EFFECTIVE PRIMARY CARE FOR INDIVIDUALS WITH SERIOUS MENTAL ILLNESS: AN INTERVENTION AND SYSTEMATIC REVIEW

by

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ABSTRACT

Individuals diagnosed with serious mental illness have higher rates of comorbid physical illness than people without serious mental illness. This dissertation, provided in the Multiple Article Path format, explores how comorbidities in this population have historically been addressed and examines effectiveness of interventions to address comorbidity in primary care. This research also describes the development and implementation of a specific primary care-based program to address comorbidities and patient perspectives on that program. Theoretical frameworks of this dissertation include social constructionism, labeling theory and critical theory. The first article in this project is a qualitative study exploring patient perspectives on care. The second article describes the primary care-based implementation of a care program. The third article is a systematic review of primary care-based behavioral and educational interventions to address comorbidity.

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CHAPTER 1

INTRODUCTION

People with serious mental illness have significantly higher rates of comorbid chronic medical conditions than people without mental illness (Bobes, Arango, Garcia-Garcia, & Rejas, 2010; Bonnett, 2005). The chronic conditions that accompany mental illness are also largely preventable, making this health disparity even more troubling and unnecessary. This dissertation examines the health and health care of people with serious mental illness. Although the body of the dissertation is divided into three separate articles, the overall goals of the research are to identify effective health-focused interventions for people with serious mental illness to determine what elements of interventions are most effective and to explore how changes in health care delivery might improve health outcomes for this population.

For the purposes of this dissertation, individuals described as having serious mental illness are those diagnosed with one or more of the following conditions: bipolar disorder, schizophrenia, major depressive disorder (recurrent), schizoaffective disorder, psychotic disorders, panic disorder, and post traumatic stress disorder. Most of the people discussed in this dissertation and in the literature have schizophrenia, bipolar disorder or major depressive disorder.

Comorbidities that tend to occur among people with serious mental illness are outlined later in this chapter. In general, a comorbidity is any illness that occurs at the same time as the mental illness, with comorbidities in this dissertation typically referring to chronic physical health conditions developed in adulthood.

This chapter provides a background about why I am interested in exploring this topic and how I came to be involved with the research. Following the background, I present a brief literature review to familiarize the reader with information about comorbidity among people with serious mental illness and previous research about health care and legislation affecting health care for this population. Gaps in the literature are also identified in this chapter, which highlight the need for additional research in certain areas. The final section of this chapter describes the details of my research, including research questions, methods, theory and format.

Background

In my role as a clinical social worker serving adults with mental illness, I frequently observed that my clients had comorbid medical conditions that were not well managed. Although most of the people I worked with were low-income and had primary care providers through Medicaid or Medicare, the medical conditions remained poorly managed. As a contract employee at Placer County Community Clinic in 2010-2011, I had the opportunity to manage a project designed to improve health outcomes for clinic patients who were diagnosed with serious mental illness. This project, called the CalMEND Pilot Collaborative to Integrate Primary Care and Mental Health Services (CPCI), aimed to improve the health of participating individuals through more effective collaboration between mental health and primary care providers. I had the freedom to develop, implement and monitor program activities during this project and was responsible for reporting monthly outcomes to the funding source. I discuss this project further in Chapters 2 and 3.

In conducting a literature review related to improving health outcomes for people with serious mental illness, I observed that the literature describes numerous pilot projects targeting this population, but I could not ascertain whether the interventions were effective or replicable. Many interventions described in the literature are complex, which makes it difficult to determine which component engendered the outcomes observed. The CPCI program I worked on, for example, included administrative changes, clinical improvements, health education and physical activity. While it could be determined that these combined elements caused participant health outcomes to improve, the specific modality of change remained unknown. Based on interviews I conducted with participants (discussed in Chapter 2), I determined that health-related educational interventions were one of the most important elements of the CPCI program. Almost all of the literature describing health interventions for people with serious mental illness describes some kind of educational component, which will be discussed further in Chapter 4.

