthcare. This dissertation includes a systematic review on IBHC evaluation research, and presents the methodology and results from a survey distributed nationwide to 145 medical and behavioral health providers and administrators working in IBHC primary care settings. This dissertation concludes with research, evaluation, policy, and training implications and recommendations for measuring clinical, operational, and financial outcomes of integrated behavioral health care.

A THREE WORLD VIEW META- EVALUATION OF INTEGRATED BEHAVIORAL HEALTH CARE

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DEDICATION

For my husband. We have been through so much and you made many sacrifices to support me during my graduate education, I cannot say thank you enough for your unconditional love and commitment.

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PREFACE

As a Marriage and Family Therapy master's student, I had the opportunity to complete my clinical internship at a Federally Qualified Healthcare Center as a behavioral health provider. I provided brief screening and intervention services to patients being seen by their medical providers, and I worked closely with the care team to deliver whole person care as a medical family therapist. It was during this year-long experience that I began to understand and value the biopsychosocial model (Engel, 1977). I was able to see how hundreds of patients benefitted from addressing their medical and psychosocial needs in one setting with a team of medical and behavioral health providers. This experience turned into a passion for integrating medical and behavioral health services, and that passion inspired me to pursue my doctoral degree in Medical Family Therapy.

As a doctoral student, I continued to work in integrated behavioral healthcare settings as a behavioral health provider. However, my role expanded beyond the clinical world when I started working with administrators and the medical providers to improve the quality of care for patients seen in our clinics. I worked with providers and administrators to create evidence-based screening procedures, map patient and work flow to improve wait times, introduce brief behavioral health consults, develop training manuals, and collaborate on protocols to connect patients with community resources. Through those experiences, I learned about various clinical, operational, and financial factors that were protective factors, and threats, to the success and sustainability of integrated behavioral health care.

During this time, I was also studying the Three World view (Peek, 2008) in my coursework. I started to connect systems theory (von Bertalanffy, 1968), a foundational theory to Medical Family Therapy, with the Three World view (Peek, 2008) and with my experiences as a

behavioral health provider in medical settings. I started to see the importance of holistically attending to the larger system of integrated behavioral healthcare. This means that understanding the success and sustainability of integrated care (at the patient and population health levels) has to consider all three worlds of the Three World view (clinical, operational, and financial; Peek, 2008).

Integrated behavioral health care (IBHC) has been emerging and evolving in recent years, but there is a critical question that remains- How do we know if integrated behavioral health care programs are successful or sustainable? Without learning about and understanding the clinical, operational, and financial successes and failures of integrated behavioral healthcare efforts, the movement to treat patients in primary care from a whole person perspective cannot go forward. I believe that multi-system evaluations are needed in order to better understand the clinical, financial, and operational worlds within IBHC programs. Repeated use of such measures can provide fidelity to a model, and help programs grow toward successful and sustainable IBHC programs.

My passion for data tracking and evaluation, attending to the larger system, and my experiences as a behavioral health provider have led me to this dissertation project, a Three World view meta-evaluation of integrated behavioral healthcare. My hope is that my research will fill important gaps in the literature about how clinical, operational, and financial successes and challenges of integrated behavioral healthcare programs have been determined based on evaluation(s). This dissertation will explore Three World view evaluation practices both in the literature and in real-world integrated care implementation projects. I hope that this research will be able to provide insight and information about how to evaluation clinical, operational, and financial characteristics of integrated behavioral health care, as well as propose ideas for

standard Three World view evaluation practices that any integration project can use to measure and improve the success and sustainability of their program.

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CHAPTER 1: INTRODUCTION

Healthcare organizations and practices around the United States are transforming in response to policy changes and national attention on improving the quality of health care, as well as reducing health disparities and costs (Berwick, Nolan, & Whittington, 2008; Patient Protection and Affordable Care Act, 2010). At the forefront of this transformation is primary care. Primary services care includes "health promotion, disease prevention, health maintenance, counseling, patient education, diagnosis and treatment of acute and chronic illnesses in a variety of health care settings" (American Academy of Family Physicians [AAFP], n.d.).

Primary care is the first and most frequent point of contact for the vast majority of people receiving healthcare services in the United States. As a result of primary care being the first contact for most patients' physical and mental health concerns (Peek, 2009), primary care providers (PCPs) are left to diagnose and treat a variety of disorders such as anxiety and depression (Carey et al., 2013). In fact, approximately 50% of primary care patients have a past or current mental health diagnosis (Ansseau et al., 2004; Serrano-Blanco et al., 2010; Toft et al., 2005), some of which may require frequent assessments and check-ups in order to attend to medication and symptom management.

Despite the prevalence of mental health concerns in primary care populations, there are significant barriers for medical providers who want to provide quality mental health care and medication management within their primary care settings (Carey et al., 2013). Medical providers, and their practices, often do not have the capacity or community resources to secure outpatient mental health referrals for their patients when the need is beyond what can be handled in their practice. Researchers have also shown that patients, many times, are hesitant to see a second provider (even if the provider specializes in their health care need) who is part of a

different system (Carey et al., 2013). Furthermore, primary care patients are less likely to attend an outside mental health appointment and instead choose to return to their PCP to address their mental health needs (National Mental Health Association, 2000) or continue to suffer with unmet needs.

To address the unmet behavioral and mental health needs of the primary care patient population, and as a response to the challenges of managing mental health within a primary care setting, integrated behavioral health care (IBHC) emerged as a way to deliver higher quality, whole person care. According to the Lexicon for Behavioral Health and Primary Care Integration (Peek, 2013), behavioral health integration in primary care is defined as,

> "The care that results from a practice team of primary care and behavioral health clinicians, working together with patients and families, using a systematic and cost-effective approach to provide patient-centered care for a defined population. This care may address mental health and substance abuse conditions, health behaviors (including their contribution to chronic medical illnesses), life stressors and crises, stress-related physical symptoms, and ineffective patterns of health care utilization" (Peek, 2013, p. 2).

For the purposes of this dissertation, IBHC (also referred to as "integrated care" or "integrated primary care"), refers to the practice of providing medical and behavioral health services simultaneously to patients as part of primary care treatment all within one setting. In an integrated setting, medical and behavioral health providers communicate with one another and collaborate together on patients' diverse health needs (Peek, 2013).

Significant scholarship has been dedicated to studying health needs and IBHC outcomes (Butler et al., 2008; Collins, Hewson, Munger, & Wade, 2010; Gilbody et al., 2006). Integrated behavioral health care researchers have shown that the integration of services improves the

quality and efficiency of care (Blount, 2003; Butler et al., 2008; Collins, Hewson, Munger, & Wade, 2010; Gilbody et al., 2006). However, a systematic review done by Martin et al. (2014) found most of the recent literature has focused on implementation of IBHC, particularly with targeted populations or with specific diagnoses. Almost no research has been done on models of sustainability or implementation of evaluation metrics that can help to ensure success, particularly within the realms of clinical, organizational, and financial viability (Peek et al., 2014). Simultaneously attending to the clinical, operational, and financial components of integrated behavioral health care is critical, in order to ensure successful and sustainable IBHC models. These three critical components, when conceptualized, practiced, or analyzed systemically, make up what is known as Three World view (Peek, 2008).

The Three World view (Peek, 2008) posits that equal attention and effort must be given to the clinical, operational, and financial worlds of integrated care in order for it to be successful. The three worlds are interdependent, and in the case whereby one world trumps any other, the system will likely fail. As previously mentioned, research that explores the success and sustainability of integrated behavioral healthcare programs has attended to the three worlds mostly in silos, with the majority of attention on the clinical world. What is clearly missing in the literature is an understanding of "how to make the clinical, organizational, and professional changes necessary to accomplish and sustain integration- or which of these changes yield the greatest benefits" (Peek, Cohen, & deGruy, 2014, p. 430). The missing piece for furthering the success and sustainability of integrated behavioral healthcare programs is evidence from evaluation of all three worlds of integrated care. Evaluation research, a "mostly unexplored territory," can provide critical information on the successes and failures of integrating behavioral health services into primary care, from the perspective of the clinical world, the operational

world, and the financial world (Peek et al., 2014). The goal of this dissertation is to fill this gap, and answer the following research question, "How are IBHC systems measuring their clinical, operational, and financial outcomes?"

Purpose and Design

While IBHC research and policy has gained momentum since 1995 (Katon et al., 1995), there is a need to understand how to evaluate the clinical, operational, and financial worlds of IBHC. This dissertation provides insight and understanding of evaluation processes and practices from researchers (e.g., IBHC professionals in academic or research settings who publish findings about their integrated care efforts), as well as local implementers of integrated care (e.g., professionals working in communities who are implementing integrated care to address the needs of their patient population, but not focused on disseminating knowledge). The purpose of this dissertation is to explore the clinical, operational, and financial evaluation methods used by IBHC primary care systems through systematically reviewing the literature and conducting an empirical study on real-world evaluation practices. This research identifies clinical, operational, and financial evaluation methods and provides ideas for standard Three World view (Peek, 2008) evaluation practices that any integration project can use. This dissertation begins with a literature review (chapter two) about the emergence of integrated behavioral health care and the need for evaluation, which then transitions into a systematic review (chapter three) that identifies integrated behavioral health care evaluation literature and interprets it through the perspective of the Three World view (Peek, 2008). Based on the findings in the systematic review, a methodology is proposed in chapter four to explore how level of integration, professional roles, and evaluation practices are connected in professionals working in integrated primary care settings across the United States. Chapter five is a presentation of the results of a survey (see

Appendix A for IRB approval, Appendix B for survey) of professionals working in integrated primary care settings, who were asking about the evaluation practices of their programs. This dissertation concludes with chapter six, a discussion of the implications of the findings from chapters three and five, including recommendations for best practices of evaluating integrated behavioral health care.

Overview

In more detail, chapter two presents the conceptual foundation for this dissertation, which is grounded in systems theory (von Bertalanffy, 1969) and propelled by the Three World view (from ground zero to the 100,000 foot view) (Peek, 2008). The literature review discusses health care transformation and policy changes that address the need to provide behavioral health services in primary care, and then outlines the emergence of integrated behavioral health care. Literature is presented on the need for evaluation research, and the literature review concludes with recommendations for research to improve IBHC evaluation efforts.

The systematic review presented in chapter three identifies original research on integrated behavioral health care. The selection of articles for inclusion is based on operational and financial characteristics of the evaluation research. Given that much attention and scholarship has been on clinical characteristics of integrated behavioral health care (Butler et al., 2008; Collins et al., 2010; Gilbody et al. 2006), this systematic focuses on the need to better understand operational and financial characteristics. The systematic review answers the question "What are the operational and financial characteristics of IBHC research?" Over 3,000 articles were yielded across searches of three databases, and 46 articles met the inclusion criteria. Results from the systematic review include the identification of clinical, operational, and financial characteristics evaluated in IBHC research.

The methodology proposed in chapter four is based on the results of the systematic review from chapter three. This methodology proposes a survey of medical providers, behavioral health providers, and administrators working in primary care settings in the United States with embedded behavioral health professionals. The survey asked participants to report on characteristics of their site (e.g., number and types of behavioral health providers) and Three World view (Peek, 2008) evaluation practices (e.g., whether or not the clinical outcomes of their program were being evaluated). The results from this project are presented in chapter five, which describes the clinical, operational, and financial evaluation practices from a diverse sample of sites across the United States, explores differences in the perception of evaluation practices between medical providers, behavioral health providers, and administrators, and identifies how the degree of integration is related to evaluation.

This dissertation concludes with chapter six, a discussion of the findings from chapters three and five, the systematic review and survey. Chapter six includes a description of how this dissertation fills a gap in the literature on IBHC and how this project compares to existing literature. Chapter six also includes detailed recommendations for Three World view evaluation of IBHC for researchers and real world implementers. Finally, chapter six discusses how Medical Family Therapists can play a role in furthering the evaluation efforts in IBHC.

Summary

Integrated behavioral health care has emerged as a solution to addressing the need for behavioral health services in primary care settings in the United States. While research and policy has been dedicated to the efforts of integration, much remains to be known about how to determine if integrated behavioral health care systems are successful and sustainable in the clinical, operational, and financial worlds (Peek, 2008). This dissertation fills the gap in

knowledge about how to evaluation the three worlds of integrated behavioral health care, and contributes to future policy and research efforts to improve evaluation processes in integrated primary care practices.

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CHAPTER 2: THE EMERGENCE OF INTEGRATED BEHAVIORAL HEALTH CARE AND THE NEED FOR THREE WORLD VIEW EVALUATION

Before the recent health care transformation efforts began (e.g., Patient Protection and Affordable Care Act, 2010), health care in the U.S. was suffering from significant quality problems of overuse, underuse, and misuse (Institute of Medicine [IOM], 2001). In 2001, the IOM proposed six aims for improving health care that would make it safe, effective, patient-centered, timely, efficient, and equitable. The IOM's text, called *Crossing the Quality Chasm* (2001), punctuated the need for systemic thinking to arrive at new solutions that offered both specific and holistic views to complex problems.

Primary care contexts across the United States are transforming in response to recent changes in the health care system (e.g., Affordable Care Act; Patient Protection and Affordable Care Act, 2010) and the emergence of the Triple Aim (Berwick, Nolan, & Whittington, 2008). This has received significant attention in health care reform because primary care is the first and most frequent point of contact for most patients. Primary care includes "health promotion, disease prevention, health maintenance, counseling, patient education, diagnosis and treatment of acute and chronic illnesses in a variety of health care settings" (American Academy of Family Physicians [AAFP], n.d.).

In 2007, the American Academy of Family Physicians, in collaboration with the American College of Physicians, the American Academy of Pediatrics, and the American Osteopathic Association, released joint principles for a Patient Centered Medical Home (PCMH) (Patient-Centered Primary Care Collaborative [PCPCC], 2007). The PCMH is a health care delivery system that is patient-centered, comprehensive, coordinated, accessible, and committed to quality and safety (PCPCC, 2007). This team of medical guilds provided their perspective for

better health care, also suggesting that a systemic approach, such as integrating healthcare services, was needed in order to reach better health outcomes.

Then in 2008, Berwick, Nolan, and Whittington reported that improving the healthcare system "requires simultaneous pursuit" of improving patient experience of health care, improving population health, and reducing the cost of health care. These efforts among practitioners and leaders in medicine and health care are congruent with the ongoing policies that continue to be put forth in the U.S. in relation to building a better health care system (e.g., Patient Protection and Affordable Care Act, 2010). Many organizations and funders continue to strive for a new policy, model, or map that can help to change health care for the better. Unfortunately, so little attention has been given to the fidelity or sustainability of these policies, models, or maps and as such a new chasm has emerged, one that punctuates the lack of a systemic approach to evaluating what is necessary in the practice, organization, and financial realms of integrated behavioral health care. Thus, this review: (a) provides a theoretical infrastructure, through general systems theory (von Bertalanffy, 1969) and its constructs that highlight the chasm that exists in health care, (b) details the emergence of integrated behavioral health care, (c) dovetails into the importance of taking a Three World view (Peek, 2008) (i.e., clinical, operational, an financial) to maximizing all levels of integrated care, (d) punctuates the lack of evaluation metrics that exist in better understanding the systemic strengths or pitfalls of the three worlds of integrated care, and (e) offers recommendations for future researchers who aim to develop and disseminate evaluation metrics in order to improve the health care system of tomorrow.

A Systemic Foundation for Tomorrow's Health Care

Health care is considered a complex system that is composed of patients, clinical staff, medical providers, administrators, agencies, organizations, and policymakers that all interact with one another (Cordon, 2013). The interrelationships and patterns between patient, provider, administration, financial practices, and policy can be conceptualized and understood using the principles of general systems theory (von Bertalanffy, 1969). Ludwig von Bertalanffy, a biologist and founder of general systems theory, encouraged the study of organizations or systems, rather than an analysis of parts and processes in isolation (1969). Historically, science tried to explain phenomena by reducing them to the smallest possible independent units (von Bertalanffy, 1969). Von Bertalanffy instead proposed a science of "wholeness" (1969). This study of wholeness appears in contemporary science with the study of problems of organization, phenomena that cannot be broken down into independent events, or complex interactions that cannot be understood by looking at parts in isolation (Cordon, 2013).

von Bertalanffy proposed that: (a) systems have a group of smaller parts, or sub-systems, (b) the parts relate and interact within their environment, (c) the parts make up a whole, and (d) the functioning of each part of the whole affect the group of parts as a whole system (Cordon, 2013; von Bertalanffy, 1969). von Bertalanffy's definition of a system can be easily translated and applied to health care. After all, health care is also composed of many smaller, interrelated subsystems (e.g., the patient system, organizational system, and financial system) all of which contribute to a larger, whole system (i.e., the health care system). Additionally, each subsystem affects the larger health care system. For example, if grant funding for a specialty service at a clinic (e.g., providing free dental consults) ends, the change in funding occurs in the financial

subsystem, but undoubtedly affects the entire system by also having an impact on the patients and organization.

While new practice standards and national and state policies represent a growth in the movement toward improving the delivery and cost of medical care, these practice standards and policies are often not systemic. In fact, mental health care is typically not addressed at all in medical practice standards or healthcare policies. The lack of attention for mental health in healthcare policies is shortsighted, particularly given that approximately 50% of primary care patients suffer from a mental health condition (Ansseau et al., 2004; Serrano-Blanco et al., 2010; Toft et al., 2005) and an estimated 80% of patients with a behavioral health diagnosis seek care from a primary care provider (PCP) rather than a specialized mental health provider (Miranda, Hohnmann, & Atkinson, 1994). Patients with chronic medical conditions (e.g., diabetes, cardiovascular disease, hypertension, chronic pain), which is approximately 50% of the U.S. adult population (CDC, 2015), are two to three times more likely to have a mental health condition, such as depression or anxiety (Katon, 2003; Katon, Lin, & Kroenke, 2007; Scott et al., 2007) yet struggle with barriers to care (particularly to mental health care) due to polices, such as those that prohibit same day billing (e.g., the inability to receive medical and mental health treatment on the same day due to restrictions associated with public and/or private insurance policies).

The many subsystems of health care have led to the development of silos (i.e. independent nearly non interactive entities) for physical health and mental health. Silos have been created from the differing epistemological perspectives from a variety of health disciplines (e.g., medical providers, nurses, and mental health professionals; McMurty, 2007). Medical providers have historically been trained in and function from the biomedical model, which uses

objective information to address patients' concerns (McMurty, 2007). In comparison, mental health professionals consider the psychosocial health of patients. These differences in training led to the variation and a deviation in focus among medical and behavioral health professionals when attending to patient care needs.

To address the mental health needs in the primary care patient population and forge a bridge between the physical and mental health silos, a new vision for healthcare delivery emerged. This vision was named integrated care (IC) and aligns with the tenants of general systems theory (von Bertalanffy, 1956). IBHC is designed to serve patients by simultaneously attending to biological and psychosocial concerns through the integration of medical and behavioral health services (Blount, 2003), offering a systemic lens to each patient's care. A key component of systems theory is that a change in one part of a system has the capacity to influence other parts of the system (von Bertalanffy, 1956). To provide care that treats patients as whole people, the health care system needed to adapt by recognizing that a change in medical health has the ability to influence mental health, and vice versa. Applying systems theory to health care systems shows that in order to improve the quality of care, and better address patient health needs, the delivery of physical and mental health care can no longer occur in isolation, especially when considering the unmet mental health needs in the primary care population (Ruddy & McDaniel, 2003).

The Emergence of Integrated Behavioral Health Care

The emergence of integrated care in the US, is often attributed to a unique team of professionals that believed that biological and psychosocial health care must be viewed and delivered through a systemic lens (Doherty, McDaniel, & Baird, 1996). These early pioneers of integrated care offered a way to view the interface of medical and mental health care across a

continuum from very little collaboration to a high level of collaboration and integration of services. It is important to understand the history and development of conceptualizations of IBHC, beginning with Doherty, McDaniel, and Baird (1996). Doherty et al. (1996) were one of the first to report on the types of collaboration between medical and behavioral health services. Doherty et al. (1996) considered the capacity for diverse levels of collaboration and as such developed a five level model that detailed the possible interface between medical and behavioral health care providers and services. The least collaborative system includes "minimal collaboration", in which medical and behavioral health providers have separate systems, facilities, rare communication, and little knowledge of each other's professional and practice culture (Doherty et al., 1996). The most collaborative system is "integrated," in which behavioral and medical providers share the same facility, patients, and treatment plans for all patients. According to the five-level model, there is no optimal level of collaboration. Instead, the hierarchy of the levels reflects that when there is more collaboration, there is a greater capacity of the system to handle demanding cases efficiently (Doherty et al., 1996).

In a later conceptualization of integrated care, Blount (2005) proposed that there is coordinated, co-located, and integrated care. In coordinated care, physical and behavioral health are in different locations, with separate records and treatment plans, and there is minimal contact between medical and behavioral health providers (Blount, 2005). In co-located care, medical and behavioral health services are provided in the same location, providers may share charts and treatment plans, and have moderate contact (Blount, 2005). In integrated care, services include medical and behavioral health with a single treatment plan, shared chart, and frequent contact between medical and behavioral health providers (Blount, 2005). The work of Doherty et al.

(1996) and Blount (2005) was later integrated into a classification system for integrated care by the Substance Abuse and Mental Health Services Administration (SAMHSA; 2013).

SAMHSA, in collaboration with the Health Resources and Services Administration proposed a "Standard Framework for Levels of Integrated Care" (see Heath, Wise, & Reynolds, 2013). The aim of the Standard Framework was to provide a classification method for integrated care that incorporated the various methods for classification that had been developed since Doherty et al. (1996) (i.e., Blount, 2003; Collins et al., 2010; MaineHealth, 2009; Reynolds, 2006). The Standard Framework was designed so that organizations integrating primary and behavioral health services could evaluate their degree of integration and determine the next steps to enhance integration (Heath et al., 2013). The Standard Framework has three main categories – coordinated, co-located, and integrated care, based on Blount's (2003) conceptualization. These three categories have key elements to differentiate between them: communication, physical proximity, and practice change (Heath et al., 2013). The Standard Framework also incorporates the five levels from Doherty et al. (1996), with an additional developmental level inserted between levels four and five (see Figure 1), resulting in a six-level framework for integration (Heath et al., 2013). Also in 2013, Peek operationalized integrated behavioral health care.

Peek developed an operational definition for behavioral health integration in the Lexicon for Behavioral Health and Primary Care Integration (2013). According to the Lexicon, behavioral health integration in primary care is defined as,

> "The care that results from a practice team of primary care and behavioral health clinicians, working together with patients and families, using a systematic and cost-effective approach to provide patient-centered care for a defined population. This care may address mental health and substance abuse conditions, health behaviors (including

their contribution to chronic medical illnesses), life stressors and crises, stress-related physical symptoms, and ineffective patterns of health care utilization" (p. 2).

This definition of behavioral health integration in primary care was developed after many years of scholarship and confusion around how to best define collaboration and integration.

Along with literature on conceptual components of integrated care, such as the six-level framework for integration (Heath et al., 2013), there has been a push to show the value of integrating mental health in primary care through, and as such the term integrated behavioral health care is becoming more widely used. Researchers have identified that integrated behavioral health care has been effective at addressing co-occurring mental and medical disorders (Collins, Heuson, Munger, & Wade, 2010). Additionally, researchers have shown that integrated behavioral health care has led to increased access to mental health services, a reduction in stigma and discrimination related to mental health, and positive clinical and financial outcomes from providing mental health treatment collaboratively within primary care (Ivbijaro & Funk, 2008; Nielsen, 2014).

While there is sufficient evidence for the clinical effectiveness of integrated behavioral health care in improving patient health outcomes and experiences (see Butler et al., 2008; Lemmens et al., 2015; Woltmann et al., 2012), these results alone does not fully capture its success or effectiveness. In order to systemically understand and IBHC, evaluation must include other elements of the health care system aside from the clinical impact, such as the operational and financial domains (Miller, Mendenhall, & Malik, 2009; Peek et al., 2014). Collectively, these three domains make up what is known as the Three World view (Peek, 2008). Below, the Three World view will be discussed in detail, and then applied in a discussion about the need for evaluation of integrated behavioral health care.

The Three World View and Integrated Behavioral Health Care

According to Peek (2008), the success of integrated behavioral health care depends on the clinical, operational, and financial systems surrounding it, also known as the three worlds of the Three World view. The first world is the clinical world. The clinical world is focused on the type and quality of care, whereby the unit of analysis is the patient. This clinical world captures clinical activity and the achievement of health goals within the patient population (Peek, 2008). In the clinical world, providers interact with patients to assess, diagnose, and provide treatment. The clinical world is relational, and occurs in interpersonal interactions between providers and the patients that they help. As mentioned previously, there are numerous reports on the clinical success of integrated behavioral health care (Kwan et al., 2015). Researchers have found that integrated behavioral health care is useful for the treatment and management of many targeted mental health diagnoses (e.g., depression and anxiety) in primary care (Martin, White, Hodgson, Lamson & Irons, 2014), and that integrated behavioral health care increases patient access to needed mental health services (Butler et al., 2008; Butler et al., 2011; Gilbody et al., 2006; Thota et al., 2012).

Peek's second world is the operational world. The focus of this world is in the consistency and reliability of policies and protocol, such as how care is provided and if the care delivery is well-executed (Peek, 2008). In the operational world, the operations, production, process, and system improvement of the practice are considered (Peek, 2008). Some key factors of the operational world are the processes and infrastructure involved in scheduling patients, billing and inserting codes, referrals, and the electronic medical record (Peek, 2008). Medical providers mostly function in the clinical world, but a good relationship between providers of the clinical world and the staff and administration in the operational world is critical for its success

(Peek, 2008). Research on the operational world of integrated behavioral health care has been limited, since most research has focused on the clinical outcomes of care (Kwan et al., 2015). However, research on the clinical world has captured some of the operational barriers to integrating behavioral health services into primary care. Butler et al. (2008) evaluated 33 integrated care projects and found similar operational barriers across the projects such as: (a) organizational resistance and opposition to integrating behavioral health services, (b) a lack of leadership to champion the integrated model, and (c) addressing the integration concerns of providers, staff, and administration. These operational concerns were often viewed as a threat to the success and sustainability of IBHC projects. There were also barriers identified in Butler et al.'s (2008) evaluation that related to the financial world of IBHC.