Review of the Literature

People with serious mental illness are more likely than people without mental illness to die of secondary chronic health conditions (Dembling, Chen & Vachon, 1999). That individuals with serious mental illness are at greater risk for developing chronic physical conditions is clearly delineated in the literature (Bobes et al., 2010; Bonnett, 2005; Brunero & Lamont, 2009; Cardenas et al., 2008; De Hert et al., 2009; Dunbar, 2008; Jacob, 2008; Janszky, 2007; McCabe, 2008; Muir-Cochrane, 2006; Padmavati, 2010). Literature comparing overall general physical health conditions of people with serious mental illness with that of a control group has identified higher rates of comorbidity in the seriously mentally ill population (Bobes, 2007; Gili et al., 2010). The mortality rate of people with serious mental illness is also rapidly increasing with 2009 mortality rates two to three times higher than those in the 1970s, according to one systematic review on mortality in people with schizophrenia (Saha, Chant & McGrath, 2007). In addition to the problem of people with serious mental illness having disproportionate rates of physical illness, medical comorbidity may be responsible for poor response to mental health treatment (Domschke, Arolt & Baune., 2009).

Types of Comorbid Conditions

Metabolic syndrome, a precursor to diabetes, has been found to occur among people with major depressive disorder and bipolar disorder at twice the rate of the national average (Cardenas et al., 2008; Dunbar et al., 2008). Specific lifestyle-related illnesses, including sexually transmitted diseases and substance use disorders, are more prevalent among people with serious mental illness than among those without mental illness (Kilbourne et al., 2004). Cigarette smoking and sedentary lifestyle are among the risk factors for developing coronary heart disease and are commonly associated with schizophrenic disorders (Bobes et al., 2010; Cohn, 2004). In addition, people with schizophrenia are at increased risk for obesity, asthma, angina, skin infections and gastrointestinal disorders (Muir-Cochrane et al., 2008), principally due to lifestyle, as described below.

Possible Causes and Explanations for Comorbidity

Very few studies in the literature suggest a causal relationship between mental illness itself and physical illness, with the primary causes for comorbidity thought to be lifestyle and treatment factors. Pack (2008) suggested that schizophrenia may cause or worsen Type 2 diabetes by impairing cognition, which is necessary for self-management of the physical condition. Some researchers speculate that individuals with schizophrenia may have a predisposition to insulin resistance (Pack, 2008; Padmavati, 2010), but conclude that this factor alone would not likely cause a secondary illness. Lifestyle-related factors are presented in the literature as the primary cause of increased physical illness in individuals with serious mental illness (Bobes et al., 2010; Bonnett et al., 2005; Bots, Tijhuis, Giampaoli, Kromhout, & Nissinen, 2008; Brunero & Lamont, 2009; Cohn et al., 2004; Engum, 2007; Harrington et al., 2010; Ishihara et al., 2008). Although factors including risk-taking behaviors, substance abuse and standard of living contribute to this problem, the literature highlights the role of smoking, diet and sedentary lifestyle.

Another significant contributing factor to the development of comorbid physical illness in this population is the side effects of psychotropic medications. Among medications prescribed to people with serious mental illness are antipsychotic medications, which include “atypical” antipsychotics (AAPs). These medications are favored over the “typical” first generation of antipsychotics because their side effects are thought to be less serious and permanent, which can improve adherence (Melnik, Soares, Puga & Atallah, 2010). Side effects caused by AAPs include: weight gain, hypertension, metabolic syndrome, lipid dysregulation, sedation and seizures (Muir-Cochrane et al., 2008).

Health Care for People with Serious Mental Illness

Screening and treatment for physical illnesses among individuals with serious mental illness is described in the literature as being inconsistent and inadequate (Brunero & Lamont, 2009; Roberts, Roalfe, Wilson & Lester, 2007). Most programs providing primary care services do not focus on mental health and vice versa. This lack of dual mental health and primary care focus results in inadequate attention to comorbidities within the health care setting, leading to poor illness management. Many medical providers who serve low-income individuals cannot provide specialty mental health services or focus on this population because of billing restrictions (American Association of Community Psychiatrists, 2002).

For individuals who are seriously mentally ill but not yet diagnosed, the primary care clinic is the often the first point of contact with health providers. Currently, some states' (including California, the site of the program described in this research) Medicaid billing requirements allow providers to only treat one condition during a single visit (American Association of Community Psychiatrists, 2002), which may put a patient's mental health needs behind any immediate physical concerns. The literature also supports the idea that primary care providers are not sufficiently trained in recognizing or treating mental health conditions (McAllister, 2005; Zolnierek, 2008), even if billing restrictions are not a barrier. Additionally, managed care settings may place restrictions on how many primary care visits can be billed as mental health-related in a given year (McAllister, 2005).

Without an historic national mandate for the provision of co-located or integrated services for physical and mental health, local and state programs have been left to choose to opt in or out of various payment programs. Primary care clinics throughout California that provide eligible primary care services can receive federal funding through Federally Qualified Health Centers (FQHCs). FQHCs are intended to provide a "safety net" of primary care services in underserved rural and urban areas (www.hrsa.gov). In addition to standard primary care services, FQHCs may choose to employ specialty providers, such as psychiatrists, as long as the specialists are providing "required primary health services," as determined by the federal government (U.S. Food and Drug Administration [FDA], 2009). To receive approval (which is mandatory) from the Bureau of Primary Health Care, clinics must submit justification for why specialty services are needed; data to support the need for specialty providers; evidence that "enabling services," such as translators and transportation, are available; and a proposed plan for how the clinic intends to implement new services (Boyle, 2009). If the services are approved, clinics must implement them without any additional funds, and services are limited to specific locations under federal guidelines.

Perhaps as a result of challenges in adding specialty services to primary care clinics, patients experience significant barriers to accessing specialty services both within and outside of their clinic. A 2010 study examined these obstacles and found a lack of specialty providers and diagnostic tools at clinics, problems with communication between primary care providers and specialists, and long wait times for patients to obtain specialty care (California Health Care Foundation, 2010). This study found that primary care providers from one clinic in Los Angeles reported no standardized guidelines for referrals and an inability to participate in consultation with specialists to determine if referrals are appropriate. Further, lack of policies for sharing information can lead to privacy concerns about communicating with outside providers and impede the referral process (Druss, 2007).

Health Care Legislation

In a 2002 effort to address the disjointed system of mental health and primary care service delivery, President George W. Bush created an executive order that focused in part on access to primary care for individuals with mental illness (Bush, 2002). Goals of this effort included a focus on the relationship between mental health and overall health, routine screening for mental health disorders, and technology used to facilitate communication between consumers and providers. Barriers to adequate care for individuals with serious mental illness are identified in the report and include stigma, fragmented services, cost, workforce shortages, unavailable services and lack of information about where/how to receive care. This Commission's report represents a federal level effort to address the problem of inadequate access to care, which, along with federal funding and program development support, can begin to improve the existing service delivery system for consumers with mental illness.

The 2010 Patient Protection and Affordable Care Act is federal legislation that expands health care coverage for many Americans and is being implemented in phases through 2014 (Patient Protection and Affordable Care Act, 2010). This program provides increased health coverage for various individuals, including those with pre-existing conditions and those who want to remain on their parents' insurance until age 26. Income limits for Medicaid are increased by this program, which allow more low- and middle-income Americans to receive benefits. Perhaps the most important change for individuals with serious mental illness, many of whom already qualify for and receive Medicaid, is that primary care providers will be paid more for services rendered to Medicaid-covered patients. Additionally, physicians will begin to be paid based on the quality of their services, instead of the quantity of patients served. These two components of the legislation alone may dramatically improve the medical care received by people with serious mental illness, since physicians would be incentivized to provide appropriate care.

Models to Improve Care

Considering the rate of early mortality for people with serious mental illness, it is not difficult to defend a change in the health care delivery system for this population. Illnesses related to increased mortality are the result of a combination of lifestyle and treatment factors, along with inadequate access to primary care. Improvements in the medical care of this population are urgently needed and the expansion of public health care means that a greater number of individuals with serious mental illness will be eligible to receive medical care in the near future. The National Institute of Mental Health (2001) estimates that approximately 6% of the population (over 2.2 million Californians) is diagnosed with serious mental illness. Health care delivery systems for this population must adequately address the lifestyle factors listed previously to decrease early mortality in this growing sector of the population.