The financial world is Peek's third world of the Three World view (2008). The unit of analysis in the financial world is the numbers related to the business and financial return of the practice. The focus of the financial world is the price and value of care, and the accounting activity related to integration (Peek, 2008). This may include sending bills, collecting money, and tracking the outflow of time, materials, and money (Peek, 2008). A significant barrier to the success and sustainability of integrated care, in regards to the financial world, is securing reimbursement for integrated care services (Butler et al., 2008). Implementing integrated care and setting up a successful billing and reimbursement model, with the changes in financial procedures and policies occurring at local, state, and national levels, is one of the challenges of integrated care projects. Although navigating the billing and reimbursement logistics of the financial world have proven to be difficult, research has consistently shown that integrating behavioral health services into primary care is a cost effective way to improve the quality of care and meet whole person health needs (Kwan et al., 2015; Nielsen, 2014).

These parts and processes in each of the three worlds are representative of a system, all necessary for the success of integrated behavioral health care. In order to have a healthy and sustainable integrated health care system, health care practices need to be functioning well within and between the clinical, operational and financial worlds. The Three World view is imperative for conceptualizing practices as systems because it highlights the importance of focusing on clinical, operational, or financial factors together, rather than in isolation. The three worlds are interdependent in the process of improving health outcomes in integrated behavioral health care. Peek (2008) suggests that the three worlds must be balanced and work together for a healthy IBHC practice and in the case whereby one world trumps any other, the system will likely fail.

Research and evaluation on integrated behavioral health care have contributed to some understanding of how the clinical, operational, and financial worlds are functioning. However, little is known about how those three worlds function simultaneously, or what factors are in play within or between the worlds when a system fails or succeeds. Thus, a next step in research is to ensure that all three worlds are all being measured and evaluated for strengths and pitfalls, both within and between integrated behavioral health care systems. Attention must be given to all three worlds in order to build better and sustainable health care systems.

Evaluation of Integrated Behavioral Health Care

With varying models of integrated behavioral health care, as well as a wide variety of settings and populations, evaluation of integrated behavioral health care can be difficult, especially simultaneous evaluation of the clinical, operational, and financial characteristics of integrated care. Evaluation research, in integrated behavioral health care, is a “mostly unexplored territory” (Peek et al., 2014, p. 430). Currently, there is no uniform way to collect information on the three worlds, or standardized methods for how to evaluate each one. Outside of academic

research on integrated behavioral health care, most implementation efforts are occurring without the capacity for evaluation, or if evaluation is occurring, there is no intent to disseminate evaluation findings because they are considered only relevant to the improvement of the local organization. For example, a community health center could be implementing an integrated behavioral health care program to improve patient access to behavioral health services and help manage depression and anxiety in the patient population. This type of implementation is often led by clinical and administrative leaders who are trying to address the needs of their community, but are not focused on disseminating knowledge (Peek et al., 2014). As a result, the lessons learned about how to make clinical, operational, and financial changes needed to succeed at integration are lost for other implementers (Peek et al., 2014). The lack of evaluation metrics in integrated behavioral health care means that there is limited understanding of how the Three Worlds operate as a system to be successful and sustainable (Kessler, 2015; Miller et al,, 2009).

Three World view evaluation of integrated behavioral health care is needed to provide critical information about successful and unsuccessful processes and methods when integrating behavioral health services into primary care (Peek, Cohen, & deGruy, 2014). Evaluation measures and metrics, and the implementation of such measures, are critical in order to support quality improvement efforts of primary care practices. There is a need to evaluate integrated care models and review the evaluation measures or metrics used across various approaches (Kessler et al., 2015). In order for integration of behavioral health care to continue, there needs to be evidence from the clinical, operational, and financial worlds on how to succeed at and sustain integration. Examining and analyzing integrated behavioral health care evaluation research (i.e., published by academic implementers) and evaluation practices (i.e., practices of local implementers) could lead to the development of more rigorous and standardized evaluation

practices that capture clinical, operational, and financial characteristics of integrated care. A better understanding of evaluation will produce knowledge about how to measure success and sustainability in the clinical, operational, and financial worlds of integrated behavioral health care.

Recommendations

In order to comprehensively assess the success and sustainability of integrated behavioral health care, a systematic review is needed to identify studies conducted on the evaluation of integrated behavioral health care, particularly research that examines the evaluation of clinical, operational, and financial components of integration. Previous literature has demonstrated the effectiveness and best practices for using specific IBHC models (e.g., collaborative care), for specific populations (e.g., geriatric) or specific comorbid diseases (e.g., diabetes)(Kwan & Nease, 2013). A systematic review could provide valuable information and best practices for: (a) clinical evaluations of IBHC, (b) operational evaluations of IBHC, (c) financial evaluations of IBHC, (d) the quality of the methods used for evaluation, and (e) offer recommendations for future researchers who aim to develop and disseminate evaluation metrics in order to improve the health care system of tomorrow. There is also a need for more research and evaluation studies on IBHC that use the Three World view (Peek, 2008). Researchers should explore if and how organizations evaluate clinical, operational, and financial components of IBHC. Using the Three World view would provide more breadth and depth to the understanding of integrated behavioral health care and how to evaluate it. To determine effectiveness and sustainability of IBHC, a systemic evaluation is needed, not only of patient outcomes, but also of components of the larger system, such as providers, staff, administration, operations, and finances. Better evaluation practices and research will produce higher quality data on how IBHC impacts patient

experience, population health, and reducing costs of health care. Future research on this topic will help make a compelling case for integrating medical and behavioral health services to systemically improve the quality of health care practice and policies at the national level.

Conclusion

IBHC is emerging as a solution to addressing the behavioral health needs in the primary care population. In order for successful integration to take place, there needs to be a balance between clinical, operational, and financial factors within the system (Peek, 2008). This review of literature provided context for national policy changes that are contributing to efforts to integrate behavioral health into primary care and set forth a systemic perspective and the Three World view to best understand and evaluate integrated behavioral health care. Past evaluation of IBHC sites and programs demonstrated that patients have better clinical outcomes when receiving IBHC, but significant operational and financial barriers remain a concern (Ader et al., 2015; Butler et al., 2011; Bower, Gilbody, Richards, Fletcher, & Sutton, 2006; Craven & Bland, 2006; Gilbody, Bower, Fletcher, Richards, & Sutton, 2006; Katon & Seelig, 2008; Oxman, Dietrich, & Schulberg, 2005). Given that the operational and financial worlds are the least explored in evaluation literature, it is apparent that more research in this area of the IBHC literature is needed.

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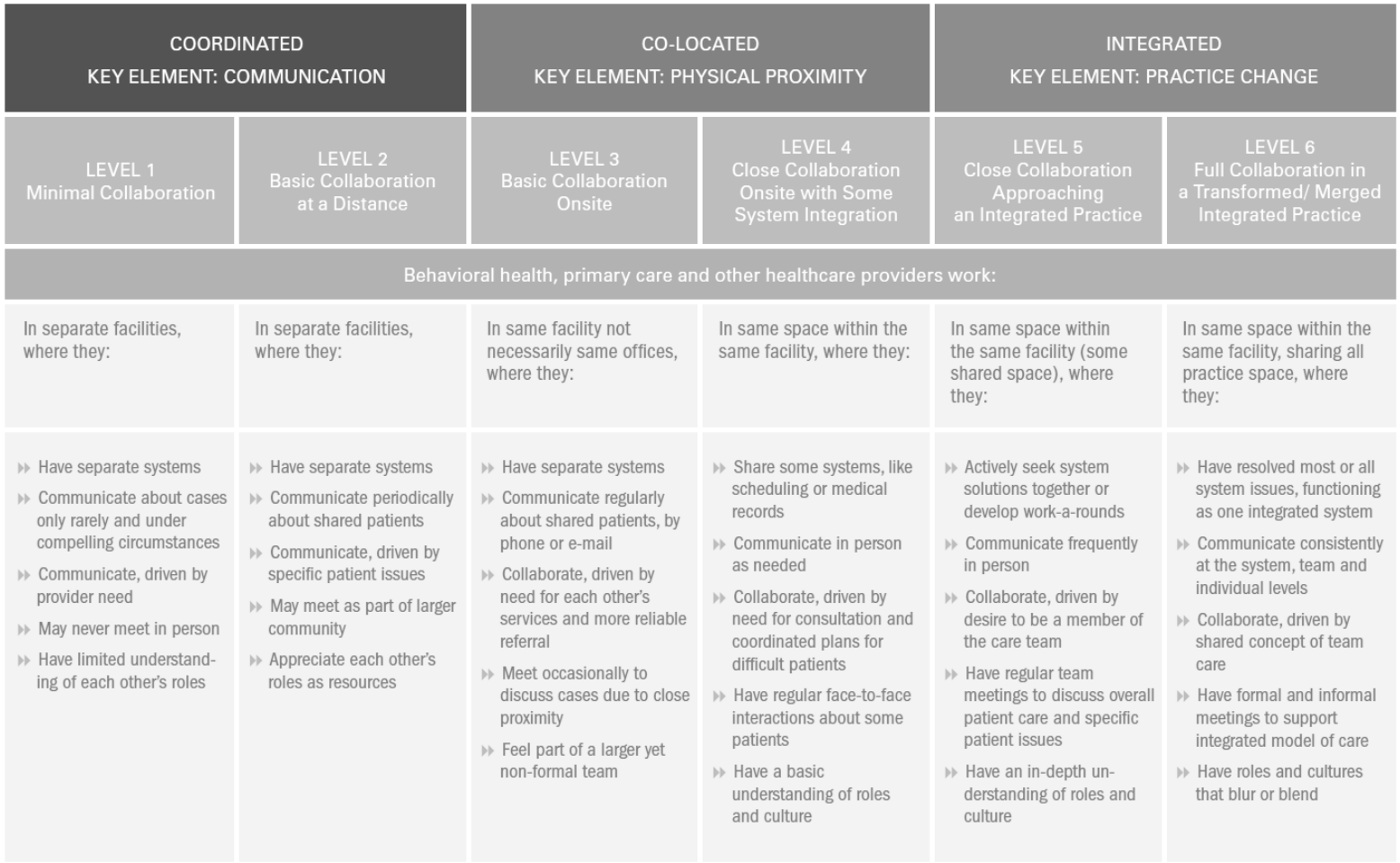
Figure 1. *A Standard Framework for Levels of Integrated Healthcare*



COORDINATED KEY ELEMENT: COMMUNICATION		CO-LOCATED KEY ELEMENT: PHYSICAL PROXIMITY		INTEGRATED KEY ELEMENT: PRACTICE CHANGE	
LEVEL 1 Minimal Collaboration	LEVEL 2 Basic Collaboration at a Distance	LEVEL 3 Basic Collaboration Onsite	LEVEL 4 Close Collaboration Onsite with Some System Integration	LEVEL 5 Close Collaboration Approaching an Integrated Practice	LEVEL 6 Full Collaboration in a Transformed/ Merged Integrated Practice
Behavioral health, primary care and other healthcare providers work:					
In separate facilities, where they:	In separate facilities, where they:	In same facility not necessarily same offices, where they:	In same space within the same facility, where they:	In same space within the same facility (some shared space), where they:	In same space within the same facility, sharing all practice space, where they:
▸▸ Have separate systems ▸▸ Communicate about cases only rarely and under compelling circumstances ▸▸ Communicate, driven by provider need ▸▸ May never meet in person ▸▸ Have limited understanding of each other's roles	▸▸ Have separate systems ▸▸ Communicate periodically about shared patients ▸▸ Communicate, driven by specific patient issues ▸▸ May meet as part of larger community ▸▸ Appreciate each other's roles as resources	▸▸ Have separate systems ▸▸ Communicate regularly about shared patients, by phone or e-mail ▸▸ Collaborate, driven by need for each other's services and more reliable referral ▸▸ Meet occasionally to discuss cases due to close proximity ▸▸ Feel part of a larger yet non-formal team	▸▸ Share some systems, like scheduling or medical records ▸▸ Communicate in person as needed ▸▸ Collaborate, driven by need for consultation and coordinated plans for difficult patients ▸▸ Have regular face-to-face interactions about some patients ▸▸ Have a basic understanding of roles and culture	▸▸ Actively seek system solutions together or develop work-a-rounds ▸▸ Communicate frequently in person ▸▸ Collaborate, driven by desire to be a member of the care team ▸▸ Have regular team meetings to discuss overall patient care and specific patient issues ▸▸ Have an in-depth understanding of roles and culture	▸▸ Have resolved most or all system issues, functioning as one integrated system ▸▸ Communicate consistently at the system, team and individual levels ▸▸ Collaborate, driven by shared concept of team care ▸▸ Have formal and informal meetings to support integrated model of care ▸▸ Have roles and cultures that blur or blend

Note. This table is available through the public domain. The aim of the Standard Framework was to provide a classification method for integrated care that incorporated the various methods for classification that had been developed since Doherty et al. (1996).

CHAPTER 3: A SYSTEMATIC REVIEW OF EVALUATION RESEARCH IN INTEGRATED BEHAVIORAL HEALTH CARE

** An adapted version of this chapter was accepted by Families, Systems, and Health for publication. It is authored by Amelia Muse, MS, Angela L. Lamson, PhD, Katherine W. Didericksen, PhD, and Jennifer Hodgson, PhD (East Carolina University).*

Integrated behavioral health care (IBHC), (i.e., the simultaneous interface of medical and behavioral health care in the delivery, operations, and billing of services), is an emerging solution for the delivery of behavioral health in primary care contexts (Blount, 1998). Doherty, McDaniel, and Baird (1996) developed a five level model of collaboration to describe the continuum of integrated medical and behavioral health services, from very little collaboration to the highest level of integration. The least collaborative system is of "minimal collaboration," in which medical and behavioral health providers have separate systems, facilities, rare communication, and little knowledge of each other's professional and practice culture (Doherty et al., 1996). The most collaborative system is "integrated," in which behavioral and medical providers share the same facility, patients, and treatment plans for all patients. Since Doherty et al.'s (1996) conceptualization of the levels of integration, there has been further development and discourse about how to conceptualize the delivery of behavioral health in primary care contexts. Blount (2005) later proposed three types of care: coordinated, co-located, and integrated, and the Substance Abuse and Mental Health Services Administration (SAMHSA) proposed an updated framework in 2013 with six levels, that used and adapted Doherty et al.'s (1996) five-level model (Heath, Wise, & Reynolds, 2013) as its basis.

While the levels of collaboration have been in existence for more than two decades, and significant scholarship has been devoted to conceptualizing integrated care (e.g., Blount, 2005; Doherty et al., 1996; Heath et al., 2013), little seems to be known about how IBHC is evaluated.

Thus, the purpose of this article is to 1) illustrate a framework for this article based on the Three World view (i.e., clinical, operational, and financial factors of integrating behavioral health services in primary care) developed by Peek (2008), 2) provide a review of the literature that exists on the systemic need for all three worlds when assessing for IBHC success and sustainability, and (3) deliver a systematic review on the existing research that evaluates IBHC efforts using the Three World view as its foundation (Peek, 2008). Operational definitions pertinent to this chapter are presented in Table 1.

The Three World View

According to Peek (2008), the success of integrated primary care depends on three factors, also known as the three worlds of the Three World view. The first world is the clinical world. The clinical world is focused on the type and quality of care, whereby the patient population serves as the unit of analysis. The clinical world captures clinical activity and the achievement of health goals within the patient population (Peek, 2008). The second world is the operational world. The focus of this world is on operational consistency and reliability, such as how care is provided and if the care delivery is well-executed (Peek, 2008). The units of analysis in the operational world are system-based; the systems involved in the operations, production, functioning, and improvement of the organization (Peek, 2008). The third world is the financial world. Funding streams or fiscally based systems are the units of analysis in the financial world (Peek, 2008). The financial world is related to the time, efficiency, and financial returns of the practice (Peek, 2008). The focus of the financial world is the price and value of care, and the accounting activity related to integration (Peek, 2008). Peek (2008) suggests that these three worlds must be balanced and work together for a healthy IBHC practice. In fact, if one world is consistently attended to above all others, the entire system is likely to fail. For this review, the

Three World view is foundational to the selection and interpretation of research and serves as the framework for analyzing the evaluation research pertaining to IBHC.

Clinical, Operational, and Financial Evaluation of IBHC

The Three World view (Peek, 2008) is critical to the measurement and evaluation of IBHC, because the sustainability of integration depends on the contributions of all three worlds. There is a paucity of literature on integrated primary care evaluation that includes all three worlds. Evaluation and outcomes from the clinical world have received the most attention, by far, compared to research pertaining to the operational and financial worlds. In 2006, Gilbody, Bower, Fletcher, Richards, and Sutton conducted a meta-analysis on 37 randomized control trials comparing collaborative care to standard care. Gilbody et al. (2006) found that collaborative care was a more effective treatment for depression compared to standard care (i.e., treatment of depression in primary care without the support of a behavioral health provider). In 2008, the Agency for Healthcare Research and Quality (AHRQ) supported a systematic review of literature on integrated primary care that identified that integrated care services are generally successful at addressing clinical needs of patient populations (Butler et al., 2008). Furthermore, Butler et al. (2008) concluded that integrating a mental health provider into primary care was clinically successful. However, the review of 33 IBHC programs revealed that there is a problem balancing clinical, operational, and financial needs of health care systems (Butler et al., 2008). This imbalance of the Three World view was identified as a barrier to the success and sustainability of IBHC programs (Butler et al., 2008), and highlights why there is a need to draw attention to the other two worlds (i.e., operational and financial).

The barriers to IBHC success and sustainability related to the operational and financial worlds were said to exist because of the inability to seek reimbursement for integrated care

services (Butler et al., 2008). Additionally, there were significant organizational barriers related to issues of change and the process of care (Butler et al., 2008). Organizational barriers included resistance to change when: (a) integrating new staff or changing staff roles, (b) asking clinical providers to modify practice style, and (c) there was a lack in leadership to champion the integrated model (Butler et al., 2008). These organizational barriers demonstrate that it is important to track and measure processes in the operational world to support success and sustainability. Despite the evidence for effectiveness in the clinical world, the 33 integrated primary care programs evaluated by Butler et al. (2008) faced significant barriers to operational and financial sustainability. This evidence from the clinical world (Butler et al., 2008; Gilbody et al., 2006) shows that in order to advance IBHC and further develop its evidence base, it is important to figure out how to measure and evaluate operational and financial IBHC processes. By evaluating the current methods and utilization of operational and financial components in evaluation research, IBHC models will be able to move forward with evidence that may assist in the success and sustainability of clinical, operational, and financial components of IBHC models.

Significance of Contribution

Evaluation research can provide critical information and highlight both successful and unsuccessful processes and methods when integrating behavioral health services into primary care (Peek, Cohen, & deGruy, 2014). There is emerging evidence to suggest that behavioral health integration improves quality of care and is cost effective (Blount, 2003, Butler et al., 2008; Carey et al., 2010; Craven & Blank, 2006). However, the clinical, organizational, and financial changes necessary to accomplish and sustain integration are not yet known (Peek et al., 2014). Evaluation is critical in supporting quality improvement efforts of primary care practices. Through evaluation, the success and sustainability of IBHC models can be illustrated. In an ideal

evaluation, clinical measurement would capture patient health, operational measurement would capture how well, consistently, and reliably care is being delivered, and financial measurement would capture if the integrated care system is financially sustainable (Peek, 2008). However, research on the operational and financial characteristics of IBHC must first be identified.

Research Question

This systematic review intends to identify the existing research on non-clinical evaluation of IBHC models. Thus, the research question posed for this study is: "What are the operational and financial characteristics of IBHC research?" This article will systematically review the literature and analyze the methods, participants, and variables used in IBHC research. This review will specifically capture the operational and financial characteristics that are being used to evaluate success and sustainability of IBHC models and programs. This study is the first of its kind to examine operational and financial characteristics of IBHC research through the Three World view (Peek, 2008).

Method

This systematic review identifies original reports of research that include an evaluation or assessment of operational and financial variables within IBHC models or contexts. This study adheres to the search and evaluation methods outlined in Cooper (2010).

Procedure

A seven-step model for research synthesis, proposed by Cooper (2010), was used for this systematic review. The first step in the seven-step model involved formulating the problem, which was to address the gap in literature on IBHC evaluation by identifying IBHC research that included operational or financial evaluations. The second step was to search the literature for IBHC research. This step was completed using the following databases: Medline via PubMed,

PsycINFO via EBSCO, and Healthstar via OVID. These databases were selected because of their focus on healthcare, behavioral health, and healthcare delivery, respectively. Rather than searching for studies specifically focused on evaluation, the researcher decided to search for all research related to behavioral health integration in primary care. For example, the primary researcher searched for "behavioral health integration" rather than "evaluation of behavioral health integration." This decision was made so that a larger sample of IBHC research could be reviewed in order to determine if there were operational and financial characteristics captured through a variety of research articles. The keywords for each search were selected in order to yield the maximum number of articles related to IBHC research. Furthermore, search terms were customized for each database based on major subject headings that were unique to each database. The searches were conducted from January through March of 2016. A filter was not placed on the date of the studies included in the review, since no review on this topic had been previously conducted. Table 2 outlines the search terms used for each database, the total yield of articles from each search, and the articles selected based on a review of the abstract.

Step three and four of the research synthesis involved gathering information from each article and evaluating the quality of each study (Cooper, 2010). These steps were completed by reviewing titles and abstracts in order to determine which articles were eligible for a full review. This systematic review included articles that:

1) Contained evaluation (formal or informal) of the success and/or sustainability of at least one primary care site that had a behavioral health consultant/provider working as part of an integrated behavioral healthcare model.

2) Had a behavioral healthcare provider whose primary professional identity was as a mental health professional (e.g., counselor, psychologist, family therapist, psychiatric nurse, psychiatrist).
3) Included evaluation of operational or financial variables (whether formal (e.g., program evaluation) or informal (e.g., observational report).
4) Were from an English-language journal or database.
5) Were considered original research (i.e., not literature reviews, systematic reviews, or theoretical articles).

Titles were first evaluated to see if they might meet the inclusion criteria described above, and were included for an abstract review, if the title indicated that the article potentially met inclusion criteria. The abstract was reviewed to determine whether the article met inclusion criteria. Articles were then categorized as "include for full review" or "exclude." Secondary reviewers were used in two phases of the review process. One secondary reviewer assessed all titles and abstracts from the searches conducted in the Medline via PubMed database. The primary researcher also reviewed the titles and abstracts for inclusion and deliberated with the secondary reviewer on all disagreements ($N = 3$) until consensus was met.

After compiling all articles that met the inclusion criteria based on the abstracts, all duplicates were excluded. After removing duplicates, the remaining articles underwent a full review (step five of Cooper's method) to confirm that the article met the inclusion criteria, and to analyze and integrate the findings from the studies. The primary researcher reviewed all of the articles included in the full review process. A secondary reviewer examined approximately 23% of the articles during the full text review process to ensure that articles that were selected met inclusion criteria. The primary researcher and the secondary reviewer reached consensus on

inclusion and exclusion decisions for the sub sample of articles that underwent secondary review. A fourth database, CINAHL, was cross-checked to ensure that it did not yield articles that met the inclusion criteria that were not yielded by the other databases. The cross-check of results from CINAHL did not produce any articles meeting inclusion criteria that were not found from the other three databases.

During the full review process, a comparative method was used to identify evaluative characteristics from the articles. In the full review of articles, operational and financial characteristics were coded for each article by the primary researcher. A new code was created if a new characteristic was discovered. After all the articles' characteristics were coded, the primary researcher and a secondary reviewer discussed how to cluster characteristics under the operational and financial worlds, and deliberated to reach consensus about the clusters. A flow chart outlining the search and review process can be seen in Figure 1. Reference lists of reviewed articles were then searched to find any other articles that fit the criteria. Step six, (i.e., interpreting the findings) and step seven (i.e., presenting the results) are detailed below (Cooper, 2010).

Results

A total of 3,386 articles were found through the selected databases. All of the titles were reviewed to see if they were related to the topic and could potentially match the inclusion criteria. After reviewing all of the titles, 2,829 articles were excluded and the abstracts of 557 articles were reviewed. Based on the abstracts, the researchers found that 294 of the 557 reviewed abstracts did not meet inclusion criteria. These 294 articles were excluded, with 263 articles that met the inclusion criteria based on the abstract. Before conducting a full text review, the results were pooled across databases in order to eliminate duplicate articles (i.e., instances

where the same article appeared in more than one database). Seventy-nine articles were excluded because they were duplicates within the search results. The remaining 184 articles' full texts were extracted from the databases for review.

During the full review process, an additional 143 articles were excluded because the articles did not meet inclusion criteria. The most common reason for exclusion after full review was because the article was not an original research study, but instead was a description of a program or model. These articles did not have a research design or any operational or financial measures. This information was not able to be determined from the initial review of titles or abstracts and thus these articles were not excluded until the full review process. The reference lists of the 43 articles that were included after full review were searched to find any other articles that fit inclusion criteria. Searching the reference lists yielded five additional articles. A total of 46 articles were included in the final analysis of the systematic review.