Numerous models have been created to address mental health and medical health simultaneously in the primary care or mental health setting. Based on the 4-Quadrant model (National Association of State Mental Health Program Directors [NASMHPD], 2005) of identifying patients along a continuum of high mental health and medical needs to low mental health and medical needs, previous efforts to improve care have included co-location of services (mental health care within medical settings), reverse co-location (medical care within mental health settings), integration of behavioral health and primary care, and disease management programs (http://www.milbank.org). While these efforts have been an improvement over traditionally siloed mental health and primary care programs, the quadrant model divides patients into levels of severity that may not be fixed and may be better addressed with more flexible boundaries.

The Chronic Care Model (http://www.improvingchroniccare.org) was created by the McColl Institute for Health Care Innovation and provides a framework for improving health care for patients with chronic illnesses. The CPCI program was based on this model, which aims to improve health care delivery programs through coordination of care; a culture of quality care promotion; evidence-based practices; effective data management and exchange of information; self-management support; and collaboration with community programs. Figure 1.1 provides a visual representation of the program elements.

The patient-centered medical home (PCMH) model for primary care service delivery also promotes a team-based approach to providing comprehensive health care to patients. Some health care organizations adopt this approach as a way to improve patient care and more effectively collaborate with specialty care providers. This type of service delivery is especially effective for people with serious mental illness because the model stresses accountability for patient outcomes. When a person with serious mental illness is served by multiple care providers who do not coordinate care, a single accountable provider is often lacking and health outcomes are worse. In an ideal medical home program, the patient would be linked with primary care, psychiatric care and social work or case management to ensure that he/she can adhere to treatment recommendations. The main idea behind the PCMH model is that episodic care is replaced by a long-term healing relationship.

While the PCMH model is aimed to improve health outcomes for people with serious mental illness in the primary care setting, some mental health agencies have attempted to address physical health needs of their clients within the mental health setting. Alameda County, California's Bonita House, Inc., a small mental health agency, paired with Lifelong Medical Care, a medical service provider, to provide medical care for this population (Goldstein & Brown, 2011). Recognizing the potential problem of a primary care clinic being perceived as unwelcoming by mental health clients, this partnered program included mental health, substance abuse, primary care and vocational services specialists serving clients with mental illness. Calling the model the Person Centered Behavioral Health Care Home, the model includes field-based services, aggressive follow-up, multidisciplinary teamwork and flexibility of services provided within a given appointment.

Gaps in the Literature

Although interventions to improve health have been described in the studies discussed herein, a recent systematic review of health professional education-based interventions (Hardy, White, Deane & Gray, 2011) did not find studies which met the authors' a priori inclusion criteria. The review aimed to examine evidence for the efficacy of educational interventions for health professionals to improve health outcomes for people with serious mental illness. Although 147 studies were identified as describing interventions, all were ultimately excluded from the review because the authors could not identify any randomized controlled trials or service evaluations. The authors state that patient-specific outcomes have been identified in the literature, but provider knowledge, attitudes and beliefs were not found to be evidenced in the literature reviewed. Glover (1995) also found that intervention protocols for this population are not detailed enough in the literature to determine overall efficacy or reproducibility of the interventions.

Tosh, Clifton, Mala and Bachner (2010) conducted a review of physical health monitoring for people with serious mental illness and found that no studies met their inclusion criteria. The reviewers looked at all randomized or quasi-randomized trials comparing physical health monitoring by various individuals with treatment as usual for people with serious mental illness. Three studies initially met selection criteria but were ultimately excluded because they were not randomized controlled trials. The authors concluded that there is no evidence from randomized trials that physical health monitoring is useful in preventing worsening health outcomes and maintaining quality of life. This result, the authors note, does not mean that health monitoring does not have an effect on these outcomes. The absence of evidence from randomized trials may indicate that few such trials have been conducted or that the studies in this area include components other than health monitoring, so the effect of monitoring alone could not be determined.