In the final group of 46 articles, the publication dates ranged from 2003 to 2016. Table 3 and Figure 2 show the distribution of articles by clinical, operational, and financial characteristics. Nine studies had operational-only characteristics; one study had financial-only characteristics, four studies had operational and financial characteristics, 13 studies had operational and clinical characteristics, six studies had financial and clinical characteristics, and 15 studies had clinical, operational, and financial characteristics. Table 4 shows the codes used to analyze the articles along with frequencies. This table is also sorted by characteristics.

Study Characteristics

The articles in this review varied significantly in terms of the type of sites included in each study and the types of samples that were used. During the full text review process, the

primary researcher coded the type of primary care site that was studied, the samples used in the research, and the methods used.

Site identity. Of the 46 articles included in this review, 19 of the articles included primary care sites that were not otherwise specified. The remaining sites were all primary care contexts that included specific descriptors: 11 of the articles were about sites that identified as primary care within the Veteran's Health Administration, seven were about Federally Qualified Healthcare Centers (FQHCs), three were family medicine practices, three were community health centers, two were international primary care sites, two were about pediatric primary care sites, two were about university health centers, two were about university student health centers, one was about a site that was identified as a patient-centered medical home (PCMH), and one was a U.S. Air Force primary care site. Seven of the articles identified more than one primary care site in their sample.

Samples. The unit of analysis for the studies included in the systematic review varied. The majority of studies (N = 35) reported that their sample consisted of individuals (i.e., patients, administrators, behavioral health consultants), while 13 studies reported that their sample included a number of sites, and used site-level data (Blasinsky, Goldman, & Unützer, 2006; Davis et al., 2013; Gurewich, Prottas, & Sirkin, 2014; Jones & Ku, 2015; Kessler et al., 2014; Lardiere, Jones, & Perez, 2011, McGovern, Urada, Lambert-Harris, Sullivan, & Mazade, 2012; Oppenheim et al., 2016; Padwa et al., 2012; Padwa et al., 2016; Pourat, Hadler, Dixon, & Brindis, 2015; Nover, 2014; Wiley-Exley, Domino, Maxwell, & Levkoff, 2009). Of the individual-level samples, the majority of samples were composed of behavioral health consultants (BHCs) and/or primary care providers (PCPs), and/or patients. Fourteen studies included behavioral health consultants (BHCs) in their sample (i.e., psychologist, social worker,

family therapist), nineteen studies included primary care providers (PCPs), and fifteen studies included patients in their sample. Other, less common, samples were with clinic staff (i.e., medical assistants, receptionists), key informants in the sample (i.e., principal investigators, supervising psychiatrist, and case managers), healthcare system administrators, and program directors. Nineteen studies used more than one type of participant in the sample (e.g., PCPs and BHCs). Overall, there were six types of samples (patients, administrators, BHCs, psychiatrists, sites, and patients) used in the 46 studies evaluated for this review. This demonstrates that there is significant variability in the types of samples and data that is used in IBHC research. Similarly, these studies varied widely in the methods used to research IBHC program success and sustainability.

Methods of Evaluation

The methods used in IBHC research articles are important to know in order to be able to capture the current and common practices for IBHC evaluation research. Broad labels were first assigned to the 46 studies that were reviewed. These general labels were quantitative, qualitative, mixed methods, program evaluation, and case studies. The majority of the studies used quantitative methods (N = 29). However, nine studies used qualitative methods, eight studies used mixed methods, two articles used case studies (Gurewich et al., 2014; Oppenheim et al., 2016), and one study used a formal program evaluation method (Sutliffe, 2007).

Once the general methods were identified, more specific methods were pinpointed. There were nine specific methods used within the studies. Twenty-one articles included a survey for data collection, fourteen articles included an interview portion, six studies used a review of patient medical records and charts and four studies used site visits as part of the methodology (Blasinsky et al., 2006; Davis et al., 2013; McGovern et al., 2012; Padwa et al., 2012). Less

frequent data collection methods included using a review of appointment logs and service records (Perkins, Roberts, Sanders, & Rosen, 2006; Possis et al., 2016; Sadock, Auerbach, Rybarczyk, & Aggarwal, 2014), process evaluation method (Gallo et al., 2004; Pourat et al., 2015), observational methods (Gouge, 2013), focus groups (Chomienne et al., 2013), and review of grant proposals (Blasinsky et al., 2006). Similar to the site and sample characteristics, many of the articles included in this review reported multiple types of methods (N = 15) in the data collection process.

The broad and specific methods that were identified in the 46 articles are important because they provide information about how IBHC research information is collected. Site visits (Blasinsky et al., 2006; Davis et al., 2013; McGovern et al., 2012; Padwa et al., 2012) and interviews (N = 14), for example, tended to provide more in depth information about IBHC process outcomes. Observational (Gouge, 2013) and appointment review (Brawer, Marielli, Pye, Manwaring, & Tierney, 2010; Calkins, Michelson, & Corso, 2013; Funderburk et al., 2010; Guck, Guck, Brack, & Frey, 2007; Sadock et al., 2014; Weiss & Schwartz, 2012) methods, on the other hand, provided more concrete data on practice level outcomes, such as the practice's ability to connect behavioral health services to their patient population.

Methods using formal evaluation tools. While many of the IBHC studies included interviews or surveys to assess target variables, only six of the 46 studies used a formal evaluation or assessment tool as part of the method (Jones; 2015; McGovern et al., 2012; Mullin, 2006; Nover, 2014; Padwa et al., 2016; Possis et al., 2016). The other 42 articles did not report the use of an evaluation tool. The tools used within these six studies were the Assessment of Behavioral Health Services in Federally Qualified Health Centers (Jones & Ku, 2015), the Dual Diagnosis Capability in Health Care Settings (DDHCS; McGovern et al., 2012), the Assessment

of Chronic Illness Care (ACIC; Bonomi, Glasglow, Wagner, Davis, & Sanhu, 2000), the Sample Report Card for Integrated Primary Care Behavioral Health Programs (Strosahl, 1997), the Behavioral Health Integration in Medical Care (BHIMC) tool (McGovern et al., 2012; Substance Abuse and Mental Health Service Administration [SAMHSA], 2015), and the Primary Care Mental Health Integration (PCMHI) Training Evaluation Form (U.S. Department of Veterans Affairs, Veterans Health Administration, Primary Care-Mental Health Integration Program Office, 2012). The Assessment of Behavioral Health Services in Federally Qualified Health Centers (Jones & Ku, 2015), the DDHCS (McGovern et al., 2012), and the BHIMC (McGovern et al., 2012; SAMHSA, 2015) were the only three that contained clinical, operational, and financial assessment characteristics. The Sample Report Card for Integrated Primary Care Behavioral Health Programs (Strosahl, 1997), ACIC (Bonomi et al., 2000), and the PCMHI Training Evaluation Form contained only operational and clinical assessment characteristics. No known research exists on the reliability or replicability of these measures in IBHC published research.

Operational, Financial, and Clinical Characteristics

During the full review process, the constant comparative method (Glauser & Straus, 1967) was used to code all clinical, operational, and financial characteristics from the articles. Codes were created (in vivo) throughout the entire review process. During a review of an articles, characteristics were compared and matched to existing codes. A new code was created if a new characteristic was discovered. After all of the articles' clinical, operational, and financial characteristics were coded, the primary researcher and a secondary reviewer discussed how to cluster characteristics under the operational and financial worlds, and deliberated in order to

reach consensus about the clusters. The characteristics and clusters identified in the body of the IBHC research articles are discussed below.

The Operational World

Characteristics of the operational world were related to how service was provided, and the execution of services. Peek (2008) describes the operational world as processes related to the systems, operations, and production of care. In the studies evaluated for this review, nine operational characteristics were identified. These characteristics were sorted into two clusters: provider level operations and practice level operations. There were two provider level operational characteristics and seven practice level operational characteristics. These two clusters show that there are important characteristics in the provider and practice systems within the operational world that have been captured in IBHC research.

Practice level operations. The characteristics that were sorted into the cluster of practice level characteristics were: organizational barriers, charts and treatment plans, implementation, proximity, referral practices and methods, scheduling practices and logistics, and space sharing. These characteristics were clustered into practice level operations because they occur, and are determined by, processes outside of the patient system, and were interpreted as factors that influenced the operations of the practice more so than the operations of the provider. Descriptions of the practice-level operational characteristics are described below.

Organizational barriers. Ten articles included in this review contained an evaluation of barriers in the organizational system impacting integration (Beehler & Wray, 2012; Blasinsky et al., 2006; Davis et al., 2013; Ellison, 2014; Gurewich et al., 2014; Kessler et al., 2014; Oppenheim et al., 2016; Padwa et al., 2016; Rajala, 2014; Sanchez, Thompson, & Alexander, 2010). Organizational barriers were assessed using survey and interview methods. Examples of

barriers include time and clinic flow (Beehler & Wray, 2012), cultural differences between providers Davis et al., 2013), support from leadership (Davis et al., 2013), and time and appointment availability of BHCs (Gurewich et al., 2014; Kessler et al., 2014). The assessment of organizational barriers showed that the success and sustainability of IBHC programs was dependent on executing organizational changes and fostering support for the IBHC program within the practice and practice leadership.

Charts and treatment plans. The sharing of charts and treatment plans was identified as a practice-level variable that was related to the level of integration between medical and behavioral health providers. Seven articles included an evaluation of shared charts and treatment plans (Jones & Ku, 2015; Lardiere et al., 2011; Oppenheim et al., 2016, Padwa et al., 2016; Padwa et al., 2012; Pourat et al., 2015; Sanchex, 2010). For this operational characteristic, the researchers assessed whether or not medical and behavioral health providers shared charts and treatment plans for patients. This characteristic was typically related to the level of integration of the practice and the efficiency of collaboration between medical and behavioral health providers.

Implementation. Implementation was an operational characteristic identified in the review of articles. Seven articles included an evaluation of implementation processes and strategies (Cully et al., 2012; Davis et al., 2013; Funderburk, Fielder, DeMartini, & Flynn 2012; Knowles et al., 2013; McGovern et al., 2012; Oppenheim et al., 2016; Rajala, 2014). Implementation was related to how well the organization, system, or providers were adhering to an integration model. Clinicians were asked through an interview format how successful the implementation was (Cully, 2012; Funderburk et al., 2012) or how effective they thought the implementation was of the integrated care model (Davis et al., 2013; Knowles et al., 2013). Through this characteristic, an evaluation of implementation was provided on the perceptions

about the success of the implementation process as well as how perceptions differed based on the provider's roles. For example, medical providers and BHCs differed in their perspective on the success of IBHC implementation. Through these studies, BHCs commonly believed that the implementation was less successful compared to PCPs.

Proximity. Five studies were evaluated on proximity of medical and behavioral health providers within their setting (Calkins et al., 2013; Ellison, 2014; Funderburk, Dobmeyer, Hunter, Walsh, & Maisto, 2013; Gurewich et al., 2014; Sanchez et al., 2010). These studies examined how proximity impacted referral processes (Calkins et al., 2013; Ellison, 2014) and collaboration (Funderburk et al., 2013). These studies showed that referrals and collaboration were more successful when PCPs and BHCs had closer physical proximity.

Referral practices and methods. Eleven of the 46 articles included an assessment of referral practices and methods. (Burfeind, Seymour, Sillau, Zittleman, & Westfall, 2014; Davis et al., 2013; Ellison, 2014; Gurewich et al., 2014; Pratt, DeBerard, Davis, & Wheeler, 2012; Sadock et al., 2014; Sutliffe, 2007; Todahl, Linville, Smith, Barnes, & Miller, 2006; Vickers et al., 2013; Westheimer, Steinley-Bumgarner, & Brownson, 2008). Assessments of referral practices and methods included referral method preferences (e.g., by email or pager) (Burfeind et al., 2014; Pratt et al., 2012) and preferred referral methods when BHCs were occupied with other patients at time of need (Davis et al., 2013). The evaluations of referral practices and methods provided evidence that face-to-face referrals (e.g., warm handoffs when the PCP introduced the BHC to the patient) were preferred by BHCs and PCPs, and were typically more successful than alternate referral methods (e.g., flags in the medical record for the BHC).

Scheduling practices and logistics. Four studies included an assessment for scheduling practices and logistics (Beehler & Wray, 2012; Davis et al., 2013; Kessler et al., 2014; Sadock et

al., 2014). This operational characteristic was related to the scheduling process of BHCs (Beehler & Wray, 2012) including barriers to scheduling and open access scheduling, the need for same-day appointments (Kessler et al., 2014). In addition, alignment of medical and behavioral health providers' schedules was assessed in one study (Sadock et al., 2014). Evaluation of scheduling practices and logistics showed that IBHC was more successful when BHCs had more open time in their schedules for consultation services, rather than having schedules filled with traditional appointments.

***Space sharing*.** One study evaluated the space shared between BHCs, PCPs, and their respective patients (Funderburk et al., 2013). This study examined how the patients being seen by BHCs shared the same waiting space with patients waiting to be seen by PCPs, and how BHCs' office space was within the clinic alongside PCPs offices (Funderburk et al., 2013). This assessment of space sharing showed that there was a higher level of integration (i.e., level four or five; Doherty et al., 1996) when there was more space sharing between PCPs and BHCs.

Provider level operations. Two provider level operations were identified: collaboration and communication. These two clusters were interpreted as aligned with the provider level of the operational system, because they are largely influenced by provider activity, decisions, and behavior. These two characteristics also occur outside of the patient system (i.e., these characteristics are not related to patient provider interaction, but rather provider to provider interaction). Although only two provider level characteristics were identified, these two characteristics are integral to the process of IBHC, and provide valuable information about the operational world of IBHC. Descriptions of the provider-level operational characteristics are below.

***Collaboration*.** Collaboration was identified as an operational characteristic, and was evaluated in nineteen of the articles (Brucker & Shields, 2003; Burfeind et al., 2014; Chomienne et al., 2013; Funderburk et al., 2013, Funderburk et al., 2012; Funderburk et al., 2010; Gallo et al., 2004; Jones & Ku, 2015; Knowles et al., 2013; Kolbasovsky, Reich, Romano, & Jaramillo, 2005; Mullin, 2006; Nover, 2014; Padwa et al., 2016; Padwa et al., 2012; Perkins et al., 2006; Possis et al., 2016; Pratt et al., 2012; Todahl et al., 2006; Vickers et al., 2013). Collaboration was an evaluation of the time and frequency of collaborative activities between PCPs and BHCs. In these studies, collaboration indicated the extent to which PCPs and BHCs worked together on the treatment of patients. When there was a high level of collaboration in these studies, there were successful clinical outcomes for patients, compared to when there was less frequent collaboration between BHCs and PCPs.

***Communication*.** Communication, the second provider-level operational characteristic, was distinct from collaboration, because it was related to the communication methods between PCPs and BHCs. Communication captured how medical and behavioral health providers interact with one another. There were 15 articles that included an assessment of communication (Beacham, Herbst, Streitwieser, Scheu, & Sieber, 2012; Beehler & Wray, 2012; Burfeind et al., 2014; Davis et al., 2013; Ellison, 2014; Funderburk et al., 2013; Jones & Ku, 2015; Karlin & Karel, 2014; Lardiere et al., 2011; Oppenheim et al., 2016; Padwa et al., 2016; Possis et al., 2016; Pourat et al., 2015; Pratt et al., 2012; Urada et al., 2012; Weiss & Schwartz, 2012). Examples of communication include interactions via curbside consults (Possis et al., 2016), warm handoffs (Possis et al., 2016), shared meetings (Karlin & Karel, 2014), and co-treatment planning (Jones & Ku, 2015). These evaluations of communication provided information on the

types of communication that PCPs and BHCs were using in IBHC programs, and how communication methods impacted the implementation of IBHC.

The Financial World

Similar to the operational world, the clusters identified within the financial world provide previously unknown information about the depth and complexity of the financial world in IBHC research. In the studies evaluated for the financial world, eleven financial characteristics were identified. These characteristics were sorted into three clusters: patient level financial characteristics, IBHC provider level financial characteristics, and IBHC system level characteristics. There were three characteristics identified at the patient level, four identified at the IBHC provider level, and five identified at the IBHC system level.

Patient level financial characteristics. The financial characteristics identified at this level were financial and temporal costs that occur due to patient presence, absence, and wait times in the IBHC system. .For all of the patient level financial characteristics, the characteristic was evaluated in terms of how the patient level cost was related to the implementation of IBHC.

No show rates. No show rates were assessed as a way to evaluate efficiency and use of time and space in schedules. One study compared no show rates of patients in co-located, coordinated, and typical care settings (Guck et al., 2007). Overall, the assessment of no show rates demonstrated that the rates decreased when a BHC was present (Guck et al., 2007).

Patient volume. Gouge (2013) was the only study that examined patient volume. This study examined how the number of patients seen per day in a primary care clinic changed on days when BHCs were present compared to days when BHCs were absent. The evaluation of patient volume demonstrated that the patient volume was higher on days when BHCs were present (Gouge, 2013).

Patient wait time. Two studies examined the time savings that occurred when a BHC was integrated into patient care. Gouge (2013) evaluated the non-care wait time of patients on clinic days when a BHC was present and compared the time to days when a BHC was absent. Sutcliffe (2007) measured the time it took for patients to access services when a BHC was involved in care. These evaluations of patient wait time demonstrated that IBHC decreased the time patients waited to be seen by providers (Gouge, 2013), and the time it took for patients to access mental health services (e.g., from internal and external referrals; Sutcliffe, 2007).

IBHC provider level financial characteristics. The provider level financial characteristics were identified as financial and efficiency assessments. These assessments were related to the providers involved in the IBHC model, namely the involvement of the behavioral health providers. For this cluster of characteristics, the behavioral health providers' time and value were assessed using survey, interview, and observational methods. Evaluation of provider characteristics showed how providers influence time, costs, and efficiency of IBHC systems. Identification of these characteristics also showed how to improve efficiency at the provider level, and important barriers to consider for IBHC provider efficiency.

Behavioral health consultant distribution of time. One study included an evaluation of the BHC's distribution of activities throughout the day and how time was spent within the activities (Karlin & Karel, 2014). This study assessed the distribution of BHC work time, and amount of time spent in various professional activities (i.e., consulting, team meetings; Karlin & Karel, 2014). This evaluation showed that BHCs experience difficulty balancing reimbursable time, such as seeing patients, with non-reimbursable time, such as attending provider meetings.

Length of BHC encounter. One study examined the length of BHC encounters (Brawer et al., 2010). This study evaluated the amount of time BHCs spent during brief consultation

encounters. This evaluation was important because it spoke to the efficiency of the BHCs, and the BHCs' fidelity to the IBHC model. BHCs had high fidelity to the IBHC model and were able to be productive in brief consultation when they spent an average of 30 minutes or less with patients.

Workforce development. Recruitment and retention of behavioral health providers was a provider level financial characteristic that was identified in six studies (Burfeind et al., 2014; Davis et al., 2013; Gurewich et al., 2014; McGovern et al., 2012; Perkins et al., 2006; Sanchez et al., 2010). These studies assessed the challenges related to workforce development and sustaining IBHC services. In studies that evaluated the sustainability of IBHC programs, sites reported that there was a high turnover with BHCs, or that there were not BHCs in their geographical region available to hire. These were barriers to sustaining the IBHC program.

IBHC system level financial characteristics. Similar to the provider level characteristics, the system level financial characteristics also attended to financial and efficiency evaluations. For the system level financial characteristics, described below, studies evaluated financial processes of the practice, costs of the IBHC program, and larger system level (i.e., state, federal) financial policies, practices, or barriers related to reimbursement. The assessment of system level financial characteristics showed that success and sustainability of IBHC programs is dependent on the inclusion of the financial world (i.e., these results showcased the pivotal role of finances in the Three World view of IBHC).

Cost analysis. Four studies included an analysis of costs related to providing integrated behavioral health services (Bremer, 2003; Liu et al., 2003; Oppenheim et al., 2016; Wiley-Exley et al., 2009). These studies examined how the cost of integrated care services compared to the cost of services for screening-only and no integrated services (Bremer, 2010), the cost of IBHC

treatment and intervention (Liu et al., 2003), the cost of collaborative care services (Liu et al., 2003), and the cost-effectiveness of IBHC (Wiley-Exley et al., 2009). These evaluations showed the importance of factoring in non-reimbursable activities, such as team meetings and follow up phone calls, in cost analyses of IBHC. Additionally, these costs analyses showed that IBHC reduces overall costs of care.

Reimbursement. Nine studies evaluated reimbursement strategies and processes for primary care sites (Burfeind et al., 2014; Ellison, 2014; Kessler et al., 2014; Lardiere et al., 2011; Oppenheim et al., 2016; Pourat et al., 2015; Sanchez et al., 2010; Todahl et al., 2006; Weiss & Schwartz, 2012). In these studies, researchers assessed the lack of payment methods for behavioral health services (Burfeind et al., 2014), barriers for reimbursement (e.g., same-day billing policies; Ellison, 2014; Kessler et al., 2014; Lardiere et al., 2011; Oppenheim et al., 2016; Sanchez et al., 2010), and activities that were reimbursable (Pourat et al., 2015). Reimbursement was a strong indicator of sustainability for IBHC. If IBHC programs were not able to receive reimbursement for IBHC services, the programs had to find alternate funding methods (e.g., grant funding) to pay for the BHCs.

***Revenue*.** Two studies reported on an assessment for revenue generated from behavioral health services (Gouge, 2013; Weiss & Schwartz, 2012). Weiss (2012) analyzed patient encounters and reimbursement and calculated total annual revenues for having a co-located psychiatrist. Gouge (2013) compared the revenue generated on clinic days when BHCs were present compared to clinic days when BHCs were absent. These studies found that significant revenue was generated from including a co-located psychiatrist and having BHCs present.

***Financial sustainability*.** Financial sustainability was another characteristic identified across the articles. Four studies reported on an evaluation of financial sustainability (Blasinsky et

al., 2006; Padwa et al., 2016; Padwa et al., 2012; Pourat et al., 2015). These studies interviewed or surveyed sites to determine strategies and barriers to financial sustainability. The researchers explored what funding strategies the sites tried, and what barriers existed, to continue integrated behavioral healthcare services (Padwa et al., 2016; Padwa et al., 2012). These evaluations identified that sites that were not able to pay for the costs of BHCs through reimbursement commonly sought grants to secure funding for their BHCs.

Billing codes and procedures. Two articles reviewed billing codes and procedures (Chomienne et al., 2013; Oppenheim et al., 2016). Oppenheim (2016) assessed the billing processes that were being used by IBHC programs. Chomienne et al. (2013) audited doctors' billing codes to determine how IBHC impacted the frequency of mental health codes being used by PCPs. These studies found that billing codes for mental health concerns were used less frequently by PCPs when BHCs were present, indicating the BHCs addressed the mental health concerns and providers were able to focus on medical concerns during their visits with patients.

Clinical Evaluation

Although clinical evaluation was not the focus of this systematic review, the clinical characteristics were coded for all 46 studies included in this review. Thirty-four of the 46 studies included in this review had at least one clinical component. The majority of clinical characteristics were related to patients' access to behavioral health care, presenting mental health concerns, improvement of mental health symptoms over IBHC implementation time, and treatment methods used by behavioral health providers in IBHC. A common clinical characteristic ($N=7$) was the assessment of how often patients were referred for mental health services and how successful the referrals were (i.e., of patients who were referred for behavioral health services, how many attended an appointment with a BHC). Less frequent clinical

characteristics in this sample of articles were medical and behavioral health providers' competency in addressing mental health, patient satisfaction, and prescription patterns before and after IBHC implementation. Clinical categories were not constructed for this article because the primary focus of this article was on the operational and financial worlds. The types of evaluations used for the clinical world of IBHC have been thoroughly captured in two articles mentioned previously in this paper. The first was a meta-analysis on 37 randomized control trials comparing collaborative care to standard care (Gilbody et al., 2006), and the second was a systematic review of 33 IBHC programs (Butler et al., 2008). Gilbody et al. (2006) and Butler et al. (2006) have already thoroughly evaluated the clinical world of providing integrated or collaborative behavioral health services, allowing greater attention in this article on the operational and financial worlds.

Discussion

This review was able to apply the Three World view (Peek, 2008) to IBHC on a meta-level. This review focused on the "how" of IBHC research, rather than the "what." This article contributes valuable information to medical and mental health fields about evaluative characteristics of IBHC research. Nine operational and eleven financial characteristics were identified in a 46 article sample of IBHC research.

In addition to identifying the operational and financial characteristics, this review was able to capture important clusters within the operational and financial worlds. These clusters (provider level operations, practice level operations, patient level financial characteristics, provider level financial characteristics, IBHC system level characteristics) offer a more complete picture of the current literature that exists on the evaluation of the Three World view (Peek, 2008). From this review of articles, evaluation of the success and sustainability of the

operational world can now be conceptualized at provider and practice levels. In addition, evaluation of the success and sustainability of the financial world can now be conceptualized at patient, provider, and system levels.

This article also makes a contribution to the literature because it provides a snapshot of the methods used for studies that evaluate operational or financial characteristics of IBHC programs. The methods identified in this review show that there is a variety of designs and resources used to study the success and sustainability of IBHC models. This study identified that common methods for assessment include surveys, interviews, and site visits. One process-related finding from this study was that operational characteristics were mostly related to the evaluation of success for IBHC programs, and financial characteristics were identified as indicators of sustainability. Evaluation of the operational world seemed to answer the question, "Can this IBHC program be carried out?" Evaluation of the financial world seemed to answer the question, "Can this IBHC program last?" A second process-related finding is that the articles that were able to adequately address clinical, operational, and financial characteristics used complex methods, such as a mix of site visits, interviews, and surveys. This indicates that studying all three worlds takes significant time and resources. Through the review of 46 articles that evaluated the success and sustainability of IBHC, fifteen articles identified characteristics related to all three worlds of the Three World view (Peek, 2008). Figure 2 shows the timeline of the IBHC Three World view (Peek, 2008) research included in this review. There has been a recent increase in IBHC research with the Three World view (Peek, 2008) characteristics, and it is imperative that this type of research continues.