One lifestyle-related activity that is clearly identified in literature as being the cause of many chronic conditions is cigarette smoking. Considering the high rate of cigarette smoking among people with serious mental illness, the literature might be expected to include descriptions of smoking cessation programs aimed at this vulnerable population. However, smoking cessation programs focusing specifically on individuals with serious mental illness are largely absent from the literature and traditional substance abuse programs do not generally address nicotine dependence (Bobes et al., 2010). Pack (2008) suggests that nicotine can temporarily mitigate both positive and negative symptoms in individuals with schizophrenia, creating more symptoms of withdrawal during attempts at cessation. Bonnett et al. (2005) also found that individuals with serious mental illness who were educated about the risks of health problems caused by smoking did not decrease cigarette consumption. More comprehensive health care tobacco cessation interventions, based on input from tobacco users with serious mental illness, are needed to decrease cardiovascular risk.

Format of the Dissertation

This dissertation describes the implementation of a pilot program to improve health outcomes for people with serious mental illness, investigates the impact from participant perspectives and examines how other researchers have described similar interventions in the literature. I present this dissertation in the Multiple Article Path (MAP) format. I have developed three separate papers, which are presented as Chapters

2, 3 and 4 in this dissertation. The papers are linked thematically through their emphasis on interventions in the health care setting to improve health outcomes for people with serious mental illness. The purpose of these articles is to explore how the problem of comorbidity in this population has been historically addressed and to examine the effectiveness of interventions in the literature, as well as of a specific intervention I implemented. The ultimate goal of this project is to improve health care services for people with serious mental illness and to decrease medical comorbidity in this population. Chapter 2 and Chapter 3 of this dissertation describe the goals and outcomes of that program, the process of implementation and the benefits of the program from the participant perspective. In Chapter 4, I examine risk factors for metabolic syndrome because this is the most common comorbidity in this population. Chapter 5 summarizes the findings from the studies in the dissertation and suggests implications for social work policy, practice and education.

Theory

Each paper within this dissertation describes the theoretical framework that guides the research process. The three papers share elements of social constructionism, labeling theory and critical theory. Specifically, critical theory provides a framework for understanding why people with serious mental illness may experience disproportionate rates of physical illness. Social constructionism, a broad theoretical concept that recognizes that reality is not fixed and is experienced differently by different people, can help explain why health care providers and patients might behave in ways that result in poor health outcomes for patients (Conrad & Barker, 2010).

Although it can be argued that these theoretical foundations are contradictory—subjective reality versus fixed reality—the articles included here focus on these concepts to explore how individuals with shared experiences also have individual experiences that contribute to the larger problem of poor health outcomes. Labeling theory, which originated in the 1960s (Scheff, 1966) and was later modified (Link, Struening, Cullen, Shrout & Dohrenwend, 1989), is also applicable in this research, as it refers to the idea that individuals who have been labeled negatively (such as those with serious mental illness) may behave according to their label or negative stereotype.

Social constructionism is a useful framework when discussing any kind of illness because illnesses have historically been defined by one group of people who are trying to describe symptoms experienced by other people. Mental illness is one of the few conditions that is exclusively diagnosed through patient report or behavior, which makes it more subject to changing cultural norms and definitions over time. Because the illnesses that are most likely to co-occur with mental illness (diabetes, obesity, cardiovascular disease) are largely preventable, these illnesses may also take on a different meaning for different people. Conrad and Barker (2010) delineate numerous ways in which illness is culturally defined and is distinct from disease, which is the biological explanation for the symptoms. Since serious mental illness and secondary illnesses like obesity can be visible and disturbing, the lived experience of people with these illnesses can vary widely and challenge the idea of the fixed reality of a state of illness. The stigmatization of these illnesses, however, may be a viable explanation for the consistently poor health outcomes among people with serious mental illness. The modified labeling theory presented by Link and colleagues (1989) helps explain how stigma can decrease perceived self efficacy (Markowitz, Angell & Greenberg, 2011).