Limitations

Certainly limitations can exist within articles that are represented in a systematic review. However, there are also limitations that can exist with the systematic review, itself. For example, there was a bias in this review related to the researchers' lens as mental health providers who have functioned in IBHC settings. An economist or policymaker, with different biases, may have interpreted and applied the Three World view (Peek, 2008) differently. Secondly, the researchers attempted to select search terms that would capture the most information about IBHC research, but it is possible that articles were missed due to search terms or human error. Furthermore, this review only included published research, and was able to locate and include dissertations and policy briefs. Thus, there may be existing findings that are unpublished and therefore not included in this analysis. Additionally, trying to capture IBHC research that contains operational and financial literature, considering where those two domains are published (e.g., diverse publications and data sources) and the accessibility of the literature, is complex. As such, it is unclear how much research may exist in governmental or military/veteran research systems that are not available for public domain.

Implications

This review captures the clinical, operational, and financial characteristics of IBHC research. Based on the findings, there is a significant need for simultaneous assessment of IBHC clinical, operational, and financial success and sustainability. In the next steps of IBHC research, the relationships within and between the clinical, operational, and financial worlds need to be explored. The following are recommendations for clinical, operational, and financial evaluation research in IBHC.

Clinical. The articles reviewed for this systematic review verified that IBHC research is primarily focused on the clinical world. Future researchers should ensure that operational and financial practices are added to research on the clinical world in order to better predict sustainability and successful delivery of integrated behavioral health care services. In this way, future research that is primarily focused on the clinical world should also include the following from the operational and financial worlds: (a) an evaluation of organizational support and leadership (e.g., was there support from PCPs and administration at the time of implementation), (b) an evaluation of the funding sources or billing processes that coincide with clinical practices for the IBHC program(s), and (c) how the program developed its IBHC workforce (e.g., recruitment strategies and turnover rates for BHCs) in order to provide a consistency to the clinical practice.

Operational. IBHC leadership was a significant operational characteristic identified in this sample of IBHC evaluation research. In the studies evaluated for this review, it was not clear who the leaders of IBHC programs and implementation were (e.g., behavioral health directors, medical directors, practice managers, external researchers). However, support from leadership was identified as a prevalent operational barrier to success and sustainability of IBHC in several studies. Future researchers should assess (a) who the leaders are in IBHC programs and implementation, and (b) how leadership can provide support for IBHC clinical, operational, and financial success. Collaboration and communication between medical and behavioral health providers were also significant operational characteristics identified in this review. There was a wide variety of findings related to communication and collaboration, and more research should be conducted to determine how these two operational characteristics impact the success of IBHC.

To further explore how collaboration and communication impact the success of IBHC, future researchers should explore the cultural differences and communication preferences of medical and behavioral health providers (via surveys or interviews), and how the similarities and difference influence the success of IBHC. This research would provide more depth to the finding from this review that medical and behavioral health providers had different preferences for communication and collaboration. An additional finding from this review, was that many practice-level operational characteristics were strongly related to the level of integration. For example, lower levels of integration were associated with greater physical distance between PCPs and BHCs. As such, future IBHC evaluation research should include evaluation of operational characteristics identified in this study, such as space sharing and proximity of providers, to explore how practice level operations influence the level of integration.

Financial. The financial characteristics identified in this systematic review indicated that there needs to be a continuous evaluation of the financial world within IBHC models in order to create a compelling body of evidence for best practices in IBHC billing and reimbursement. Evaluation of the financial world demonstrated that there are larger system level policies and practices that interfere with the sustainability of IBHC (e.g., same-day billing restrictions). There is a need for more research on reimbursement processes and strategies, so that evidence can be disseminated to policymakers in order to shows why and how billing practices need to change. This review identified quantitative cost analyses and qualitative interviews on financial barriers as methods to collect high quality data on the financial world. Future researchers can use these methods to build the evidence base for bringing down financial barriers.

Cost analysis and evaluation of revenue were two financial characteristics identified in this review. Evaluation of costs indicated that IBHC is cost effective compared to other forms of

treatment (standard care or screening only services) and other forms of integrating behavioral health (i.e., compared to collaborative or coordinated programs). Additionally, the analysis of revenue indicated that IBHC can be significantly lucrative for healthcare practices. Furthermore, evaluation of patient volume showed that a significantly higher number of patients can be seen by providers on days when BHCs are present, generating more reimbursement and billing for services, in addition to higher quality of care for patients. It is imperative that these findings are disseminated to policymakers, in order to show how quality of care can be improved at a low cost for patients and as a benefit to practices. It is equally imperative that researchers continue to evaluate financial characteristics of IBHC and to track financial changes over time as billing and reimbursement policies continue to develop.

Summary

The purpose of this study was to explore the operational and financial characteristics of IBHC research. The results from this systematic review demonstrate that there is more information available about the clinical world of IBHC compared to the operational and financial worlds. Additionally, there were only 15 studies out of 3,386 studies that were considered for this systematic review that evaluated characteristics from all three worlds. This lack of research demonstrates that IBHC evaluation research has primarily focused on the clinical characteristics of IBHC, and that, only very recently have researchers developed a more systemic perspective on IBHC models. This more recent systemic perspective has developed by incorporating the evaluation of operational and financial characteristics of IBHC programs. Researchers should use a more systemic perspective on IBHC evaluation by incorporating clinical, operational, and financial characteristics into their assessment. By using the Three World view, there will be a more holistic understanding of how IBHC can be successful and sustainable.

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Note: * *represents articles included from the systematic review searches*

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Table 1

Operational Definitions Pertinent to the Three World view and Integrated Behavioral Health Care

Term	Definition
Integrated behavioral health care	"The care that results from a practice team of primary care and behavioral health clinicians, working together with patients and families, using a systematic and cost-effective approach to provide patient-centered care for a defined population. This care may address mental health and substance abuse conditions, health behaviors (including their contribution to chronic medical illnesses), life stressors and crises, stress-related physical symptoms, and ineffective patterns of health care utilization" (Peek, 2013, p. 2).
Primary care	Health care that includes "health promotion, disease prevention, health maintenance, counseling, patient education, diagnosis and treatment of acute and chronic illnesses in a variety of health care settings" (American Academy of Family Physicians [AAFP], n.d.).
Three World view	The notion that integrated behavioral healthcare has to be clinically, operationally, and financially sound in order to be successful and sustainable (Peek, 2008).
Clinical world	The clinical activity to achieve health goals within the patient population (Peek, 2008).
Operational world	The consistency and reliability of policies and protocol, such as how care is provided and if the care delivery is well-executed (Peek, 2008).
Financial world	The price and value of care, and the accounting activity related to integration of behavioral health services (Peek, 2008).
IBHC Evaluation	The systematic assessment of the success and sustainability of integrated behavioral health care.

Table 2

Article Search Summary: Results Yielded and Articles Found to meet Criteria based on Abstract

Medline via PubMed	**Healthstar via OVID**	**PsychINFO via EBSCO**
Behavioral Health Integration AND Primary Care Yield: 721 Found: 89	*Delivery of Health Care AND Integrated Primary Care* Yield: 1002 Found: 34	*Integrated Services AND Primary Health Care* Yield: 301 Found: 24
Integrating Behavioral Health into Primary care Yield: 396 Found: 27	*Behavioral Health Integration* Yield: 16 Found: 4	*Continuum of Care AND Primary Health Care* Yield: 84 Found: 0
Practice Transformation AND Integration Yield: 96 Found: 0	*Practice Transformation* Yield: 97 Found: 0	*Behavioral Medicine AND Primary Health Care* Yield: 12 Found: 0
Financial Transformation AND Integration Yield: 53 Found: 1	*Integrated Care + Primary Health Care* Yield: 231 Found: 10	*Health Care Psychology AND Primary Health Care* Yield: 206 Found: 15
Practice Outcomes AND Behavioral Health Integration Yield: 220 Found: 3	*Behavioral Health AND Financial* Yield: 119 Found: 8	*Behavioral Health AND Integration AND Primary Health Care* Yield: 259 Found: 21
	Costs and Cost Analysis AND Behavioral Health Yield: 23 Found: 0	

Note. The term "yield" refers to the number of abstracts identified, and the term "found" refers to the number of abstracts that met inclusion/exclusion criteria.

Figure 1

Flow Chart of Article Search and Review Process

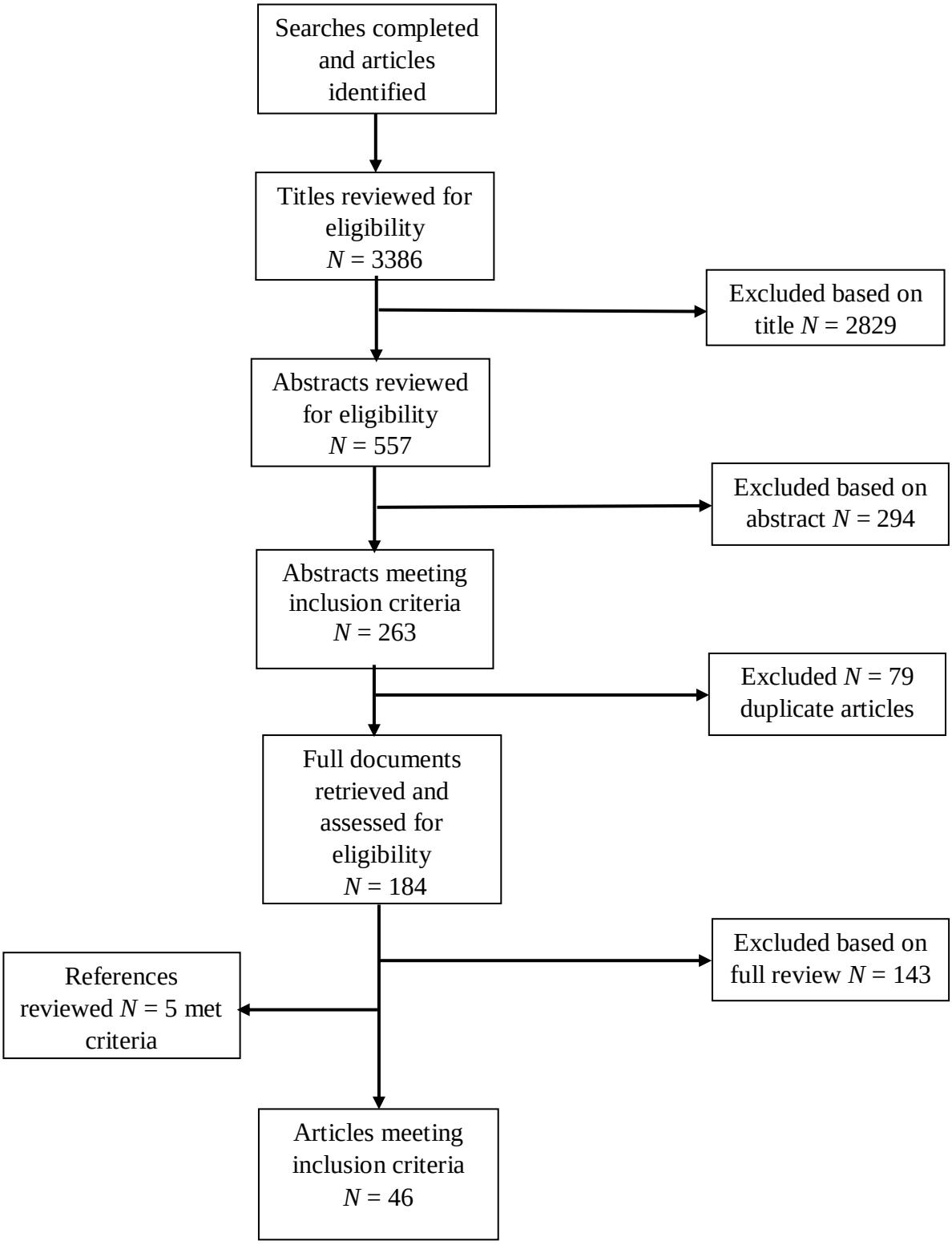


Table 3

Frequencies of Operational and Financial Variables

Domains	*n*	%
Operational	9	19.5%
Financial	1	2.2%
Operational and Financial	4	8.7%
Operational and Clinical	12	26.1%
Financial and Clinical	5	10.9%
Clinical, Operational, and Financial	15	32.6%

Table 4

Codes by Review Category and with Frequencies

SAMPLE (Participants used)	Frequency of Code
ADM: Administrator	3
BHC: Behavioral health consultant	13
STAFF: Clinic staff	4
PCP: Primary Care Provider	18
PT: Patient	14
SI: Sites	13
SITE (Identity of site)	
CHC: Community Healthcare Center	3
FM: Family medicine	3
FQHC: Federally Qualified Healthcare Center	7
PC: Primary Care, not otherwise specified	19
VA: Veteran's Health Administration Primary Care	11
METHOD	
APPT: Review of appointment logs and service records	3
INT: Interview	18
MIX: Mixed methods	7
PT-MR: Review of patient medical records	6
QUANT: Quantitative method	29
QUAL: Qualitative method	9

SUR: Survey	20
SV: Site visit	4
CLINICAL CHARACTERISTICS	
ACC: Population access to BH services	8
MHC: Presenting mental health conditions	16
MH-IM: Mental health assessment score changes	10
RR: Referral rates to behavioral health professional	6
TX-MET: Treatment method(s)	6
OPERATIONAL CHARACTERISTICS	
BARR: Barriers in organizational system impacting integration	10
CHART: Sharing of chart and treatment plans	6
COLL: Time/frequency of collaboration activities between PCPs and BHCs	20
COMM: Communication methods between PCPs and BHCs	17
IMPL: Implementation strategy and processes	7
PROX: Proximity of providers	5
REF-P: Referral practices and methods	10
SCH: Scheduling practices and logistics	4
FINANCIAL CHARACTERISTICS	
COST: Cost analysis	4
REIMB: Reimbursement processes and issues	9

SUST: Financial sustainability	4
WF: Workforce development	6

Table 5

Sample, Site, Method, Outcomes, and Clinical, Operational, and Financial Characteristics of Articles

Study Name, Year	Sample	Site(s) Identity	Method	Clinical Domains	Operational Domains	Financial Domains	Outcomes
OPERATIONAL							
Funderburk, 2012	15 PCPs, 303 PTs	University health center	SUR, QUANT, Patient satisfaction		COLL, IMPL		Providers and patients reported satisfaction with the IBHC program. Providers had more conversations about behavioral health concerns because of IBHC services.
Gallo, 2004	127 PCPs	PC, VA	SUR, Process evaluation method, MIX		COLL		There was a higher frequency of communication between medical and behavioral providers in an integrated program compared to an enhanced referral program.
Jones, 2015	363 SI	FQHC	SUR, QUANT		CHART, COLL, COMM		Integrated care was more likely to occur when there were electronic health records and higher percentages of behavioral health providers at sites.
Knowles, 2013	6 BHCs, 12 PCPs	International primary care site	INT, QUAL		COLL, IMPL		Benefits of a co-location model were reported, including more access and reduced stigma, but there was still a division of mental and physical health work, which was a barrier to integration.

Note. See Table 4 for codes.

OPERATIONAL (continued)

Possis, 2016	10 BHCs, 3 Psychiatrist, 11 RES	VA	SUR, APPT, QUANT	COMM, COLL	Participants who completed training on an integrated model reported increased knowledge of the model and more comfort with using an integrated practice.
Pratt, 2012	10 STAFF, 5 PCPs, 5 ADM	University student health center	SUR, QUANT	COMM, REF-P, COLL	Primary care providers identified their limitations addressing mental health and valued collaborating with mental health providers in their setting.
Rajala, 2014	7 BHCs, 5 PCPs	PC	INT, QUAL	BARR, IMPL	More resistance to integration was perceived from the BHCs compared to the PCPs. Overall BHCs and PCPs had similar perceptions of the model and implementation.
Urada, 2012	17 BHCs, 27 PCPs, 15 STAFF	PC	SUR, QUANT	COMM	Integration of BHC services were valued by all staff types. PCPs and BHCs differed on perception of communication and the perceived value of BHCs. BHCs rated their perceived value and communication with providers lower than the PCPs rated.
Westheimer, 2008	10 PCPs	University student health center	SUR, QUANT	REF-P	Referrals from PCPs tended to be for only traditional MH problems, rather than co-morbid MH and medical concerns.

OPERATIONAL AND CLINICAL						
Beacham, 2012	93 PCPs	FQHC, PC	SUR, QUANT	RR	COMM	PCPs did not perceive access to BHCs as high and tended to refer for mostly traditional MH concerns.
Beehler, 2012	14 BHCs	VA	INT, QUAL	TX-MET	COMM, BARR, SCH	BHCs identified barriers to implementing co-located collaborative care that were related to system, clinic, and provider level factors.
Brucker, 2003	11 BHCs, 257 PTs	PC	QUANT	RR	COLL	BHCs and PCPs collaborated approximately three times for every four therapy sessions. BHCs reported having collaboration with PCPs in over 90% of therapy cases.
Calkins, 2013	39 PCPs	VA	PT-MR, QUANT	RR	PROX	On average, PCPs' and BHCs' offices were 112.4 feet apart. The PCPs made an average of 26.6 referrals to the BHC in one year and an average of 21.9 referrals were successful. Proximity significantly predicted the rate of referral.
Cully, 2012	320 PTs	VA	MIX	MHC, MH-IM, TX-MET	IMPL	Evaluation of a hybrid research design showed that hybrid research designs (quantitative evaluation and qualitative methods) are needed to examine effectiveness and implementation in integration programs.

OPERATIONAL AND CLINICAL (continued)						
Funderburk, 2013	159 BHCs	VA, U.S. Air Force Healthcare	SUR, QUANT	MHC, TX-MET	COLL, COMM, PROX, Space sharing between PCPs, BHCs, and their patients	BHCs working in integrated systems assessed in this study worked in close proximity to PCPs and had shared records and waiting rooms.
Funderburk, 2010	46 PCPs, 12 BHCs, 320 PTs	VA	PT-MR, SUR, QUANT	MHC, ACC	COLL	PCPs perceived a high level of access to BHC services and a high level of communication with BHCs. The system had a high level of support for integration.
Kolbasovsky, 2005	23 PCPs, 358 PTs	PC	QUANT	MH-IM, ACC, RR	COLL	PCPs and BHCs were able to collaborate through feedback forms. PCPs were highly satisfied with the integrated program.
Mullin, 2006	5 BHCs	PC	QUANT	ACC	COLL	The development and evaluation of a standardized assessment process for an integrated program was successful and yielded specific recommendations for program improvement.
Nover, 2014	1 SI	PC	QUANT	MHC, MH-IM, ACC	COLL	Collaboration between medical and mental health providers led to higher quality of care, improved quality assurance, and improved intra- and inter-agency teamwork.
Sadock, 2014	16 BHCs, 452 PTs	University health center	APPT, PT-MR, QUANT	MHC, MH-IM, RR	REF-P, SCH	The majority of BHC referrals were warm hand-offs. Warm hand-offs occurred when the BHC's and PCP's clinic schedule was aligned, which was about a third of the time.

OPERATIONAL AND CLINICAL (continued)							
Vickers, 2013	9 PCPs, 3 STAFF	PC	INT, QUAL	ACC	REF-P, COLL		PCPs valued co-located BHC and BHC's availability to triage mental health needs, connect patients to care, and provide on-site treatment.
FINANCIAL							
Gouge, 2016	5 PCPs	Pediatric primary care	Observational study, INT, MIX			Patient volume, Revenue, Patient wait time	There was a 42% increase in patient volume from a non-BHC days to BHC days. An additional 8-12 patients (all visit types) were seen on BHC days. There was $1,142 more revenue generated on BHC days. PCPs had a time savings of over 2 minutes per patient regardless of the number and type of concerns presented.
FINANCIAL AND CLINICAL							
Brawer, 2010	2812 PTs	VA	PT-MR, QUANT	Prescription patterns		Length of BH encounter	70% of all BHC visits lasted 30 minutes or less. The mean number of encounters per BHC patient was 2.62.
Bremer, 2003	167 PTs	FM	QUANT	MH-IM		COST	There were less total health care costs at three out of four time points in the IBHC program, but the comparison of costs for all time points from baseline was not significant. The cost for IBHC was statistically equivalent to patients who only received screening.

FINANCIAL AND CLINICAL (continued)							
Guck, 2007	173 PTs	FM	PT-MR, QUANT	ACC		No show rates	There were lower no-show rates for patients who received integrated care services.
Liu, 2003	354 PTs	VA	INT, SUR, QUANT	MHC, MH-IM		COST, BHC Activity time	Team meetings lasted 56 minutes, involved discussion of 13 patients, and cost $403. Follow-up calls took 24 minutes (including preparation, call attempts, and documentation) and cost $15 on average. The cost-offset analysis was inconclusive.
Wiley-Exley, 2009	2 SI	VA, PC	QUANT	MH-IM		COST	Results of costs analysis showed uncertainty about the cost-effectiveness of IBHC. There was a decrease in total costs for IBHC in the full sample.
OPERATIONAL AND FINANCIAL							
Burfeind, 2014	49 BHCs, 88 PCPs	PC	SUR, QUANT		COLL, COMM, REF-P	WF, REIMB	PCPs were more likely than BHCs to prefer improving referral methods and were less likely to prefer colocation, warm hand-offs, improved behavioral health training for PCPs, and shared visit as ways to improve health care. BHCs and PCPs saw the lack of methods of payment for BHC services as a barrier to integration by both groups. Recruitment and retention of BHCs was a barrier perceived by PCPs.

OPERATIONAL AND FINANCIAL (continued)							
Ellison, 2014	122 PCPs	FQHC, CHC, PC	SUR, QUANT		COMM, PROX, BARR, REF-P	REIMB	More fiscal and operational barriers to integration were associated with a longer time between patients' BHC referrals and initial appointments.
Gurewich, 2014	5 SI	CHC	CS, INT, QUAL		REF-P, PROX, BARR	WF	Proximity and availability of BHCs were important for connecting patients to needed outpatient substance abuse services.
Pourat, 2015	5 SI	CHC	Process evaluation method		COMM, CHART	SUST, REIMB	Challenges in frequency and methods of communication with BHCs and PCPs were identified. The funding for BHCs was difficult but there was a high need for coverage and addressing population BH needs.
CLINICAL, OPERATIONAL, AND FINANCIAL							
Blasinsky, 2006	7 SI, 15 Key Informant	PC	SV, Review grant proposals, INT, QUAL	MHC	BARR	SUST	There was limited sustainability to collaborative care teams over time. Organizational and structural barriers reflected the inability or resistance of organizations to change their systems of care despite evidence of the clinical success of the program. Funding issues were a significant barrier to sustainability.

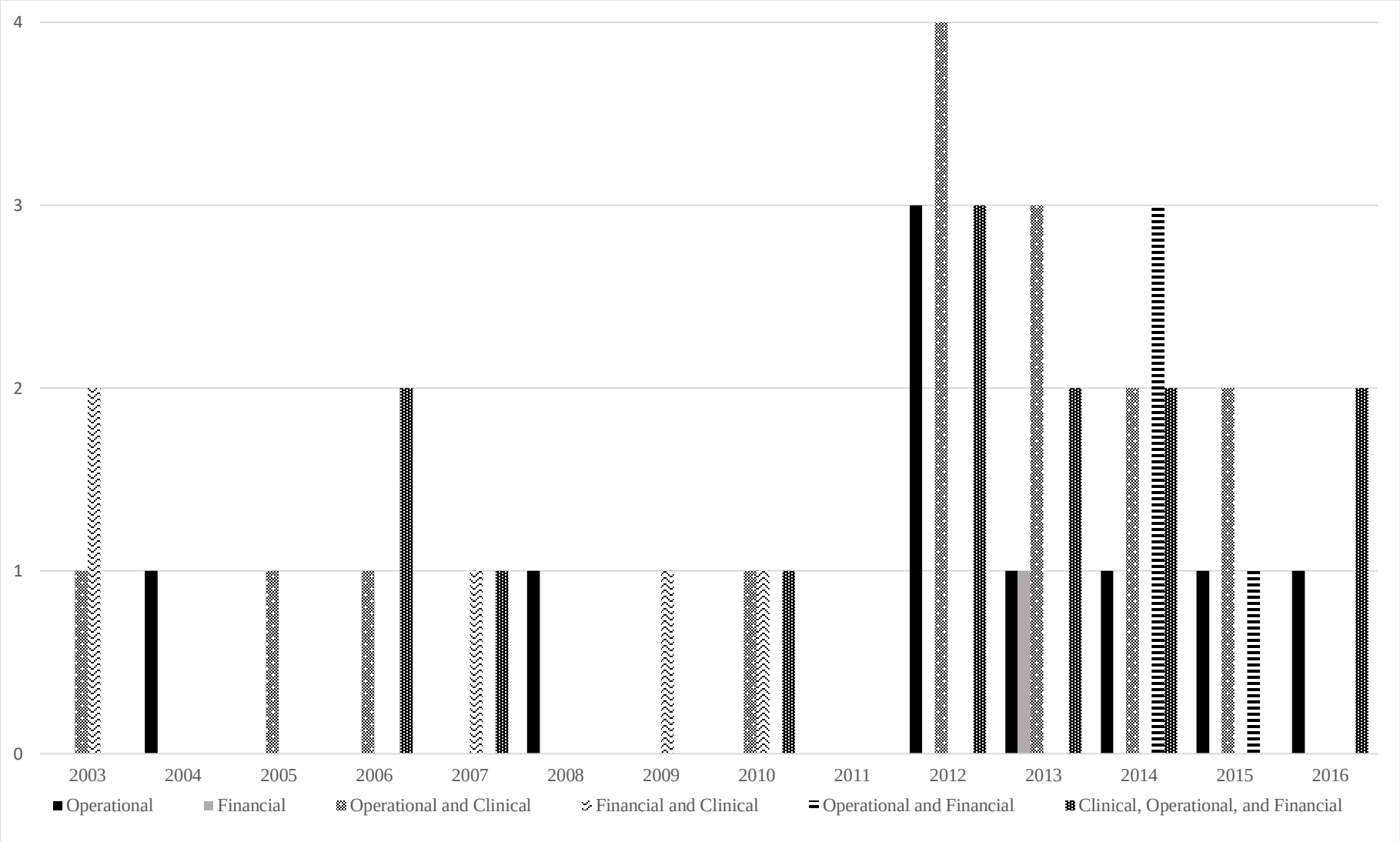
CLINICAL, OPERATIONAL, AND FINANCIAL (continued)

Chomienne, 2013	376 PTs	International family practice	SUR, Focus Group, MIX	MH-IM, Patient satisfaction, Competency/knowledge of providers in treating mental health, MHC	COLL	Review billing codes	PCPs felt that BHCs' services freed up their time. Audit of the PCPs' billing showed reduction in PCPs' mental health billing as BHCs were addressing mental health concerns.
Davis, 2013	11 SI	PC	SV, INT, QUAL	ACC	IMPL, BARR, SCH, REF-P, COMM	WF	In early stages of integration, there can be challenges related to workflow, access of BHCs, culture change, and maintaining and funding a BHC workforce.
Karlin, 2014	132 BHCs, 112 Program Directors	VA	SUR, QUANT	MHC	COMM	BHC activity time	Most BHCs felt that they were well integrated into the program and most clinic team members knew their role as BHCs.
Kessler, 2014	123 SI	Patient centered medical home	SUR, QUANT	MHC	BARR, SCH	REIMB	Scheduling processes for the BHCs were the same as other providers 36% of the time. Same-day appointments with BHCs were available 28% of the time. Frequent barriers were lack of time (92%) for BHCs and reimbursement challenges (91%).
Lardiere, 2011	348 SI	FQHCs	SUR, QUANT	MHC, TX-MET	COMM	NS, REIMB	The areas of training most frequently requested by FQHCs in non-clinical areas included managing no-shows and reimbursement and coding.

CLINICAL, OPERATIONAL, AND FINANCIAL (continued)							
McGovern, 2012	13 SI	FQHC	SV, QUANT	TX-MET, MHC	IMPL	WF	The Dual Diagnosis Capability in Health Care Settings (DDCHCS) measure was able to detect variation in integrated behavioral health services capacity. Three of 13 agencies assessed were dual diagnosis capable, and MH services tended to be more integrated than SA services.
Oppenheim, 2016	6 SI	PC	Case Study, INT, QUAL	TX-MET	IMPL, BARR, CHART, COLL, COMM	COST, Review billing codes, REIMB	Cross-training was found to be beneficial for integration. A wide variety of finding strategies were being explored by integrated programs seeking sustainability, including grant funding and mental health funding sources.
Padwa, 2016	5 SI	FQHC, PC	QUANT	MHC	BARR, CHART, COMM	SUST	Implementation was influenced by the socio-political context, funding, and organizational leadership. Despite funding support, administrators and staff reported that the resources available to provide IC services were insufficient to meet the high level of need.
Padwa, 2012	44 ADM, 11 SI	PC	SUR, SV, INT, MIX	MHC	CHART, COLL	SUST	In a survey of administrators, 63% reported that documentation issues hinder integration activities, and 92% reported finding ways to adequately and sustainably finance integration is a major concern.

CLINICAL, OPERATIONAL, AND FINANCIAL (continued)							
Perkins, 2006	380 PTs, PCPs	International primary care site	APPT, INT, MIX	ACC, RR	COLL	WF	Barriers to integration were attributed to the shortage of, time demands, and high turnover of PCPs. In these workforce conditions PCPs preferred traditional referral and secondary consultation.
Sanchez, 2010	52 ADM	CHC	SUR, QUANT	MHC, MH-IM	PROX, CHART, BARR	REIMB, WF	Identified same-day billing restrictions, lack of reimbursement for various integration activities, physical separation of medical and behavioral health providers, information-sharing, and BHC lack of public health perspective as barriers to integration.
Sutliffe, 2007	37 PT Dyads, 8 PCPs	Pediatric primary care	Program evaluation	MH-IM	REF-P	Patient wait time	Presence of BHC improved access to BH services, decreased wait time to access services (M = 10 days), and BHC had a high rate of successfully completed referrals.
Todahl, 2006	5 BHCs, 2 PCPs, 2 STAFF, 5 PTs	PC	INT, QUAL	PPR	REF-P, COLL	REIMB	Characteristics of the environment, characteristics of therapists, the referral process, characteristics of collaboration, the psychotherapy process, and social considerations were integration themes identified by providers and staff in an integrated program.
Weiss, 2012	3 Psychiatrist	FQHC, PC	INT, PT-MR, MIX	MHC	COMM	NS, REIMB, Revenue	Email was the most common method for communication. The projected annual revenue from a co-located psychiatrist was $358,500.

Figure 2. Bar chart of frequencies of articles by clinical, operational, and financial types.



CHAPTER 4: METHODOLOGY

In the United States, there is widespread effort to integrate behavioral health services into primary care settings. Efforts to integrate these services address the fact that the primary care system has often operated as the "de facto" system for mental health needs (Peek, 2009). Additionally, there is a large amount of patients with unmet behavioral health needs that present in primary care settings (Peek, 2009). Research on integration has shown that providing mental health and substance abuse services in primary care settings improves the quality and efficiency of care (Blount, 2003; Butler et al., 2008; Collins, 2010; Gilbody et al., 2006; Martin, White, Hodgson, Lamson, & Irons, 2014). However, research has yet to address "how to make the clinical, organizational, and professional changes necessary to accomplish and sustain integration- or which of these changes yield the greatest benefits" (Peek, Cohen, & deGruy, 2014, p. 430). Evaluation research, a "mostly unexplored territory," can provide critical information on the successes and failures of integrating behavioral health services into primary care (Peek et al., 2014, p. 430).

Many integrated behavioral health care (IBHC) projects are driven by clinical and administrative leaders who are trying to address the needs of their community (Peek et al., 2014). Local implementers may not have the capacity or organizational support to conduct research and evaluation. The focus of these local implementers has been on the needs of their local patient population, with less attention given to the production of knowledge about the success and sustainability of integrated care (Peek et al., 2014), and less capacity to conduct evaluation. Thus, the lessons about how to "how to make the clinical, organizational, and professional changes necessary to accomplish and sustain integration" (Peek et al., 2014, p. 430) are lost for other implementers. This project aims to connect the evaluation research findings provided in the

systematic review in chapter three (Muse, Lamson, Didericksen, & Hodgson, 2017) with an assessment of "local implementers" (i.e., implementers outside of well-controlled, resource-rich programs; Kwan & Nease, 2013) evaluation practices in integrated behavioral health care.

This project gathered a baseline for local implementation projects' evaluation practices by exploring clinical, operational, and financial evaluation characteristics and methods. The results of this study are critical for a comparative analysis for what was found in the published literature in the systematic review provided in chapter three (Muse, Lamson, Didericksen, & Hodgson, 2017) and the practices and methods of local implementers. The research question for this study is: How are behavioral health providers, medical providers, and administrators evaluating clinical, operational, and financial outcomes of integrated behavioral health care programs?

Hypotheses

This study explored the organizational and practice trends for clinical, operational, and financial evaluation of integrated behavioral healthcare (IBHC) programs. Through this project, researchers identified local site characteristics and resources associated with IBHC evaluation practices. It was hypothesized that:

1) There would be significant differences in responses about evaluation for different professional roles (e.g., medical provider, behavioral health provider, administrator).
2) Participants operating in more integrated settings (i.e., higher frequency of warm handoffs), would report that their site conducts more evaluation than sites with lower levels of integration.

3) There would be significant differences in evaluation types and methods for different funding sources for the integrated behavioral health care program (i.e., grant funding, billing for reimbursement).
4) The patient populations' primary payer type (i.e., Medicaid, uninsured) would be associated with financial evaluation practices.

Study Design

The purpose of this study was to conduct a national meta-evaluation of integrated behavioral health care. This study assessed organization and practice evaluation trends for integrated behavioral health care programs in the United States. This study included a descriptive and quantitative survey (Appendix B) of evaluation practices in integrated behavioral health care programs. Each question developed for this study was grounded in the Three World view (Peek, 2008) and the systematic review provided in chapter three. There were 26 questions in this survey, with a variety of dichotomous, write-in, and Likert response options. The survey was created and distributed using online *Qualtrics* (2015) survey software, in order to gather information about integrated behavioral health care evaluation from professionals all over the United States.

Participants

This study recruited professionals who were working in primary care settings that had a co-located or integrated behavioral health professional.

The inclusion criteria for this study were as follows:

1) The participant had a professional identity as a medical provider (e.g., physician, nurse practitioner, physician assistant), behavioral health provider (e.g., therapist,

counselor, psychologist), or the role of an administrator (e.g., practice manager, CEO, billing and coding manager).

2) The participant had to be working in a primary care setting in which a behavioral health provider provided on-site services to patients.

Recruitment

After IRB approval (see Appendix A), participants were recruited via various professional networks (e.g., the Collaborative Family Healthcare Association and the National Council for Behavioral Health email listserves). Additionally, recruitment occurred via social media sites that are relevant to professionals working in integrated behavioral health care settings. Recruitment through email and social media included a description of the study, the inclusion criteria, disclosure of IRB approval, and a link to the online survey (see Appendix C for recruitment material).

Measures

The survey that was used for this study intended to capture site and evaluation characteristics (see Appendix B). The survey for this project was grounded in the Three World view (Peek, 2008) and was developed based on the systematic review provided in chapter three (Muse & Lamson, 2016). The first part of the survey asked for descriptive information about the participant (i.e., their professional role) and the site or organization (i.e., number of sites and providers, type of site), in order to gain insight into which types of professionals and types of sites are evaluating their behavioral health integration programs. The next part of the survey included questions about Three World view evaluation practices. These questions were constructed based on the outcomes from the systematic review presented in chapter three. The participants were asked if they were evaluating any of the clinical, operational, and financial

characteristics identified in the systematic review. Additionally, the participants were asked to report the methods that are used for each evaluation category (clinical, operational, and financial). As this is the first meta-evaluation of integrated behavioral health care (Muse, Lamson, Didericksen, & Hodgson, 2017), there were no pre-existing meta-evaluations to use.

Procedures

After obtaining IRB approval, the primary researcher distributed the survey link and study description to various professional networks and colleagues. The survey was created using *Qualtrics* survey software (Qualtrics, 2015). Participants had the option of providing a mailing address to be considered for a randomized drawing of ten $25.00 gift cards. Additionally, the first 50 participants who provided their mailing address were eligible to receive a RedBox code for a free DVD rental. The respondents were prompted for their contact information for the incentive and email follow up only if they followed a separate link that was in the survey completion message. This separate survey link was used to keep the main survey information de-identified, as the main survey did not contain any identifying information. Additionally, respondents could choose to opt out following the second survey link if they do not wish to provide contact information and be considered for the gift card drawing. The survey information was downloaded from *Qualtrics* and stored in a protected drive.

Data Analysis

The data collected in this study was analyzed using SPSS and R-Studio statistical software. Preliminary analysis of the data included descriptive statistics on the study participants and types of sites represented in this study. In the next part of the analysis, logistic regressions were used to determine differences in evaluation practices based on site characteristics and respondent type (medical provider, behavioral health provider, or administrator). Additionally,

logistic regressions were completed to determine how site characteristics impact the probability of evaluating clinical, operational, and financial characteristics of programs. An *a priori* power analysis using *G*Power* (Faul, Erdfelder, Buchner, & Lang, 2009; Faul, Erdfelder, Lang, & Buchner, 2007) indicated that 109 participants were needed to have 80% power for detecting odds ratios of at least two (i.e., two times the likelihood of the null event occurring) when using an $\alpha = .05$ level of significance.

Summary

This study aimed to develop a better understanding of Three World view (Peek, 2008) evaluation practices in the field of integrated behavioral healthcare. The methodology for this project produced information about the types of organizations that are completing evaluations of their behavioral health integration programs, the methods of those evaluations, and the types of clinical, operational, and financial characteristics that are being evaluated. The outcomes from this project, presented in the following chapter included 1) a description of clinical, operational, and financial evaluation practices from a diverse sample of sites across the United States, 2), information on differences in the perception of evaluation of medical providers, behavioral health providers, and administrators, and 3) an understanding of how the degree of integration is associated with clinical, operational, and financial types of evaluation. This information is important for developing better evaluation practices and resources for a variety of primary care sites. Additionally, furthering the quality of integrated behavioral healthcare evaluation improves the information being disseminated to policymakers to make the changes necessary to improve healthcare.

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CHAPTER 5: RESULTS OF A THREE WORLD VIEW META-EVALUATION OF INTEGRATED BEHAVIORAL HEALTH CARE

Primary care is typically the first and most frequent point of entry for people receiving healthcare services in the United States (Miller & Patel, 2011). As a system, primary health care is undergoing significant redesign (Ader et al., 2015). This redesign of "the largest platform of healthcare delivery" (Miller & Patel, 2011, p. 471) is in response to the Triple Aim (Berwick, Nolan, & Whittington, 2008), which posits that the healthcare system "requires simultaneous pursuit" (p. 759) of improving the patient experience of health care, improving population health, and reducing the cost of health care. As a response to calls to action to redesign the healthcare system, there have been policy and funding changes to support integrating behavioral health services into primary care (Peek, 2009). Integrated behavioral health care (IBHC), a model of health care delivery whereby behavioral health is provided in tandem with physical health care, has become a more common model of care in primary care settings and has been introduced into training contexts for medical and behavioral health providers across diverse healthcare fields (Kessler, 2015). This was in part due to initiatives through interdisciplinary policies formed at the federal level (e.g., the Patient Centered Medical Home; Patient-Centered Primary Care Collaborative [PCPCC], 2007).

The integration of behavioral health services into primary care (IBHC) is defined as a collaborative team of medical and mental or behavioral health professionals working together under shared protocols for screening, assessing, treating, and monitoring of mental and medical health concerns of primary care patients (Peek, 2013). IBHC has been shown to improve clinical outcomes of patients (Pourat, Davis, Chen, Vrungos, & Kominsk, 2015), increase quality of life (Nielsen, Olayiwola, Grundy, Grumbach, Shaljian, 2014), reduce hospital readmissions and

average length of hospital stay (Farrel et al., 2015), decrease emergency room visits (Pines, Keyes, Van Hasselt, & McCall, 2015), and reduce health care expenditures (Nielsen et al., 2014). A significant amount of the research on IBHC has focused on specific clinical protocols (i.e., screening for depression), chronic diseases (e.g., diabetes) or populations (e.g., geriatric), with less research focused on the transformation of healthcare systems and process by which programs develop into successful and sustainable integrated models (Ader et al., 2015; Bower, Gilbody, Richards, Fletcher, & Sutton, 2006; Butler et al., 2011; Craven & Bland, 2006; Gilbody, Bower, Fletcher, Richards, & Sutton, 2006; Katon & Seelig, 2008; Oxman, Dietrich, & Schulberg, 2005).

While many disciplines have established best practices in clinical care, including training, implementation, and evaluation of clinical outcomes, few disciplines or healthcare systems have focused on how clinical services interface with the implementation of operational and financial practices (Muse, Lamson, Didericksen, & Hodgson, 2017). Furthermore, almost no healthcare systems are so advanced or have the resources and capacity to formally evaluate the clinical, operational, and financial success and sustainability of IBHC. Since changes in the healthcare system are happening quickly and occurring at many different levels of the system (e.g., patient care, efficiency, cost), it is important to understand how the implementation of integration works, including understanding the processes of the clinical, operational, and financial worlds (Peek, 2008) of healthcare practice, policy, and fiscal sustainability. This paper proposes a Three World view (Peek, 2008) meta-evaluation to determine how to measure IBHC success and sustainability.

The Three World View

Peek (2008) conceptualized IBHC as the interdependent processes occurring within and between the clinical, operational, and financial worlds. Each world has its own logic, language, and responsibility for an essential piece of health care (Miller, Mendenhall, & Malik, 2009; Peek, 2008). Each of the three worlds must work with each other for IBHC to be successful. The clinical world asks "What care is called for?" and "Is it high quality?" (Peek, 2009, p. 14). The operational world asks "What will it take to accomplish such care?" and "Is it well executed?" (Peek, 2009, p. 14). The financial world asks "Is it a good value?" and "How are resources best used?"(Peek, 2009, p. 14). The three worlds together ask the question "What does the provision of good care look like?," but in each world there is a distinct culture (Miller et al., 2009; Peek, 2009). The clinical world is focused on health-related goals, the operational world on production, and the financial world on the fiscal bottom-line (Peek, 2009). Peek (2008) suggests in the case whereby one world dominates any other, the system will likely fail. The Three World view (Peek, 2008) is essential to answering a critical question about IBHC: what must happen in the clinical, operational, and financial worlds for a system to transform into a successful and sustainable IBHC system? In order to answer that question, there must be an understanding of *how* to measure the clinical, operational, and financial outcomes that indicate a successful and sustainable IBHC system. This paper proposes a Three World view (Peek, 2008) meta-evaluation to determine how to measure IBHC success and sustainability.

Three World View Meta- Evaluation of Integrated Behavioral Health Care

While research exists on the success of clinical interventions in integrated behavioral health settings (Ader et al., 2015; Bower, Gilbody, Richards, Fletcher, & Sutton, 2006; Butler et al., 2011; Craven & Bland, 2006; Gilbody, Bower, Fletcher, Richards, & Sutton, 2006; Katon &

Seelig, 2008; Oxman, Dietrich, & Schulberg, 2005), more wide-spread and conclusive evidence is needed on the operational and fiscal aspects of care in order to persuade policymakers and payers of the value of IBHC (Ader et al., 2015). To show that IBHC is effective (clinically), feasible (operationally), and sustainable (financially), evidence incorporating outcomes from all three worlds is needed. This evidence can only be generated by conducting research and program evaluation on the clinical, operational, and financial aspects of integrated behavioral health care, across a variety of sites and programs. Since most research has been model, disease, or population specific (Ader et al., 2015; Bower et al., 2006; Butler et al., 2011; Craven & Bland, 2006; Gilbody et al.,, 2006; Katon & Seelig, 2008; Oxman et al., 2005), a chasm remains in the literature. In particular, attention must be given to the ways in which clinical, operational, and financial outcomes are measured and processes are evaluated in order to successfully transform IBHC programs. Therefore a meta-evaluation, a study of how programs conduct evaluation, is needed.

Meta-evaluation research, research on the evaluation (i.e., measuring success and/or sustainability) of IBHC programs, is a "mostly unexplored territory," and can provide critical information on the successes and failures of integrating behavioral health services into primary care (Peek et al., 2014). Using the Three World view (Peek, 2008) as a framework, the research question for this study is: How are behavioral health providers, medical providers, and administrators evaluating clinical, operational, and financial characteristics of IBHC programs? The outcomes from this project will include 1) a description of clinical, operational, and financial evaluation practices from a diverse sample of sites across the United States, 2), information on differences in the perception of evaluation of medical providers, behavioral health providers, and

administrators, and 3) an understanding of how the degree of integration is related to clinical, operational, and financial types of evaluation.

Method

The purpose of this article is to conduct a meta-evaluation of integrated behavioral health care by (a) exploring the evaluation practices implemented in integrated health care settings and (b) identifying and defining the clinical, operational, and financial characteristics and corresponding methods of evaluation. To address the hypotheses below, a descriptive and quantitative survey of evaluation practices in IBHC was employed. To gather information from IBHC providers and administrators across the United States, the survey was distributed electronically using *Qualtrics* (Qualtrics, 2015) online survey software.

Participants

Professionals who worked in a primary care setting with an integrated or co-located behavioral health provider were recruited for this study. The inclusion criteria were (a) the participant must have the professional identity as a medical provider (e.g., physician, nurse practitioner, physician assistant), behavioral health provider (e.g., therapist, counselor, psychologist), or the role of an administrator (e.g., practice manager, CEO, billing and coding manager), and (b) the participant must be working in a primary care setting in which a behavioral health provider delivers on-site services to patients.

Procedure

Following IRB approval (see Appendix A; study was certified exempt), professionals working in IBHC settings were recruited via professional networks (the Collaborative Family Healthcare Association, the Society of Teachers of Family Medicine) and social media (Facebook Medical Family Therapy Group). The link to the survey (Appendix B) with the

recruitment script (Appendix C) was sent out via email or posted on social media pages. Additionally, snowball sampling (Creswell, 2009) was used in which participants were encouraged to share the survey link with their colleagues working in similar settings. At the end of the main survey, there was a link to second, separate survey to participate in the incentives that were offered. From the incentive option, the first 50 participants received an incentive for a free movie rental (via Redbox). Ten random participants who provided their information to be eligible for incentives were chosen to receive a $25 gift card. The survey began in December, 2016 and the survey was closed and incentives distributed in February, 2017.

Measures

The survey used for this study (see Appendix B) was based on the Three World view (Peek, 2008) and the systematic review provided in chapter three (Muse, Lamson, Didericksen, & Hodgson, 2017). This study is the first meta-evaluation of IBHC (i.e., an evaluation of the evaluations used in IBHC settings; see chapter three), therefore this study was not able to draw from previous surveys or any previously created measures to form this meta-evaluation. There are several site evaluation tools available to help programs determine their level of integration and the strengths and weaknesses of their programs (Kessler, 2015; SAMHSA, 2015). While these tools are valuable resources for sites to conduct site-level evaluation, this study was not able to draw from them to inform the survey because this project is focused on meta-evaluation (i.e., how programs measure outcomes).

The first part of the survey designed for this study asked for descriptive information about the participant and the site or organization in which they work. Next, the survey asked about Three World view (Peek, 2008) evaluation practices, and the methods used for evaluation. The questions developed for this section were based on a systematic review conducted by Muse

et al. (2017). At the end of the survey, participants were asked a series of questions about the degree of integration occurring in their program (e.g., frequency of warm handoffs to BHCs, collaboration between PCPs and BHCs, referrals to BHCs for comorbid medical and behavioral health conditions, and behavioral health screening). The survey was composed of 27 questions, with a variety of dichotomous, write-in, and Likert response options. This study is the first of its kind to explore and describe evaluation practices in IBHC.

Hypotheses

This study is exploratory and descriptive in nature, and tested the following hypotheses:

1. There will be significant differences in responses about evaluation for different professional roles (e.g., medical provider, behavioral health provider, administrator).
2. Participants operating in more integrated settings (i.e., higher frequency of warm handoffs), will report that their site conducts more evaluation than sites with lower degrees of integration.
3. There will be significant differences in evaluation types and methods for different funding sources for the IBHC program (i.e., those with grant funding will be more likely to conduct clinical evaluation).
4. There will be significant differences in evaluation types and methods for different patient populations' primary payer type (i.e., practices with a high proportion of Medicaid patients will be more likely to conduct financial evaluation).

Analysis

The data collected in this study was analyzed using SPSS statistical software. Preliminary analysis of the data included descriptive statistics on the study participants and types of sites represented in this study. In the next part of the analysis, logistic regressions were completed to

determine how site characteristics impact the probability of evaluating clinical, operational, and financial characteristics of programs. This type of analysis is important because it shows the predictive value of variables relevant to evaluation of IBHC programs.

Results

This study included 145 participants (which exceeded the 109 required to have 80% power based on an *a* priori power analysis using *G*Power;* Faul, Erdfelder, Buchner, & Lang, 2009; Faul, Erdfelder, Lang, & Buchner, 2007) representing 93 separate health systems across the United States. Most participants were behavioral health clinicians (61%), about 25% were medical providers, and 25% were administrators (or providers with a dual administrative role; approximately 5% of participants identified their sole position as an administrator). The breakdown of participant descriptive information can be viewed in Table 1. Of those who stated their primary role was as a behavioral health provider, there was a fairly even distribution of clinical social workers (17.9%), marriage and family therapists (MFTs; 15.2%), and psychologists (13.8%), with a smaller group of professional counselors (LPCs; 6.2%), and "other" types of behavioral health clinicians (3.4%). Of the medical providers, 76% were physicians (MD). There were 29 respondents who said that they were behavioral health or integrated care directors, 10 of which said that being the director was their primary role in their organization. Eight respondents said that they were administrators, and these respondents had varying titles and positions (i.e., executive or clinical director, grant or program coordinator, CEO). Nineteen participants reported that they have multiple roles (i.e., medical provider and administrator). Only five respondents (3.7%) reported that they were not clinically active.

Site Information

A clinical and financial view on site information offered information on types of clinical contexts and the financial make-up of the IBHC programs. Participants were asked an assortment of questions about the site, or sites that they worked in, including information about the types of medical and behavioral health providers. See Table 2 for detailed site information.

Clinical. The most common types of primary care sites were Federally Qualified Healthcare Centers (FQHCs; 31.6%), community healthcare centers (25%), private practice (20.6%), and residency programs (16.9%). Participants were asked which type of behavioral health clinician was staffed at their site(s) and over half of participants (55%) reported that clinical social workers were the type of behavioral health providers at their site(s), 40% reported MFTs, and 39% reported psychologists. Additionally, 65% of participants reported that their site staffed multiple types of behavioral health clinicians (i.e., clinical social workers and MFTs). There was good representation and even distribution of types of sites and types of behavioral health providers (see Table 3). On average, participants reported that there were two behavioral health clinicians working at their sites or in their programs. Comparatively, participants reported an average of 21 medical providers in their sites or programs. Figure 1 shows how much coverage is provided by behavioral health clinicians in participants' organizations, with a breakdown of the type of clinician. There was a high frequency of reported full time social workers (N = 34), with most participants reporting that they had 20-40 hours of coverage from their behavioral health providers.