When applied to people with serious mental illness, these theories are not meant to imply that mental illness develops as a result of a label or stigma, but that this stigma can affect the course of one's illness and the outcomes of the illness. This dissertation will explore interventions that include self-management strategies for people with serious mental illness. Labeling theories are helpful when examining the types of interventions that have historically targeted this population and when interpreting the effects of the interventions because patients' perceived self efficacy is paramount to successful health outcomes. Modified labeling theory is especially salient because it takes into consideration the agency of the stigmatized person, which is a key tenet of interventions designed to empower participants to make necessary health changes.

Article Descriptions

All of the articles in this dissertation will be submitted to peer-reviewed journals. In June 2012, I submitted one paper (Chapter 2) for publication in *Social Work in Health Care* and this paper was provisionally accepted for publication in September, 2012. Chapter 2 is a qualitative, exploratory study that examined the primary health care experiences of individuals with serious mental illness in a specific community clinic in Northern California. The sample of 11 participants was selected from among approximately 100 patients who participated in a specialized care program that aimed to improve the physical health of people with serious mental illness through coordination of care between medical and psychiatric providers. This article addresses the following questions:

1. What are the medical service needs of people with serious mental illness in a primary care setting, according to the service recipients?

2. What are the medical care barriers for people with serious mental illness in a primary care setting, according to the potential care recipients?

3. How do people with serious mental illness experience "augmented services" (the CPCI program) offered through the clinic?

The second article provides a description of the process of implementing the specialized care program that participants in Chapter 2 experienced at the Northern California clinic. This process paper describes the program goals, setting, implementation and recommendations for how similar programs might be developed in the future. Specifically, this program sought to answer the question, "Can health outcomes of people with serious mental illness be improved through effective partnerships between mental health and primary care providers?" My paper describes one such partnership in the setting where I worked and provides health outcomes data collected from my site to answer this research question.

These data consist of physical health measurements, such as blood pressure and body mass index, and organizational information, such as how the multidisciplinary team worked together. Health data were collected at the time of patient appointments (which occurred weekly to monthly) and at the conclusion of the program. The author maintained a spreadsheet with this information, along with patient demographics, treatment milestones and other tracking information. Chapter 3 will be submitted for publication in *Health in Social Work,* which has published similar articles about pilot programs for people with mental illness. This article addressed the following research question:

> Can health outcomes of people with serious mental illness be improved through effective partnerships between mental health and primary care providers?

The final paper (Chapter 4) is a systematic review of the literature related to health-focused interventions for people with serious mental illness. One of the most important goals of this dissertation is to improve health care services for people with mental illness. Descriptions of health interventions for this population vary widely in the literature and studies are difficult to replicate as a result. This review aims to answer the question, “How effective are educational health interventions for people with serious mental illness in decreasing risk factors for metabolic syndrome?” Specifically, this is a systematic review of educational health interventions targeting people with serious mental illness where metabolic illness risk factors are the outcomes measured. I also provide an analysis of the content of studies describing educational interventions to identify how future studies can adequately describe interventions to make them replicable and able to be systematically reviewed. This paper will be submitted for publication to *BMC Psychiatry*, a journal that publishes health-focused reviews, updates and protocols. This article addresses the following research question:

> How effective are educational health interventions targeting people with serious mental illness in decreasing risk factors for metabolic illness in a primary care setting?

The first study described herein (Article 1) was conducted, in part, to determine how successful the CPCI program was at Placer County Community Clinic. Results from that study indicate that several program components created by the Placer County CPCI team benefitted patients with serious mental illness. As there were no specific treatment or implementation requirements for the CPCI program, this author determined that a description of this program’s implementation will enhance the literature and can promote replication of this program in other settings. Chapter 3 serves this purpose; however, this intervention will not work in all settings. Therefore, Chapter 4 examines how interventions have been described in the literature and presents results from previous reviews and studies examining the effectiveness of education-focused interventions in mental health and primary care settings. This review's contribution to the literature may assist program and treatment planners in clinical settings with designing effective interventions to meet the health care needs of people with serious mental illness.