Operational. To explore the operational world of IBHC programs, participants were asked about the accrediting body of their healthcare organization. Of the participants who knew their organization was accredited (45%), about half of participants responded that their sites were

accredited by the Joint Commission Accreditation of Healthcare Organizations (52.2%), and about one quarter of participants responded that their site was accredited by the National Committee for Quality Assurance (NCQA). Eight participants reported that their programs were accredited by more than one accrediting body.

Financial. Approximately half of participants reported that the behavioral health clinicians were funded through grants (48.8%), while approximately 40% reported that their programs were billing public and/or private insurance for the reimbursement of behavioral health services. The high proportion of grant funding is reflective of the many challenges and barriers to operating an IBHC program that relies on reimbursement for services (Kathol, Butler, McAlpine, & Kane, 2010). About 15% of participants said they did not know how the behavioral health clinicians were funded. Approximately 30% of participants reported that they had "other" sources of funding. These "other" funding sources were reported to be salaries from the behavioral health clinician's position as a faculty member, free behavioral health services from student interns, department funds for behavioral health clinicians working in residency settings, or that behavioral health clinicians were funded through a hospital but partnered with the primary care site. Figure 2 shows information about the proportions of payers in participants' patient populations. Most participants reported that they had a higher proportion of Medicaid patients (25-75%) compared to other payer groups (Medicare, private/commercial, or no insurance).

Evaluation Practices

Over half of participants reported that their IBHC program was being evaluated (68.7%), while 12% of participants reported that they were unsure if the program was being evaluated (see Table 4 for evaluation information). Participants were able to select multiple options when asked who was responsible for the evaluation of their IBHC program. About 60% of participants

reported that the behavioral health director was responsible for the evaluation, 30% said the integrated care implementation team (e.g., group of providers and staff who collaborate on the integrated care implementation), 28% said the behavioral health clinicians, 17% said the practice manager, 16% reported the medical director, 4% reported the CEO, and 26% said "other." Of those who responded "other" to who was responsible for the evaluation, those participants reported that there was a quality improvement or assurance person or team, a compliance officer, chief of operations, or a consultant statistician who were responsible for the evaluation. This indicates that there is not a consistent person or team who is responsible for the evaluation across varying types of sites and organizations.

About 47% of the participants who responded that their site is involved in evaluation (62% of the entire sample) said that they were evaluating clinical characteristics of their program, 37.5% reported that they were evaluating operational characteristics, and 43.3% reported that they were evaluating financial characteristics. This indicates that less than half of participants who said their program was undergoing evaluation could identify if the program was being evaluated for characteristics related to any of the three worlds of the Three World view (Peek, 2008). Of the participants who indicated that their program was undergoing evaluation (62%), 29% reported that they were engaged in clinical and operational evaluation, 33% in clinical and financial evaluation, 27% in operational and financial evaluation, and 21% were engaged in clinical, operational, and financial evaluation (groupings were not mutually exclusive). These results show that there is not a high number of contexts using Three World view evaluation. Below, the specific evaluation practices for the clinical, operational, and financial worlds are described (see also Table 5). The methods used for evaluation indicate that there is a heavy reliance on the electronic medical record to pull evaluation data, however, the

electronic medical record was also identified as a barrier to conducting evaluation which is discussed below.

Clinical evaluation. Participants provided open response information about the evaluation of their clinical practices related to IBHC (30.3%). Participants reported that their programs tracked behavioral health screening results (e.g., Patient Health Questionnaire-9, Generalized Anxiety Disorder-7; Spitzer, Kroenke, Williams, & Lowe, 2006; Spitzer, Kroenke, & Williams, 1999), physical health outcomes (e.g., hemoglobin A1c, cholesterol, hospital admissions), length of time in treatment, patient satisfaction, and fidelity to the primary care behavioral health (PCBH) model. Of respondents who reported on the clinical evaluation of their programs, 58.1% reported that clinical data was pulled from the electronic health record. Other methods included using separate tracking sheets (such as a flow sheet or spreadsheet) or collecting reports provided during clinical supervision. These clinical characteristics were similar to what was discovered in the literature from the systematic review provided in chapter three (Muse et al., 2017).

Operational evaluation. Participants were also able to provide open response information about how they evaluated the operational characteristics of their program (23.4%). Participants reported that their programs were active in tracking referral types and frequencies (3%), appointment types (i.e., initial or follow up; 3%), provider satisfaction (6%), location of behavioral health service (e.g., in patient exam room or behavioral health office; 3%), and the frequency of warm-handoffs (3%). Participants frequently reported that the electronic medical record was used to track referral types, frequency of referrals, and the frequency of warm handoffs (44%). Participants also reported that the behavioral health clinicians completed a flow sheet (3%), electronic survey (12%), or entered data in a spreadsheet after each encounter to

track operational information (3%). One participant reported that some operational information was pulled from patient surveys. Two participants reported the use of implementation teams to review clinic and patient flow.

Financial evaluation. In the open response section for financial evaluation, participants (26.2%) reported that they were tracking several variables related to time and productivity. These variables were the length of time for different types of appointments (3%), time to complete referrals (3%), waiting time (3%), the number of appointments for behavioral health clinicians (6%), cancellations and no shows (3%), and number of patients per day and hour (6%). Additionally, participants reported that they were monitoring and evaluating variables related to sustainability. These variables were frequency of billing codes used (13%), frequency and types of billable services provided by behavioral health clinicians (8%), the revenue generated from paid claims (6%), and revenue collected for paid claims by payer type (i.e., Medicaid, private; 8%).

Evaluation Tools

Approximately 31% of participants reported that they use a formal site evaluation tool. The breakdown of tools used can be viewed in Table 6. The most reported evaluation tools were the MeHAF Site Self Assessment (10.3%; Scheirer, Leonard, Ronan, & Boober, 2010), the Behavioral Health Integration Checklist (10.3%; University of Washington Advancing Integrated Mental Health Solutions [AIMS] Center, 2012), and the Integration Practice Assessment Tool (IPAT; 8.3%; Waxmonsky, Auxier, Romero, & Heath, 2014). The reported infrequent use of evaluation tools might indicate that many participants are not aware of the evaluation resources available (i.e., through http://www.integration.samhsa.gov). The lack of tools cited might also suggest that programs are more responsible to the tools/reporting requirements for their

accrediting body (e.g., Joint Commission) and as such other forms of evaluation are not a priority or not as relevant to the context's needs. Below are some of the reasons that participants cited as barriers to completing evaluations.

Barriers to Evaluation

Participants who reported that there was a lack of evaluation of their programs cited many reasons for why evaluation was not occurring. The most commonly cited reasons were that the integrated behavioral health program and the larger organization that it was a part of do not have the time, personnel, resources, and buy-in to support the implementation of evaluation. Participants reported that buy-in from administration was a barrier for conducting evaluation. Participants said that without clear data to show the utility and cost effectiveness of IBHC, the administration was not prioritizing evaluation, because administration was not sure of the usefulness of the program or had other pressing projects to attend to. Other reasons were that the IBHC program was in the beginning stages of implementation or too small to justify evaluation efforts. One participant said that with the rapid changes occurring in the healthcare system, there is little support for evaluation since the future of the programs is unclear. Other barriers included a lack of knowledge within organizations about evaluation and difficulty getting information from the electronic medical record. Many of the barriers discussed above show that IBHC programs could benefit from simple, feasible steps to measure program characteristics, such as taking initiative to present regular reports to administration about the IBHC program's population reach.

Hypothesis 1: Professional Roles

For the first hypothesis, it was predicted that there would be significant differences in responses about evaluation for different professional roles (e.g., medical provider, behavioral

health provider, administrator). A logistic regression model was used to determine if professional role affected the likelihood of knowing about whether evaluation was going on in their program. In the survey, participants were asked if evaluation was going on in their program. This variable was dummy coded into three binary variables for the "yes," "no," and "don't know" responses. The dependent variable for this analysis was the binary item (i.e., 1 = yes, 0 = no) indicating if participants said "I don't know" to the question about overall evaluation. This model was statistically significant ($X^2(2) = 15.31$, $p < .001$), explaining 21.7% of the variance (Nagelkerke R^2) in responding "I don't know" to the question about whether their integration behavioral health program was being evaluated, and correctly classified 88.5% of cases (see Table 7). The professional roles included in the model were behavioral health clinicians and medical providers, with administrators used as a comparison group. Medical providers ($B = 2.639$, $SE = 1.1$, $p = .015$) were 14 times more likely to report that they did not know about evaluation practices compared to behavioral health clinicians ($OR = 1.67$) and administrators (reference group). This indicates that medical providers might be less included in program implementation efforts and evaluation, which is consistent with the primarily clinical role that medical providers have.

In the next model for this hypothesis, knowledge about evaluation was compared for behavioral health clinicians and administrators, with medical providers as the reference category. In this model, with the same dependent variable, the overall model was significant, ($X^2(2) = 15.31$, $p < .001$), explaining 21.7% of the variance (Nagelkerke R^2) in responding "I don't know" to the question about whether or not their integration behavioral health program was being evaluated (see Table 8). However, both behavioral health clinicians and administrators had odds ratios less than one. As the odds ratios are both less than one, the degree of difference between

administrators' odds of not knowing about evaluation and BHCs' odds of not knowing about evaluation is not known (see Table 8 for coefficients).

Hypothesis 2: Degree of Integration

The second hypothesis predicted that participants operating in more integrated settings (i.e., higher frequency of warm handoffs) would be more likely to report that their site conducts evaluation. Four items related to degree of integration were used to test this hypothesis (frequency of warm handoffs, behavioral health screening, collaboration between PCPs and BHCs, and referrals for managing comorbid medical and behavioral health conditions) using a logistic regression model. The dependent variable was a binary item on whether the participant reported that their program conducted evaluation. Results of the model showed that none of the four integration items were significantly related to conducting evaluation (see Table 9). The model was not statistically significant ($X^2(5) = 3.4$, $p = .6$), and only explained 4.7% of variance (Nagelkerke R^2), and correctly classified 76.9% of cases. These results mean that degree of integration did not influence the likelihood that a participant's site was conducting evaluation.

Hypothesis 3: Funding

The third hypothesis predicted that there would be significant differences in evaluation practice for different funding sources for the IBHC program (i.e., grant funding, billing for reimbursement). A logistic regression model was used to explore the effect of funding sources on engaging in evaluation. The dependent variable was a dichotomous item (i.e., participants responded "yes" their programs were conducting evaluation; "no" or "don't know" options were coded as zero). For the first logistic regression model, the participants who were only using one funding mechanism were included (i.e., soley funded via a grant or through billing and reimbursement). The results of this model were statistically significant ($X^2(2) = 10.9$, $p < .01$)

explaining 16.2% of the variance (Nagelkerke R^2), and correctly classified 62.4% of cases. Participants who reported having grant funding only (B =1.6, SE = .6, $p < .05$) were 5.3 times more likely than participants operating off of mixed funding or alternative funding (comparison group) to be doing evaluation of their programs, while participants who reported only using billing and reimbursement (B =2.0 , SE = .70, $p < .05$) were 7.2 times more likely to evaluate their programs (see Table 10).

A second logistic regression model was run to see if mixed funding sources (grants and billing for services) was associated with conducting evaluation. The results of this model were not statistically significant ($X^2(1) = 2.4$, $p = .12$), meaning that using mixed funding sources did not affect the likelihood of conducting evaluation. Further analysis was conducted to determine if funding was related to the type of evaluation being conducted (e.g., clinical, operational, or financial). Participants with grant funding were not significantly more likely to evaluate all three worlds of the Three World view (Peek, 2008) compared to participants without grant funding. However, those who reported that their funding came solely through billing and reimbursement were approximately seven times more likely ($X^2(1) = 14.4$, $p < .001$; B =1.9, SE = .6, $p < .001$) to conduct evaluation of all three worlds compared to participants with grant funding, mixed funding, or alternative funding. Those who reported that their funding came solely through billing and reimbursement were approximately four times more likely ($X^2(1) = 15.34$, $p < .001$; B =1.6, SE = .4, $p < .001$) to conduct evaluation of the operational world, and approximately nine times more likely ($X^2(1) = 30.74$, $p < .001$; B = 2.2, SE = .4, $p < .001$) to conduct evaluation of the financial world compared to participants with grant funding, mixed funding, or alternative funding. However, these participants with funding through billing and reimbursement were not significantly more likely to evaluate the clinical world. Instead, participants with grant funding

were approximately four times more likely to evaluate the clinical world ($X^2(1) = 13.5$, $p < .001$; $B = 1.3$, $SE = .4$, $p < .001$) compared to participants with reimbursement funding, mixed funding, or alternative funding. This makes sense given that most grants have a clinical focus. These results about funding and evaluation demonstrate that participants with grant funds or participants who are billing for reimbursement are more likely to conduct evaluation compared to participants who are not funded through grants or billing for reimbursement (e.g., behavioral health program is funded through department faculty salaries).

Hypothesis 4: Payer Types

For the fourth hypothesis, it was expected that the patient populations' primary payer type (i.e., Medicaid, uninsured) reported by the participant would be associated with financial evaluation practices (dependent variable was a binary item for "yes" the participants said the program was conducting financial evaluation; "no" or "don't know" options were coded as zero). For this analysis, each payer type was recoded into a binary variable reflecting the primary payer type (i.e., a value of one meant that more than 50% of the patient population was of that payer). All of the payer types (Medicaid, Medicare, private, uninsured) were entered into the logistic regression model and were not significant predictors of financial evaluation ($X^2(4) = 1.9$, $p = .7$; see Table 11). This means that primary payer type (e.g., having greater than 50% of patients using Medicaid) did not affect the likelihood of conducting financial evaluation.

Discussion

The purpose of this study was to examine the Three World view (Peek, 2008) evaluation practices of real world implementers of IBHC. This study specifically described clinical, operational, and financial evaluation practices from a diverse sample of professionals working in IBHC settings, explored the relationship between perceptions about evaluation between different

types of professionals involved in IBHC efforts, and defined how the degree of integration is related to clinical, operational, and financial types of evaluation. This study is the first of its kind in examining how professionals in IBHC conduct evaluations. The results from this project make a significant contribution to the literature on evaluation of IBHC (as described below), and provide several important implications for future research and evaluation.

The first contribution of this study is filling a gap in the literature by being the first meta-evaluation of IBHC. As demonstrated in the systematic review provided in chapter three (Muse, Lamson, Didericksen, & Hodgson, 2017), there is a significant body of literature on independently researching or evaluating clinical, operational, and financial characteristics of IBHC, but no research that could be found on best practices for evaluating all three worlds of IBHC simultaneously. Additionally, there has been no research on using the Three World view (Peek, 2008) as a framework for evaluation until this study, even though it is a commonly referenced framework by those who receive training in integrated care (Trudeau-Hern, Mendenhall, & Wong, 2014). As Peek (2008) stated, IBHC does not occur in the clinical world as a silo. The processes, activities, and challenges of integrating behavioral health and primary care must be evenly distributed across the clinical, operational, and financial worlds. Little is known about how existing IBHC programs are measuring the clinical, organizational, and financial changes necessary to transform primary care systems into sustainable, patient-centered, whole person care systems (Peek et al., 2014), which is why this meta-evaluation was necessary.

Conducting evaluation is critical to gather evidence on how IBHC is effective (clinical), feasible (operational), and affordable (financial). This evidence is a critical to change policy and payer regulations that are common barriers to IBHC (Ader et al., 2015). This study plays a critical role in contributing to the literature on IBHC by asking real world implementers how

they measure the clinical, operational, and financial aspects that make IBHC successful and sustainable. This study identified organizational level practices for determining clinical, operational, and financial success in IBHC implementation.

As discussed above, this study shows that the Three World view (Peek, 2008) is a useful way to understand evaluation of IBHC. Results from this study were consistent with clinical indicators used in previous research (Bower, Gilbody, Richards, Fletcher, & Sutton, 2006; Butler et al., 2011; Craven & Bland, 2006; Gilbody, Bower, Fletcher, Richards, & Sutton, 2006; Katon & Seelig, 2008; Oxman, Dietrich, & Schulberg, 2005) to screen and monitor common behavioral health concerns (i.e., depression, anxiety, ADHD). Similar to existing research, participants in this study reported that their programs tracked symptoms and screening tool results to monitor patients' depression, anxiety, and substance abuse. In the operational world, the measures reported to evaluate the operational world were consistent with what was found in the literature from Muse et al. (2017). Participants stated that they tracked referral types and frequencies and provider satisfaction. One noticeable difference between previous research and this study was the reported use of flow sheets. In Muse et al. (2017), many studies indicated that the electronic medical record was used for collecting clinical (e.g., screening results) and operational (e.g., frequencies of referrals) information. In this study, participants reported that behavioral health clinicians would complete a flow sheet for each patient (electronically or hard copy) to track the screening results or source of referral. Use of flow sheets should be further explored to see if it hinders communication between medical and behavioral health providers by keeping separate information, as the participants in this study reported that flow sheets were for the BHC use only. In the financial world, participants of this study echoed concerns in the literature (Gilbody et al., 2006) about evaluating sustainability and barriers to seeking reimbursement for services.

Other results from this study indicate that the majority of IBHC programs are involved in some level of evaluation, however only 21% of programs evaluated aspects from all three worlds of the Three World view (Peek, 2008). In this study, there were significant differences in knowledge about evaluation between different professional roles. Medical providers were least knowledgeable about evaluation and administrators were the most knowledgeable about evaluation. This confirms the assumption that medical providers are less likely to be involved in implementation and evaluation efforts (in non-academic settings) since their role is primarily clinical, and the organization depends on medical providers to generate revenue from patient encounters. This study also explored the relationship between the degree of integration and evaluation and discovered that the two variables were not related. There were interesting findings related to the funding source of IBHC programs; in particular funding sources were directly related to type of evaluation. Grant funded programs were most likely to evaluate clinical characteristics. This is consistent with the clinical basis of most IBHC grant deliverables (Health Resources and Services Administration, 2017). Programs with single-source funding from billing and reimbursement for services were more likely to evaluate operational and financial characteristics of their programs compared to programs with grant, mixed-source funding, or alternative funding. This indicates that programs who rely on billing and reimbursement are more attentive to productivity (operational) and the bottom-line (financial) (Peek, 2008). Before discussing the implications from these findings, it is important to highlight some limitations of this study.

Limitations

There were a few limitations related to the survey used for this study. First, it was not clear if participants were reporting about a single site or multiple sites in their organization. This

limitation does not significantly inhibit the interpretation of the data, however future research should explore differences in single site evaluation efforts compared to organization or system wide evaluation efforts. A second limit of the survey is that participants were asked about their evaluation methods in an open response format, limiting the use of the information in analyses (i.e., since the data was in text format it could not be used for quantitative analysis). Additionally, the data collected in the study was based on self-report, which cannot be verified for accuracy. Finally, the recruitment methods used were based on the primary researcher's professional connections which were primarily marriage and family therapists.

Research Implications

Based on the results of this study, a Three World view serves and an appropriate and comprehensive framework for IBHC research. This study demonstrated that real world implementers are struggling to measure the outcomes from all three worlds. Results from this study illustrated that administrators were the most likely to know about evaluation processes, but there was little consistency in the role or team who was responsible for evaluation (i.e., medical director, external statistician, practice manager). Future researchers should explore the training needs of administrators, medical providers, and BHCs when it comes to implementation and evaluation, to bridge the gap between different levels of staff and their involvement in IBHC success and sustainability. Furthermore, researchers should examine the time and resources it takes to collect data and form reports (i.e., how many and what types of professionals need to be involved, what type of software is needed, how long does it take to generate and interpret reports). This would be valuable information for both funders and programs to determine the feasibility, cost, and efficiency of completing evaluations.

This study found that the patient payer type (e.g., Medicaid) and the degree of integration (i.e., degree to which medical and behavioral health services were integrated) did not influence the likelihood for conducting evaluation. Although those relationships were not indicated in this study, future researchers should continue to explore how or if payer type and degree of integration influence evaluation resources, barriers, and methods. Although patient payer type did not influence the likelihood of evaluation, another financial variable, (i.e., IBHC program funding), was related to the likelihood of evaluation. This study found that programs who were billing for reimbursement of services were more likely to evaluate operational and financial characteristics of their programs, while grant funded programs were more likely to evaluate clinical characteristics. Researchers should continue to explore how IBHC programs with different funding sources measure their outcomes (i.e., which funding mechanisms are associated with types of evaluation, and how funding impacts resources allocated for evaluation).

Evaluation Implications

This study revealed that programs with grant funding are most likely to conduct clinical evaluation, but not operational or financial evaluation. This finding is concerning for grant funded programs who, because their funding is based on clinical deliverables (i.e., increase population access to services), may not give as much attention to the operational and financial components of IBHC implementation. There is a general trend in community grants and research to set up sustainable programs that can exist after the funding ends, rather than setting up programs in communities and pulling them out when the money runs out. If grant funders do not ask their grantees to also attend to the operational and financial elements of IBHC, then the programs are likely to fail or struggle with sustainability (Peek, 2008). As a solution, grant funders should consider asking grantees to collect information and report on growth and success

of clinical, operational, and financial outcomes. This will set the grantees up for long term overall success.

This study also highlighted that administrators were more likely to know about evaluation processes and procedures compared to medical providers or behavioral health providers. This brings up an important implication for evaluation. Administrators of IBHC programs are a diverse array of professionals ranging from chief medical officers (MD), to behavioral health directors (PhD), to practice managers (BA/BS). Due to varying professional backgrounds, and differences in fields of study and continuing education opportunities (i.e., access to research publications and national conferences versus local CEU opportunities with managed care entities), information about evaluation is not likely to be disseminated equally across different types of administrators. For example, a behavioral health director with a doctoral degree might keep up to date on IBHC research and evaluation updates through a national email listserve, but a practice manager at a rural community clinic might only here updates on billing and documentation from the local managed care organization. This means that guidelines on evaluation (further discussed in the following chapter) need to be feasible and accessible (i.e., standardized guidelines available for public use) for real world implementers as well as "well-controlled, resource-rich" health care organizations.

Summary

This study was the first of its kind to conduct a meta-evaluation of integrated behavioral health care using the framework of the Three World view (Peek, 2008). This study showed that there is significant variation in evaluation practices and understanding of evaluation among professionals working in integrated behavioral health care. Implications for this study are relevant to researchers, behavioral health clinicians, medical providers, and administrators who

are working to evaluate their behavioral health programs to demonstrate utility and sustainability, as well as make improvements to providing higher quality care. It is time for professionals working in integrated behavioral health care to collaborate and come together to use their unique skills and knowledge to better evaluate the clinical, operational, and financial worlds. Attending to all three worlds through evaluation will lead to improvements to health care quality to benefit every patient receiving primary care.

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Table 1

Participant Information

	Frequency (%)
Behavioral Health Clinician/Provider	*N* = 82
MFT	22 (15.2%)
Clinical social worker	26 (17.9%)
LPC	9 (6.2%)
Psychologist	20 (13.8%)
Other	5 (3.4%)
Medical Provider	*N* = 34
MD	26 (17.9%)
NP	1 (.7%)
DO	2 (1.4%)
PA	3 (2.1%)
Other	2 (1.4%)
Administrator	*N* = 36
Behavioral Health Director	29 (80.5%)
CEO	1 (2.8%)
Clinical/ Executive Director	3 (8.3%)
Program/Grant Coordinator	2 (5.6%)
Other	1 (2.8%)
Multiple Roles	19 (13.1%)
Clinical Activity	
Clinically active	129 (96.2%)
Not clinically active	5 (3.7%)

Note. Participants were able to choose multiple options per question (i.e., participant is a provider and administrator).

Table 2

Integrated Behavioral Health Care Site/Program Information

	Frequency(%)
Type of Site(s)	
FQHC	43 (31.6%)
Community healthcare center	34 (25.0%)
Private practice	28 (20.6%)
Military base	1 (.7%)
VA	1 (.7%)
Family medicine residency	23 (16.9%)
Tribal healthcare	2 (1.5%)
Other	14 (10.3%)
Type of Behavioral Health Provider(s)	
Psychologist	50 (38.8%)
Clinical Social Worker	71 (55.0%)
MFT/MedFT	51 (39.5%)
Substance Abuse Counselor	15 (11.6%)
LPC	17 (13.2%)
Other	15 (11.6%)
Funding Sources for IBHC	
Grant funding	64 (48.8%)
Billing for reimbursement	53 (40.5%)
Other	40 (30.5%)
Unknown	19 (14.5%)
Accrediting Body	
NCQA	19 (26.8%)
JCAHO	37 (52.2%)
ACGME	10 (14.1%)
Other	5 (7.0%)
Number of Behavioral Health Providers	*M (SD)*
Psychologist	2 (1.8)
Clinical Social Worker	1.8 (1.2)
MFT	3.2 (4.1)
Substance Abuse Counselor	2.2 (2)
Other	2.1 (2.4)
Number of Medical Providers	21 (23.1)

Note. This information is what participants reported about their sites and programs (not about the participants themselves, see Table 1). Participants were able to choose multiple options per question (i.e., site is accredited by NCQA and JCAHO). There were 145 participants in the study.

Table 3

Site and Provider Types Reported by Participants

	Frequency(%)
FQHC	43 (31.6%)
Psychologist	13 (31.0%)
Clinical Social Worker	24 (57.1%)
MFT/MedFT	13 (31.0%)
Substance Abuse Counselor	6 (14.3%)
Other	8 (19.0%)
Community Healthcare Center	34 (25%)
Psychologist	8 (30.8%)
Clinical Social Worker	14 (53.8%)
MFT/MedFT	13 (50.0%)
Substance Abuse Counselor	3 (11.5%)
Other	3 (11.5%)
Private Practice	28 (20.6%)
Psychologist	8 (28.6%)
Clinical Social Worker	15 (53.6%)
MFT/MedFT	4 (14.3%)
Substance Abuse Counselor	1 (3.6%)
Other	9 (32.1%)
Family Medicine Residency	23 (16.9%)
Psychologist	12 (54.5%)
Clinical Social Worker	12 (54.5%)
MFT	9 (40.9%)
Substance Abuse Counselor	3 (13.6%)
Other	6 (27.3%)

Note. This information is what participants reported about their sites and programs (not about the participants themselves, see Table 1). Participants could choose multiple options per question (i.e., site has psychologists and social workers). There were two participants from a Tribal Healthcare setting (reported social worker BHC), one participant from the VA Center (reported a psychologist and "other" as the BHCs), one from a military base (did not report BHC type). There were 145 participants in the study.

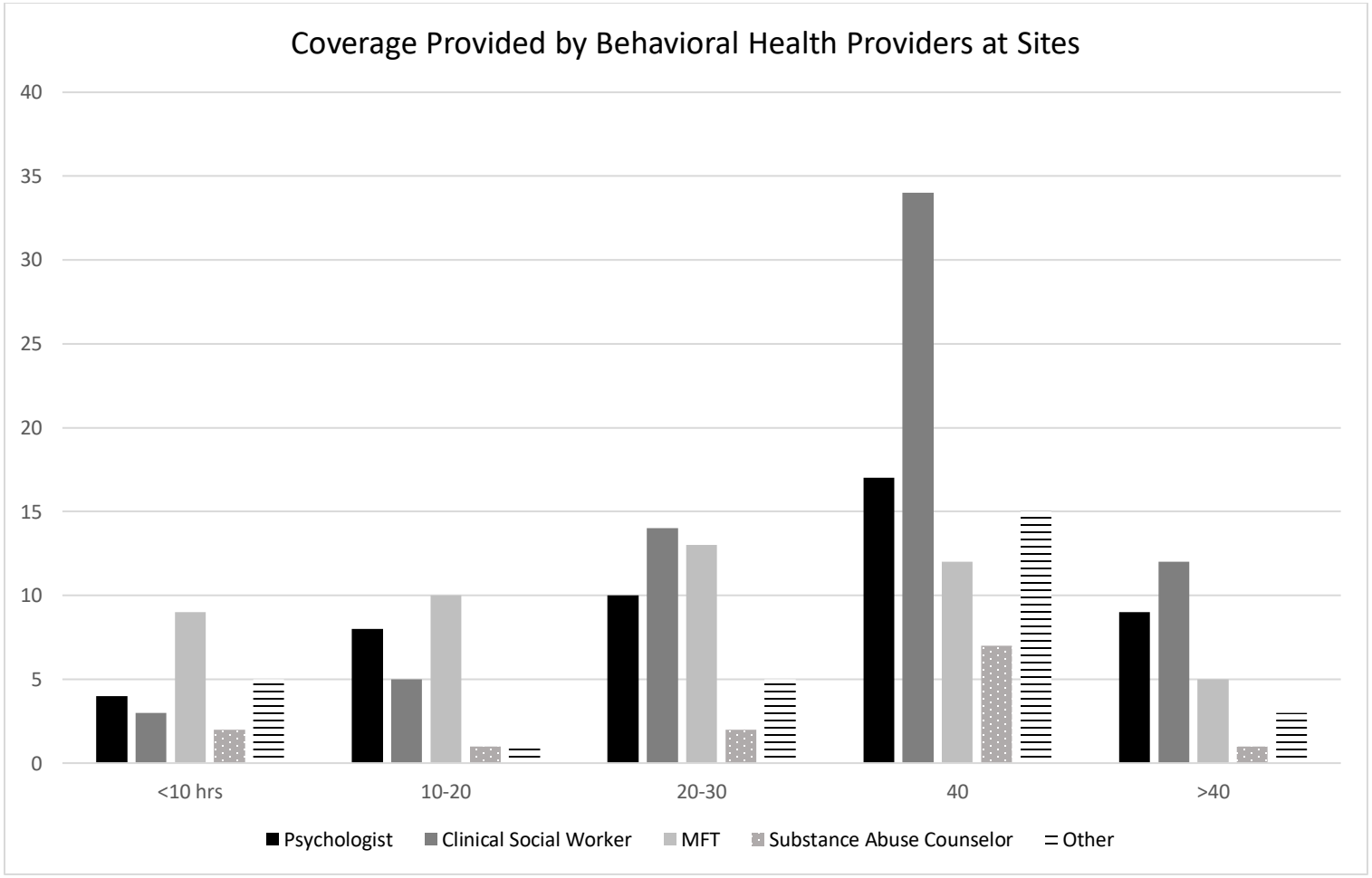

Figure 1. *Participants' report of coverage provided behavioral health providers at their sites (hours per week)*

Note. The numbers on the left side of the chart indicate how many participants selected the column (e.g., 5 participants reported that "other" behavioral health clinicians provided less than 10 hours of coverage per week).

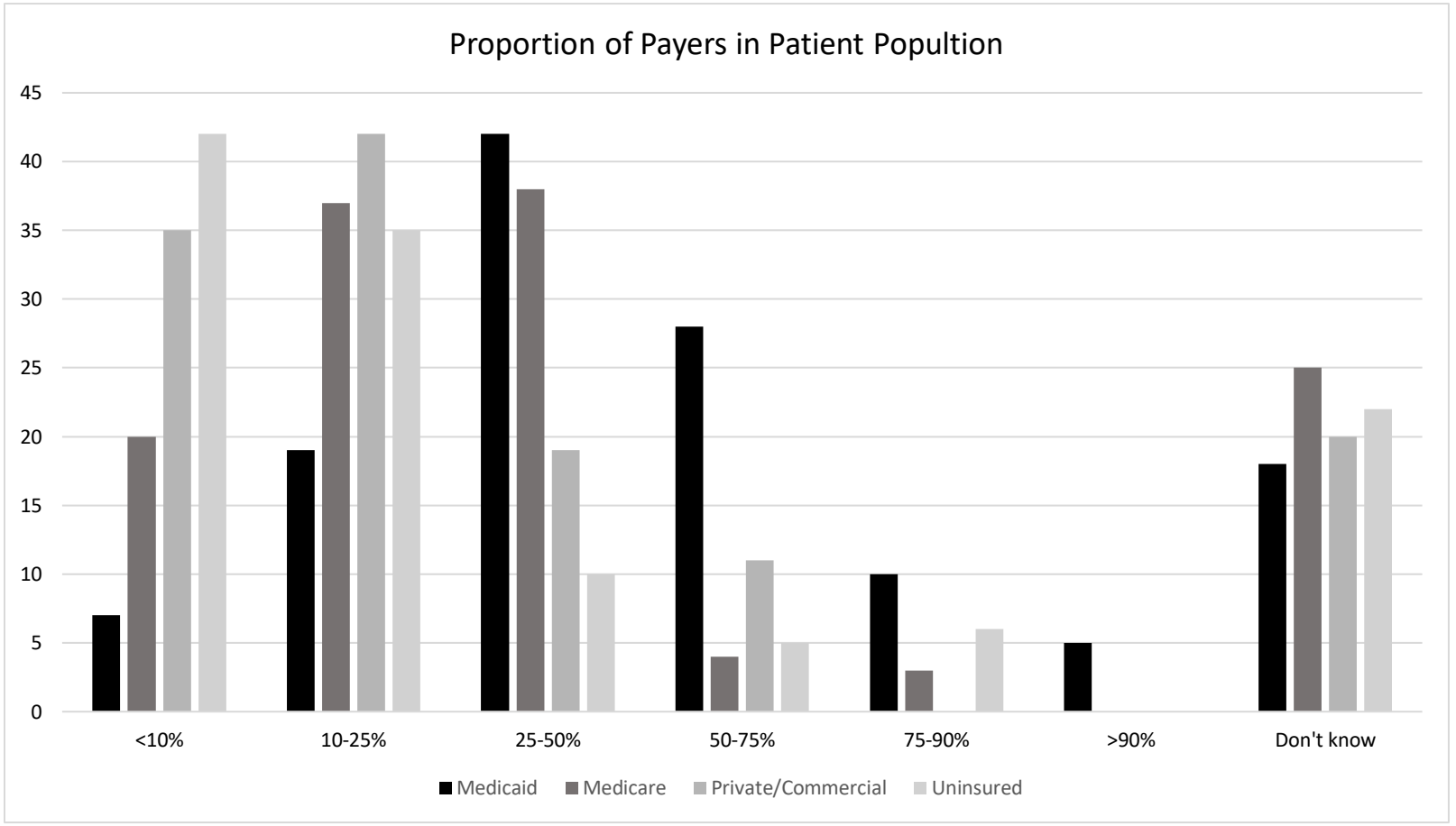

Figure 2. *Composition and distribution of payer types in participants' program*

Note. The numbers on the left side of the chart indicate how many participants selected the column (i.e., 5 participants reported that their patient population had less than 10% Medicaid).

Table 4

Three World view Evaluation Practices

	Frequency(%)
IBHC Program Evaluation is Conducted	
Yes	90 (68.7%)
No	26 (19.9%)
Unsure	15 (11.9%)
Responsible for Evaluation (Multiple response option)	
Behavioral Health Director	53 (60.2%)
Behavioral Health Provider(s)	25 (28.4%)
Medical Director	14 (15.9%)
CEO	4 (4.6%)
Practice Manager	15 (17%)
Implementation team	26 (29.6%)
Other	23 (26%)
Clinical Characteristics Are Evaluated	
Yes	49 (47.1%)
No	23 (21.1%)
Unsure	32 (30.8%)
Operational Characteristics Are Evaluated	
Yes	39 (37.5%)
No	21 (20.2%)
Unsure	44 (42.3%)
Financial Characteristics Are Evaluated	
Yes	45 (43.3%)
No	21 (20.2%)
Unsure	38 (36.5%)

Table 5

Three World View Evaluation Practices Report of Data from Open Responses

Outcomes	Method used
Clinical Outcomes	
Tracking behavioral health screeners (PHQ-9, GAD-7, CAGE AID) Social Determinants Patient Stress Questionnaire Tracking physical health outcomes (hemoglobin A1c, cholesterol) Emergency Room Utilization Hospital Admissions Patient Satisfaction PCBH Model Fidelity	Electronic Health Record review and reports Site Assessments provided by technical assistance services Behavioral health flow sheets Patient registry Supervision
Operational Outcomes	
Referral types and frequencies Appointment types (i.e., initial or follow up) Provider satisfaction Frequency of warm-handoffs	Electronic Health Record Review and Reports Track daily provider schedules and appointments Post-encounter provider surveys Behavioral health flow sheets Implementation team review
Financial Outcomes	
Length of time for different types of appointments, Time to complete referrals Waiting time BHC Productivity Cancellations and no shows Frequency of billing codes used Frequency and types of billable services provided by behavioral health clinicians Revenue generated from paid claims Revenue collected for paid claims by payer type	Review of reports from billing software Electronic Health Record Review and reports

Note. This information was received via open response options in surveys. (PHQ-9, Patient Health Questionnaire; GAD-7, Generalized Anxiety Disorder screening; CAGE AID, CAGE Questions Adapted to Include Drugs; PCBH, Primary Care Behavioral Health; BHC, Behavioral Health Clinician)

Table 6

Site Evaluation Tools Implemented

	Frequency (%)
MeHAF Site Self Assessment	15 (10.3%)
Organizational Assessment Toolkit for Primary and Behavioral Healthcare Integration (OATI)	1 (.7%)
The Integration Practice Assessment Tool (IPAT)	12 (8.3%)
The Behavioral Health Integration Checklist	15 (10.3%)
The Integrated Behavioral Project Tool	0 (0%)
The Integrated Treatment Tool	0 (0%)
Primary Care Behavioral Health Toolkit	2 (.1%)
Barriers to Same Day Visits (BUS)	1 (.7%)

Note. The Primary Care Behavioral Health Toolkit is composed of multiple evaluation tools that address clinical, operational, and financial outcomes.

Table 7

Logistic Regression for Behavioral Health Clinicians and Medical Providers' Knowledge about Evaluation

Predictor	*B*	*SE B*	*OR*
Professional Role			
Behavioral Health Clinicians	.54	1.14	1.62
Medical Providers	2.64*	1.09	14.00
Constant		-3.31**	
χ^2		15.31***	
df		2	

Note: OR = odds ratio. Knowledge about evaluation practices (not knowing about evaluation practices) coded as 1 for *yes* ("I don't know") and 0 for *no*. Administrators were used as the reference group.
*$p < .05$. **$p < .01$. ***$p < .001$.

Table 8

Logistic Regression for Behavioral Health Clinicians and Administrators' Knowledge about Evaluation

Predictor	*B*	*SE B*	*OR*
Professional Role			
Behavioral Health Clinicians	-2.125*	.64	.12
Administrators	-2.64**	1.09	.07
Constant		-.69	
χ^2		15.31***	
df		2	

Note: OR = odds ratio. Knowledge about evaluation practices (not knowing about evaluation practices) coded as 1 for *yes* ("I don't know") and 0 for *no*. Medical providers were used as the reference group.
*$p < .05$. **$p < .01$. ***$p < .001$.

Table 9

Logistic Regression for Degree of Integration and Evaluation Practices

Predictor	*B*	*SE B*	*OR*
Degree of Integration			
Frequency of Warm Handoffs	-.04	.32	.96
Frequency of Behavioral Health Screening	.05	.40	1.05
Frequency of Collaboration	.37	.37	1.45
Referrals	.19	.32	1.21
Constant		-3.18	
χ^2		3.4	
df		5	

Note: OR = odds ratio. Program conducts evaluation coded as 1 for *yes* and 0 for *no*.
*$p < .05$. **$p < .01$. ***$p < .001$.

Table 10

Logistic Regression for Funding Mechanisms and Evaluation Practices

Predictor	*B*	*SE B*	*OR*
Type of Funding			
Grant funding	1.67	.64	5.26
Reimbursement	1.98	.70	7.22
Constant		-1.61**	
χ^2		10.97**	
df		2	

Note: OR = odds ratio. Program conducts evaluation coded as 1 for *yes* and 0 for *no*.

Table 11

Logistic Regression for Patient Payer Types and Financial Evaluation Practices

Predictor	*B*	*SE B*	*OR*
Type of Funding			
Medicaid	-.14	.45	.87
Medicare	-1.10	1.12	.33
Private Insurance	.32	1.12	1.38
Uninsured	.42	.70	1.52
Constant		-.71	
χ^2		1.94	
df		4	

Note: OR = odds ratio. Program conducts financial evaluation coded as 1 for *yes* and 0 for *no*.

CHAPTER 6: IMPLICATIONS FOR THREE WORLD VIEW EVALUATION OF INTEGRATED BEHAVIORAL HEALTH CARE PROGRAMS

This chapter brings together research and real world goals and deliverables for evaluation of integrated behavioral health care (IBHC). In this chapter, there is (a) a review of previous dissertation chapters, (b) a discussion of the major findings of this dissertation, (c) a comparison of findings from this dissertation in relation to previous research, (d) research recommendations, (e) evaluation recommendations, (f) policy implications, and (g) training implications for positioning Medical Family Therapists as leaders of IBHC implementation and evaluation. This dissertation used the framework of the Three World view (Peek, 2008), therefore the research and evaluation recommendations provided here are structured around the clinical, operational, and financial worlds of health care.

Dissertation Review

There is well established support that integrating behavioral health care (IBHC) services into primary care improves patient health outcomes and delivers a higher quality of care (Blount, 2003; Butler et al., 2011; Butler et al., 2008; Collins, 2010; Gilbody et al., 2006; Martin, White, Hodgson, Lamson, & Irons, 2014). As implementation, research, evaluation, and policy efforts pertaining to integrated behavioral health care continue, it is important to understand how to measure success of IBHC programs. The purpose of this dissertation was to explore the methods used to measure clinical, operational, and financial outcomes of IBHC. Chapter two provided an overview of the history and development of integrated behavioral health care. In chapter three, a systematic review of the literature on IBHC evaluation identified nine operational evaluation characteristics, eleven financial characteristics, and nine clinical characteristics from a sample of 46 original research studies. Chapter four presented a methodology designed to capture the

evaluation practices of a variety of IBHC programs in the United States. Chapter five included the results of the survey proposed in chapter four, which included information about real world evaluation provided by a sample of professionals working in primary care settings with embedded behavioral health providers. The findings indicated that most IBHC programs included in the sample conducted some form of evaluation. The two main chapters (three and five) include substantial research findings that are important to discuss in greater depth below.

Major Findings

Through the exploration of over 3000 research articles related to IBHC in chapter three, 46 articles were extracted that specifically pertained to evaluation methods and characteristics of IBHC via the Three World view (Peek, 2008). The analysis of published research demonstrated that conducting the Three World view evaluation (i.e., including clinical, operational, and financial outcomes of IBHC) requires complex methods, time, and resources. Furthermore, there were multiple characteristics from each world that were evaluated. The clinical world included population access to behavioral health services, presenting mental health conditions, behavioral health screening scores, referral rates to BHCs, and treatment methods used by BHCs. For the operational and financial worlds, multiple levels of each world were identified. Nine operational characteristics were identified that occurred at two levels, the provider level (collaboration and communication) and the practice level (organizational barriers, charts and treatment plans, implementation, proximity, referral practices and methods, scheduling practices and logistics, and space sharing). Analysis of findings on evaluation of the financial world showed that there were 11 financial characteristics of evaluation divided among multiple levels of the financial world. The financial world included the patient level (no-show rates, patient volume, patient wait time), provider level (BHC distribution of time, workforce development, length of BHC

encounter, and the system level (cost analysis, reimbursement, revenue, financial sustainability, billing codes and procedures) The discovery of this complexity was the inspiration for surveying real world implementers of integrated care in the survey presenting in chapter four.

Chapter five included the results of the survey. Exploring real world IBHC implementation projects was important for identifying evaluation practices from IBHC programs that potentially have different, or less, evaluation knowledge and resources compared to resource-rich settings, such as academic institutions (Peek, Cohen, & deGruy, 2014). Findings from the survey with medical providers, behavioral health clinicians, and administrators working in IBHC settings confirmed that there was a lack of knowledge about evaluation and resources (e.g., time) necessary to engage in the evaluation of clinical, operational, and financial outcomes. Furthermore, administrators were more likely to know about evaluation practices compared to medical providers and behavioral health providers. The survey also highlighted that organizational barriers to implementing IBHC (i.e., lack of communication or support between clinical staff and leadership or administration related to IBHC) were an issue across many different programs. Interestingly, programs with higher degrees of integration were not more likely to conduct evaluation compared to programs with lower degrees of integration. Instead, evaluation was associated with the IBHC program funding. In the survey results, participants who came from IBHC programs that had single source funding, either a grant or billing for services, were most likely to conduct evaluation compared to IBHC programs who had mixed funding sources or alternative methods of funding (e.g., department funding for IBHC program). The survey results from chapter five demonstrated that real world implementers have significant challenges measuring outcomes from the clinical, operational, and financial worlds, which was congruent with the findings in the systematic review.

Comparison and Contribution

Comparing the settings represented in chapters three and five show that similar settings (e.g., federally qualified healthcare centers, community healthcare centers, Veteran's Administration health centers) were represented both in the research and in programs represented from IBHC professionals who participated in the survey. Results from the survey showed a higher representation of marriage and family therapists operating as BHCs in primary care compared to results from the systematic review. The systematic review included representation of more psychologists operating as BHCs, but not all articles in the systematic review reported the professional background of the BHCs in the programs.

Abdallah (2014) examined challenges to successful healthcare organization changes and quality improvement and, similar to the findings in chapter five about barriers to evaluation, found that the commitment and involvement of leadership can be a barrier to organizational level projects. This indicates that having buy in and commitment from leadership and administration is critical to conducting and evaluating projects within a health care system. Abdallah (2014) also found that physicians were considered an asset to implementation efforts, because their involvement in the team was essential, and their absence could hinder the organizational quality improvement initiatives. This is an interesting contrast to the findings from chapter five which showed that medical providers were the least likely to know about evaluating the clinical, operational, and financial outcomes of the IBHC program. While quality improvement and evaluation are not the same, they are both organizational level efforts, and thus might indicate that having medical providers on implementation and evaluation teams is essential to IBHC success.

Another research finding related to the organizational level of evaluation comes from Lambur (2008). Lambur (2008) assessed the best practices for conducting internal and external evaluation in organizations and determined that a key factor in successful evaluation is the support of the highest level of administration. In this project's survey of IBHC professionals, many reported that there was little support for evaluation from leadership and administration. Participants stated that administration had different priorities, or leaders were not convinced of the usefulness of the IBHC program, so there was reluctance to allocate resources for evaluation. Lambur (2008) suggested that administration should support evaluation for the purpose of program improvement, rather than conducting evaluation for accountability (i.e., measuring productivity). This aligns well with evaluation of clinical, operational, and financial outcomes of IBHC. Three World view (Peek, 2008) evaluation is not only for accountability (although the operational world does address productivity), but the purpose is to improve the overall system.

Silliman, Crinion, and Archibald (2016) also explored organizational capacity for evaluation, and found that support for evaluation should be as important among administrators as it is among staff to have successful evaluation processes. Silliman et al. found that "evaluation champions" (p. 22), team members who model good practice and advocate for improvement efforts, played an important role in organizational capacity for evaluation. This finding contrasts with the results from this project which indicated that the biggest barriers to organizational support for evaluation come from administration and leadership.

These connections between a sample of published research findings and a survey of real world IBHC implementers are important for improving research and evaluation in IBHC. Research and evaluation efforts are critical to collect evidence of the success and sustainability of IBHC programs (Kessler, Auxier, Macchi, & Mullin, 2014). This evidence can be used to

support continued funding and policy development to advance the integration of primary care and behavioral health services to provide higher quality care and improve population health. Implications and recommendations for advancing and enhancing IBHC research, evaluation, and policy are provided below.

Research Recommendations

In both the systematic review and survey results, the clinical and financial worlds received more attention than the operational world. The Three World view (Peek, 2008) posits that all three worlds must receive equal attention (in practice) to create and sustain successful IBHC systems. There is a considerable amount of research on the clinical outcomes of IBHC, as well as well documented methods used to measure clinical outcomes (Blount, 2003; Butler et al., 2011; Butler et al., 2008; Collins, 2010; Gilbody et al., 2006; Martin et al., 2014). Thus, the research recommendations from this dissertation are more aligned with the operational and financial worlds of the Three World view (Peek, 2008). These recommendations are based on the findings in the systematic review and survey and are intended for IBHC researchers. The intention of these recommendations is to encourage researchers to increase the use of variables related to the operational and financial processes of IBHC. First, recommendations for the clinical world are provided that highlight the importance of connecting the clinical world to the operational and financial worlds. Then, in the following section are recommendations for the operational and financial worlds.

Clinical

The following are recommendations for important clinical outcomes and processes for future research. These research recommendations are focused on exploring how the clinical world interacts with the operational and financial worlds.

1. Measure the referral rates to BHCs to examine the population need for BHC services, and determine the amount of BHC coverage programs need to meet the capacity of referrals. Research on this could determine a formula for how many BHCs are needed for various sized patient populations.
2. Track the types of diagnoses of patients who are being referred to BHC services, and map this with clinic type (e.g., family medicine residency) and patient population (e.g., veterans) to determine if there are clinical guidelines or screening protocols that need to be adapted for certain clinic and population types.
3. Measure change over time in screening results (e.g., brief depression and anxiety screenings) and determine how much time or how many sessions are needed with a BHC to influence changes in symptoms and screening results. This can help programs determine best practices for the number of follow up visits appropriate for brief treatment in IBHC.

Operational

The following recommendations offer ways for future researchers to evaluate and contribute to understanding and operationalizing processes in the operational world of IBHC (financial world discussed below):

1. Track the BHC time spent in the room using the EHR, or BHC logs, to address concerns about the actual time needed for BHC encounters to help map successful clinic flow. Determining the approximate time needed for warm handoffs or follow up appointments with the BHC could help with scheduling logistics (i.e., how long to make appointments).
2. Conduct field observation studies of work flow to find out which providers seem to use BHCs more and what is distinct from their workflow than from other providers who may

use it less. This could help programs determine strategies to elicit buy in from more providers, and determine best internal practices for collaboration between medical and behavioral health providers.

3. Study the number of BHC encounters that occur when leadership is present on-site and when not (e.g., CEO, Director of BHC, Medical Director). This could help programs determine how leadership can best use their time on site without disrupting efficiency and productivity (i.e., if administrators typically come on site for morning meetings and it causes a reduction in encounters).
4. Study various models of time and appointment availability of BHCs and what produces the most patient contact in clinic, but also leaves sufficient time for administrative and other clinical care matters (e.g., supervision of interns, phone call follow ups). Identifying the best practices for scheduling models can help programs maximize their BHC productivity and efficiency.
5. Track number of patient contacts when the BHC is in a shared space (e.g., same office) with the PCP versus in a separate hall or office. This would help programs determine the value and importance of how physical space impacts collaboration, and help programs plan for space better before implementation begins.
6. Track which referral methods lead to the most patient care contact (e.g., warm hand offs, referral through EHR, pager) to show which one helps the BHC to see more patients, and maximize productivity.
7. Explore how more frequent collaboration between PCPs and BHCs (i.e. same day visits, shared treatment plans) impact patient health outcomes. Researchers could track how often PCPs and BHCs had hallway consults about patients with diabetes, and see if that

influenced diabetes outcomes. This would help show how an operational variable (collaboration between providers) impacts a clinical outcome, and provide incentive to programs for maximizing collaboration opportunities between providers.

Financial

Perhaps the most perplexing world for researchers and real world implementers is the financial world. This is partially due to the complex financial structure and challenges, which are discussed in the policy implications section below. The following are recommendations for how researchers can contribute to understanding the financial world:

1. Track missed appointment, cancelled, or show rates when BHC is involved in patient care versus when not. This information would be useful to determine if the team-based approach of IBHC leads to better appointment outcomes, and less waste of time (e.g., time and cost offset for no-show appointments).
2. Study how patient volume changes on days when the BHC is present versus not present. This has implications for revenue generated from having a BHC present, by making the medical provider available for more billable appointments while the BHC manages psychosocial concerns of patients and saves the medical provider time.
3. Track patient wait times when BHC is involved in patient care versus when not. If BHCs save medical providers by addressing psychosocial concerns while medical providers can focus on physical concerns, this would increase efficiency of the practice (i.e., by the BHC filling in on times patient would typically be waiting on the medical provider) and provide a time offset for medical providers.

4. Study how much reimbursable time is needed with the patient panel to cover the BHC's salary, considering time needed for administrative tasks. This information is needed to determine the appropriate and affordable number of BHCs to have on staff in clinics.
5. Compare utilization data for patients who saw BHC versus those who did not and study trends with number of BHC visits and utilization rates. This would show if provided behavioral support from the BHC reduces emergency room visits, which are a great cost to patients and the healthcare system.

The above research recommendations would be valuable contributions to the body of literature on IBHC. Additionally, the above research would address gaps in the operational and financial worlds to bring it up to speed with the evidence and support for IBHC success in the clinical world. While it is important to continue to pursue research on clinical, operational, and financial outcomes of IBHC, it is equally important to disseminate and educate real world implementers on feasible and strategic evaluation practices.

Evaluation Recommendations

There is a need for consistency in measuring and reporting clinical, operational, and financial outcomes of IBHC. Below, there are some feasible and realistic ways to measure the Three Worlds of IBHC that can serve as a standard best evaluation practice guideline for starting evaluation efforts within an IBHC program. These recommendations are intended for real world implementers of IBHC interested in measuring program outcomes. The following recommendations are based on findings from the systematic review and the survey of IBHC professionals.

Clinical

Collecting information on the clinical outcomes will remain important during the course of IBHC implementation. Programs should be purposeful about identifying their evaluation metrics before implementing clinical practice. Evaluation should include monitoring of population access to IBHC services. This can be a simple measure of the proportion of patients within the clinic population that have received an initial contact encounter with a behavioral health clinician. This is the most important indicator of success in IBHC implementation because it speaks to how many patients access integrated services, or the "population reach" (Robinson & Reiter, 2007). This aligns with the purpose of IBHC, to increase access to mental and behavioral health treatment to address population health needs. Population reach can be measured by tracking initial appointments in the electronic medical record and running a report of that appointment type at a frequency that best fits the patient population and organizational needs. For example, a program could run a report of how many patients had their first contact with a BHC each quarter. This data could be used to demonstrate population reach (Robinson & Reiter, 2007) to justify the program to leaders and administrators.

A second clinical evaluation recommendation is to track the types and frequencies of diagnoses of patients who are being referred to behavioral health clinicians (BHCs). This can also be tracked and reports can be generated using the electronic medical record. This information is valuable for determining the most prevalent needs of patients being referred for services to BHCs, as well as identifying important protocols and evidence-based guidelines to use in the IBHC program. For example, if a program tracks diagnoses and discovers that a significant proportion of patients being referred to BHCs are being referred for alcohol abuse, the program can use that information to either examine existing protocols on screening and referrals

for alcohol abuse, or create new protocols based on evidence-based guidelines for addressing alcohol abuse in primary care.

A final clinical evaluation recommendation is to use the electronic medical record to run reports on how many patients have been screened for behavioral health concerns, and how often patients are being screened. This is helpful for measuring population level screening, such as how many patients received an annual depression screening. Running screening reports can help identify protocols that need to be in place to systematically screen for population behavioral health concerns (i.e., implementing screening procedures at annual physicals).

Operational

Like the clinical evaluation methods described above, the electronic medical record can also be useful to tracking operational outcomes of IBHC. For example, the types and frequency of communication between primary care providers (PCPs) and BHCs can be tracked using the electronic medical record. Programs can run a report on the frequency of chart sharing or internal emailing between providers to track collaboration efforts. Additionally, using the electronic medical record or other methods, programs should track the referral pathways between PCPs and BHCs to see which pathways lead to the most completed referrals, and if there is variation in referral processes by provider. This task could be done through a simple tracking spreadsheet or as a check box in electronic documentation for BHCs to briefly indicate how the patient was referred to them by the medical provider (e.g., warm handoff, email, voicemail, chart message). Programs can use this information to engage in quality improvement cycles. For example, a practice could run a report showing that referrals to the BHC through email are less successful. Next, the practice could start a two-week Plan-Do-Study-Act (PDSA) cycle to test a change for

improvement, such as all providers trying to increase the frequency of warm handoff referrals (Langley et al., 2009).

PDSA cycles include planning a change (plan; including planning how to collect data), testing the change on a small scale or for a short period of time (do), studying the results of the change (study), and implementing changes as a result of the test (act) (Langley et al., 2009). A second operational recommendation that could be implemented using PDSA cycles is to evaluate which scheduling models work best for BHCs. Scheduling models can vary based on the needs of patients, providers, and the natural flow of the practice. Programs can test whether scheduling blocked warm handoff time and blocked follow up appointment time increases the frequency of patient encounters and efficiency of BHCs. PDSA cycles can be used to test which scheduling models produce the best results, including leaving time for BHCs to complete documentation and attend provider meetings.

A final operational recommendation is to routinely engage with all service lines of the IBHC program, including leaders, administrators, front desk staff, medical assistants, lab staff, medical providers, nursing staff, and behavioral health providers, on the success, barriers, and expectations for IBHC implementation. This could be as simple as having 10 minutes dedicated to IBHC discussion at routine staff meetings to share updates and invite feedback. Having continuous support and engagement across all service lines and organizational levels could address common barriers to implementation identified in this dissertation.

Financial

Perhaps the most commonly reported barriers to implementation and sustainability relate to the financial world. This makes evaluation of the financial world of the utmost importance to discover and share successes and strategies for developing sustainable IBHC programs. These

recommendations are similar to the research recommendations provided above, but these recommendations could also be feasible for an administrator to collect data about their program. One feasible method for tracking a financial outcome is to track and measure patient volume (number of patients seen per day), and compare patient volume on days when a BHC is present to when a BHC is unavailable or absent. This can be tracked using appointment logs and comparing information for different days. For example, on a day when a BHC is absent, the practice might have 50 completed medical appointments. On a day when a BHC is present, the practice might have 65 completed medical appointments because providers could spend less time attending to psychosocial concerns by connecting patients to the BHC. Patient volume is a good indicator of the quantity of reimbursement for clinic days (Gouge, Polaha, Rogers, & Harden, 2016). There is evidence that having a BHC present increases patient volume. In the example above, there could be reimbursement for 15 more patients on BHC days compared to when a BHC is absent. This increased reimbursement increases clinic revenue (Gouge et al., 2016), which could contribute to cost offset for staffing a BHC.

Another important and feasible financial outcome that can be tracked is the paid claims generated by BHCs. This can be tracked through practice billing departments by running a report on claims by provider. This is helpful to see how BHCs can offset their costs. Programs can look at the data and determine how the total revenue generated from paid claims from the BHC compares to the cost of the BHC's salary plus benefits. While continuous and consistent financial evaluation is important to improving the evidence base for IBHC sustainability, there are several policy opportunities that would also significantly help with IBHC success and sustainability.

Policy Implications

There are several relevant policy challenges and opportunities related to the results from this dissertation. While this dissertation was focused on methods of evaluation of clinical, operational, and financial outcomes of IBHC, there are several policy opportunities to improve the success and sustainability of IBHC that were identified through the systematic review and survey results. First, there is a need for change in the financial structure of healthcare and support for sustainability development for IBHC programs. The financial structure of healthcare can be a barrier to providing IBHC services. For example, some states have restrictions on same-day billing for medical and mental health services. This means that providing brief behavioral health consultation during primary care medical appointments would not be reimbursed, and thus is a deterrent to integrating services. This project highlighted how these financial barriers (e.g., determining appropriate billing codes and seeking reimbursement) were a problem that was cited in research and reported by professionals working in IBHC settings. This indicates that IBHC programs are in need of more support in the financial world. Since many regulations are state-dependent, state healthcare offices, such as the Department of Health and Human Services, should offer support in the form of state-specific financial guidelines, rules, and recommendations for primary care practices seeking to integrate behavioral health services. Additionally, to work toward policy changes for billing and reimbursement, task forces should be developed to adjust clinical coverage policies to be more conducive to IBHC (i.e., North Carolina Medicaid Clinical Coverage Policy 8C; North Carolina Division of Medical Assistance, 2015).

There is also a significant policy opportunity related to the IBHC workforce to advance IBHC. Some mental health professions (e.g., marriage and family therapists, professional

counselors) are not eligible Medicare providers. This limits the behavioral health workforce available to work in primary care settings that serve Medicare patients, and there are over 55 million Americans receiving Medicare (Centers for Medicare & Medicaid Services, 2016). Restricting the available workforce continues to inhibit the success and sustainability of IBHC implementation. Many studies included in the systematic review highlighted difficulties in recruiting and retaining a behavioral health workforce for primary care. Many health care systems serve the Medicare population. However, programs who have Medicare patients are reluctant to hire behavioral health providers who cannot be reimbursed for services to Medicare populations. This significantly reduces the available workforce for IBHC, especially in rural areas. To assist in the workforce issue, legislators at the federal level should move to embrace more diverse care afforded by a more diverse workforce, including marriage and family therapists, to better meet the aging population and other special populations who receive Medicare. Research and evaluation on clinical, operational, and financial challenges and outcomes of IBHC are critical to advance quality improvement of healthcare.

Training Implications

There is much work to be done in the clinical, operational, and financial worlds of IBHC research, implementation, and evaluation that can be addressed through training and education, often referred to as the "fourth world" of Peek's (2008) Three World view. This fourth world is critical to changing the culture of viewing healthcare in clinical, operational, and financial silos by educating and training the workforce. Medical Family Therapists (MedFTs) are uniquely positioned to contribute to the advancement of IBHC because they are leaders at the forefront of improving the quality of health care, and they work at all levels of the health care system (i.e., clinical, administration, policy, research). The field of Medical Family Therapy (MedFT)

emerged to meet the needs of patients with complex medical and psychosocial needs, and the needs of providers struggling to attend to the interwoven medical and psychosocial concerns (Ruddy & McDaniel, 2003). MedFT is a "response to several opposing forces: the fragmented system of healthcare, disconnection between mental health and medical providers, separation of the treatment of the mind from the body, and extraction of the patient from the family/community" (Tyndall, Hodgson, Lamson, White, & Knight, 2012, pp. 156-157). MedFTs believe that collaboration between and among healthcare providers, the patient, and their family/support system is critical to delivering whole person healthcare. MedFTs receive specialized training in delivering, leading, collaborating, implementing, and evaluating biopsychosocial-spiritual care within health care systems and are masterful at joining and serving in IBHC systems (Hodgson, Lamson, Mendenhall, & Crane, 2014). For these reasons, MedFTs are uniquely positioned to significantly contribute to and lead evaluation efforts within the research and implementation realms of integrated behavioral health care (IBHC) settings.

To tap into the MedFT workforce, MedFT training programs should include theoretical and practical training on Three World view (Peek, 2008) IBHC evaluation. MedFT training programs should help future MedFT leaders shape their systems knowledge, collaboration skills, and research expertise to work on interdisciplinary teams to evaluate clinical, operational, and financial characteristics of IBHC. This could be done by joining leadership and implementation teams at IBHC clinical sites. As part of their training, MedFTs should develop simulated evaluation plans that require them to use their scientist-practitioner skills to translate research into real world goals and deliverables for their programs and organizations. Adding evaluation components to MedFT program curricula would make future MedFT professionals an even more essential asset to the clinical, operational, and financial worlds of healthcare.

Conclusion

This dissertation is the first meta-evaluation of integrated behavioral health care (IBHC). Through this project, a framework for Three World view (Peek, 2008) evaluation of IBHC has emerged. This project examined the methods and prevalence for measuring clinical, operational, and financial outcomes in IBHC settings. This chapter has provided several implications for future research and policy development, recommendations for Three World view (Peek, 2008) evaluation, and training implications for Medical Family Therapists. Medical Family Therapists, as researchers, policymakers, and professionals working in implementation of IBHC, should contribute to advancing the success and sustainability of IBHC programs by measuring and reporting on their programs' clinical, operational, and financial successes and challenges. Three World view (Peek, 2008) evaluation of IBHC will help identify necessary changes and improvements to increase the quality of care provided to the primary care population.

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APPENDIX A: IRB APPROVAL

LETTER OF IRB APPROVAL

EAST CAROLINA UNIVERSITY
University & Medical Center Institutional Review Board Office
4N-70 Brody Medical Sciences Building· Mail Stop 682
600 Moye Boulevard · Greenville, NC 27834
Office **252-744-2914** · Fax **252-744-2284** · **www.ecu.edu/irb**

Notification of Exempt Certification

From: Social/Behavioral IRB
To: Amelia Muse
CC: Angela Lamson
Date: 11/11/2016
Re: UMCIRB 16-000671
Three World View Meta-Evaluation of Integrated Behavioral Health Care

I am pleased to inform you that your research submission has been certified as exempt on 11/10/2016. This study is eligible for Exempt Certification under category #2.

It is your responsibility to ensure that this research is conducted in the manner reported in your application and/or protocol, as well as being consistent with the ethical principles of the Belmont Report and your profession.

This research study does not require any additional interaction with the UMCIRB unless there are proposed changes to this study. Any change, prior to implementing that change, must be submitted to the UMCIRB for review and approval. The UMCIRB will determine if the change impacts the eligibility of the research for exempt status. If more substantive review is required, you will be notified within five business days.

The UMCIRB office will hold your exemption application for a period of five years from the date of this letter. If you wish to continue this protocol beyond this period, you will need to submit an Exemption Certification request at least 30 days before the end of the five year period.

The Chairperson (or designee) does not have a potential for conflict of interest on this study.

INFORMED CONSENT STATEMENT

You are being invited to participate in a **research** study titled "*A Three World View Meta-Evaluation of Integrated Behavioral Healthcare*" being conducted by Amelia Muse, a doctoral candidate at East Carolina University in the Department of Human Development and Family Science. The goal is to survey individuals who work in integrated behavioral healthcare settings. The survey will take approximately 10 minutes to complete. It is hoped that this information will assist us to better understand clinical, operational, and financial evaluation practices in integrated behavioral healthcare settings. The survey is anonymous, so please do not write your name. Your participation in the research is **voluntary**. You may choose not to answer any or all questions, and you may stop at any time. There is **no penalty for not taking part** in this research study. Please call Amelia Muse at 919-452-4014 for any research related questions or the Office of Research Integrity & Compliance (ORIC) at 252-744-2914 for questions about your rights as a research participant.

APPENDIX B: QUESTIONNAIRE

1. At what type of primary care site do you work? (Check all that apply)
    a. Federally Qualified Healthcare Center (FQHC)
    b. Community Healthcare Center
    c. Private primary care practice
    d. Public Health Department
    e. Military base
    f. Veteran's Administration primary care
    g. Other (please specify) _____
2. What is your position?
    a. Medical Provider (NP, PA, MD, DO, etc.; primary role is providing clinical care to patients)
        i. Physician (DO)
        ii. Nurse Practitioner (NP)
        iii. Physician (MD)
        iv. Physician Assistant (PA)
        v. Other (Please specify) _____
    b. Behavioral Health Provider (MFT, LCSW, LPC, Psychologist, etc.; primary role is providing clinical care to patients)
        i. Marriage and Family Therapist (MFT)
        ii. Clinical Social Worker (LCSW)
        iii. Professional Counselor (LPC)
        iv. Psychologist
        v. Other (Please specify)_____
    c. Behavioral Health Director
    d. Medical Director
    e. Practice Manager
    f. Administrator (e.g., CEO, CFO)
        i. CEO
        ii. CFO
        iii. COO
        iv. Other (Please specify) _____
    g. Other (please specify): _____
3. Are you clinically active? (i.e., do you provide clinical care to patients)
    a. Yes
        i. If yes, how many patients do you see per day?
        ii. _____
    b. No
4. What is the name of your site or organization? (*Note*- This information is for the purposes of counting respondents from the same sites only, and will not be reported in any publications or presentations from this study).
5. How many unique locations are a part of your organization?
    a. _____

6. How many medical providers work at your location?
    a. _____
7. What is the zip code for your primary site? (*Note*- This information is for the purposes of determining rural/urban classification only, and will not be reported in any publications or presentations from this study).
    a. _____
8. Who accredits your organization (e.g., NCQA (National Committee for Quality Assurance)?
    a. _____
9. What is the approximate proportion of patients with the following insurance types at your site(s)?
    a. Medicaid
        i. Less than 10%
        ii. 10-25%
        iii. 25-50%
        iv. 50-75%
        v. 75-90%
        vi. More than 90%
    b. Medicare
        i. Less than 10%
        ii. 10-25%
        iii. 25-50%
        iv. 50-75%
        v. 75-90%
        vi. More than 90%
    c. Private/commercial insurance
        i. Less than 10%
        ii. 10-25%
        iii. 25-50%
        iv. 50-75%
        v. 75-90%
        vi. More than 90%
    d. Uninsured
        i. Less than 10%
        ii. 10-25%
        iii. 25-50%
        iv. 50-75%
        v. 75-90%
        vi. More than 90%
    e. Other (please specify) _____

10. What type of behavioral health provider does your site have on location? (Check all that apply)
    a. Psychologist
        i. How many work at your site?___
        ii. How many hours do they cover per week?
            1. Less than 10
            2. 10-20
            3. 20-30
            4. 40 hours
            5. 40+ hours
    b. Clinical Social Worker
        i. How many work at your site?___
        ii. How many hours do they cover per week?
            1. Less than 10
            2. 10-20
            3. 20-30
            4. 40 hours
            5. 40+ hours
    c. Marriage and Family Therapist/Medical Family Therapist
        i. How many work at your site?___
        ii. How many hours do they cover per week?
            1. Less than 10
            2. 10-20
            3. 20-30
            4. 40 hours
            5. 40+ hours
    d. Professional Counselor
        i. How many work at your site?___
        ii. How many hours do they cover per week?
            1. Less than 10
            2. 10-20
            3. 20-30
            4. 40 hours
            5. 40+ hours
    e. Substance Abuse Counselor
        i. How many work at your site?___
        ii. How many hours do they cover per week?
            1. Less than 10
            2. 10-20
            3. 20-30
            4. 40 hours
            5. 40+ hours

f. Other:_____
    i. How many work at your site?___
    ii. How many hours do they cover per week?
        1. Less than 10
        2. 10-20
        3. 20-30
        4. 40 hours
        5. 40+ hours

11. How are the behavioral health providers funded?
    a. Grant funding
    b. The behavioral health providers bill for their services
    c. Unsure
    d. Other: _____
12. Does your site or organization evaluate the behavioral health integration program? (i.e., Track outcomes, determining progress or goals, compiles reports of success of program)
    a. Yes
        i. If yes, who is responsible for the evaluation?
            1. Behavioral Health/Integrated Care director
            2. Medical director
            3. CEO
            4. Practice Manager
            5. Integrated Care implementation team
            6. Other: _____
    b. No
        i. ("No" responses will skip to question 17)
13. Does your site track **clinical** characteristics of the behavioral health integration program? (*Note*- "Clinical characteristics" refers to the type and quality of care that patients are receiving, at the patient level of the system.)
    a. Yes
    b. No
    c. I don't know
14. If you indicated above that you are evaluating clinical characteristics of your program, how are you collecting this information?
    a. _____
15. Does your site track **operational** characteristics of the behavioral health integration program? (*Note*- "Operational characteristics" refers how care is provided and if the care delivery is well-executed, at the practice and administrative level of the system.)
    a. Yes
    b. No
    c. I don't know
16. If you indicated above that you are evaluating operational characteristics of your program, how are you collecting this information?
    a. _____

17. Does your site track **operational** characteristics of the behavioral health integration program? (*Note*- "Financial outcomes" refers the time, efficiency, and costs of providing integrated behavioral health services, at the practice and administrative level of the system.)
    a. Yes
    b. No
    c. I don't know
18. If you indicated above that you are evaluating financial characteristics of your program, how are you collecting this information?
    a. _____
19. If your site does not currently conduct any evaluation of the behavioral health integration efforts, do you see a need for evaluation at your site?
    a. Yes
        i. What do you think are some of the barriers or reason why your site is not conducting routine evaluation for the behavioral health program?
        ii. _____
    b. No
20. Does your site complete any site assessments related to behavioral health integration?
    a. MeHAF Site Self Assessment
    b. Organizational Assessment Toolkit for Primary and Behavioral Healthcare Integration (OATI)
    c. The Integration Practice Assessment Tool (IPAT)
    d. The Behavioral Health Integration Checklist
    e. The Integrated Behavioral Health Project Tool
    f. The Integrated Treatment Tool
    g. Behavioral Health Integration in Medical Care (BHIMC): DDCHCS 3.0
    h. Other assessment tool:_____
    i. If possible, please attach any assessment tools that you use that are not mentioned above. (*Note*- These will not be shared in any published materials from this study, but the characteristics and methods will be analyzed.)
21. How involved are you in the efforts of your organization or practice to integrate behavioral health services in your practice?
    a. Extremely involved (*Example*: Attend regular meetings to discuss the integration project and help carry out plans)
    b. Very involved
    c. Somewhat involved (*Example*: I know what is going on but I am not active in the integration work)
    d. Slightly involved
    e. Not at all uninvolved

22. How often does the behavioral health provider receive "warm hand-offs" from the medical providers? (*Example*: A medical provider sees a patient for a routine physical, the patient indicates that they have depression symptoms, and the medical provider gets the behavioral health provide to provide a consult to the patient before the patient leaves the clinic.)
    a. Never
    b. Rarely
    c. Sometimes
    d. Often
    e. Always
23. How often do medical providers discuss patients with the behavioral health provider before, during, or after the patient's medical appointments? (*Example*: A medical provider sees that they have a patient with a history of suicide attempts coming to see them today, and the medical provider preps for the appointment by consulting with the behavioral health provider on resources and safety assessment.)
    a. Never
    b. Rarely
    c. Sometimes
    d. Often
    e. Always
24. How often are patients referred to the behavioral health provider for psychosocial stress related to managing a medical condition? (*Example*: A patient has diabetes and the medical provider or care team decides to refer the patient for a behavioral health consult because the patient reports significant stress from coping with diabetes.)
    a. Never
    b. Rarely
    c. Sometimes
    d. Often
    e. Always
25. How often are patients screened for behavioral health conditions, such as depression or anxiety, as part of their medical appointments?
    a. Never
    b. Rarely
    c. Sometimes, if the patient has reported symptoms.
    d. Often, patients receive a screening at their annual physical appointments.
    e. Always, patients receive a brief screening as part of every routine visit.

26. Are medical providers and behavioral health providers able to see each other's encounter notes in the electronic medical record?
    a. Yes
        i. How often do behavioral health providers review the medical providers' encounter notes?
            1. Never
            2. Rarely
            3. Sometimes
            4. Often
            5. Always
        ii. How often do medical providers review the behavioral health providers' encounter notes?
            1. Never
            2. Rarely
            3. Sometimes
            4. Often
            5. Always
    b. No

Thank you for your participation in this survey!

Please follow this link to enter your contact information for a gift card drawing.

(The following questions will be in a separate survey and link in order to keep the responses from the main survey de-identified).

1. Would you like to enter the drawing to be randomly selected for one of ten $25 gift cards?
    a. Yes
        i. Please enter your email address and mailing address:
            1. Email (to be used for contact about gift card selection only, unless otherwise designated by Question 2 below)

               _____
            2. Mailing address
               (*Note*- Per the IRB, only respondents who have reported a full mailing address (no P.O. boxes) may be considered for the incentive.)

               _____
    b. No
2. Would you be interested in resources for how to conduct evaluation of your behavioral health integration program?
    a. Yes, please email me:
        i. Evaluation resources- Email: _____
        ii. Outcomes of this study- Email: _____
        iii. Both- Email: _____
        iv. Is it okay to email you with follow up questions related to this study?
            1. Yes
            2. No
    b. No thanks!

APPENDIX C: RECRUITMENT SCRIPT

You are being invited to participate in a research study titled "A Three World View Meta-Evaluation of Integrated Behavioral Healthcare" being conducted by Amelia Muse, a doctoral candidate at East Carolina University in the Department of Human Development and Family Science. The goal is to survey individuals who work in integrated behavioral healthcare settings about evaluation of their integrated behavioral healthcare program. The survey will take approximately 10 minutes to complete. It is hoped that this information will assist us to better understand clinical, operational, and financial evaluation practices in integrated behavioral healthcare settings.

You qualify for this study if you:

a) Work as a medical provider (e.g., physician, nurse practitioner, physician assistant), behavioral health provider (e.g., therapist, counselor, psychologist), OR administrator (e.g., practice manager, CEO, billing and coding manager)

b) Work in a primary care setting in which a behavioral health provider (e.g., psychologist, clinical social worker, family therapist, counselor) provides on-site behavioral health services to patients.

The survey will take approximately 10 minutes to complete.

The first 50 respondents will be eligible to receive a free RedBox code. All respondents will be eligible to enter a drawing to receive one of ten $25 giftcards available for participants.

Please call me at 919-452-4014 for any research related questions, or the Office of Research Integrity & Compliance (ORIC) at 252-744-2914 for questions about your rights as a research participant.

Thank you!

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