Implications of the Dissertation

The expansion of health care coverage and the rise in rates of mental illness will require health care professionals to enhance their knowledge of interventions designed to improve the physical health of people with serious mental illness. Research identifying successful interventions is essential for health care providers who are implementing federal policy changes and for state and local governments who are designing new policies to address health care needs of this population. The studies in this dissertation describe effective elements of select interventions and provide information from the patient perspective about what interventions are beneficial. Information from the patient perspective is invaluable for clinical professionals designing treatment plans because adherence to treatment improves when interventions are designed specifically to meet patients' needs.

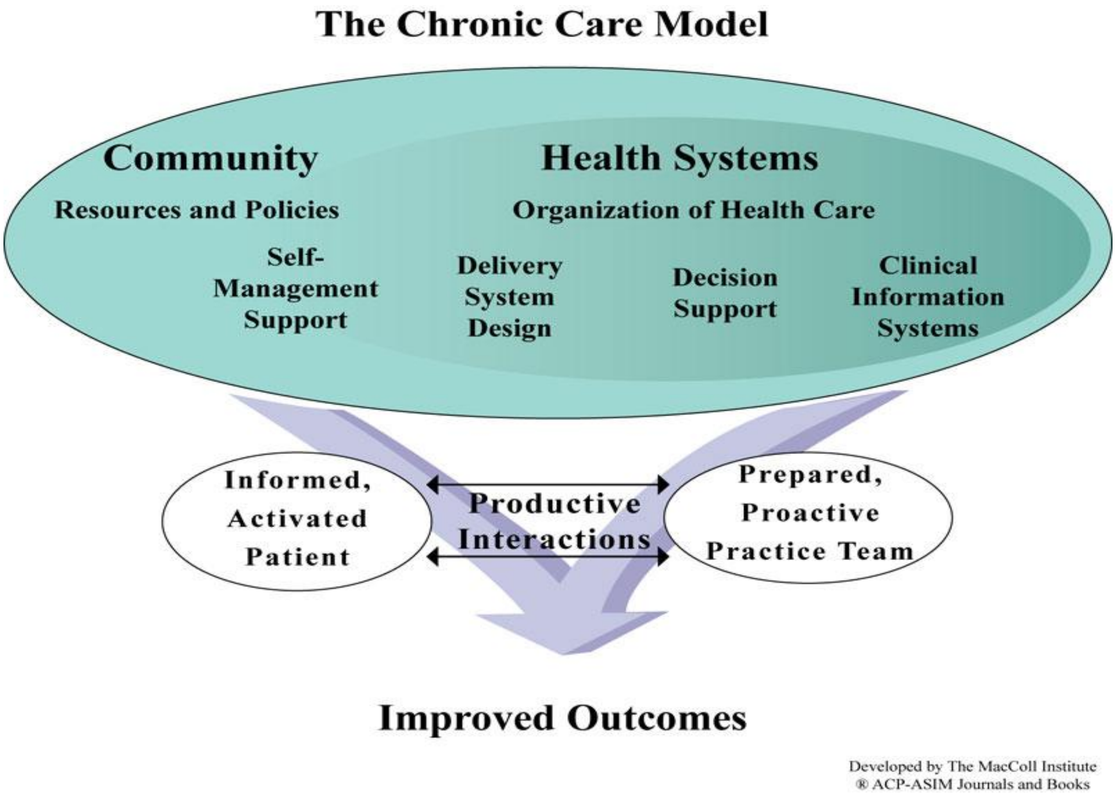

Figure 1.1 The Chronic Care Model (used with permission).

CHAPTER 2

MENTAL HEALTH IN PRIMARY CARE: PERCEPTIONS OF AUGMENTED CARE FOR INDIVIDUALS WITH SERIOUS MENTAL ILLNESS

It was like at [former medical office], I had some concerns and I just felt like I was just cut off. Just cut off, like, "I have other patients." And I feel bad because I don't want to take the doctor...I know he has other patients. I don't want to take his time up. But then again, I want to be able to get my point across to say, "Hey this is what's happening to me, this is what's going on. What do you think it is or what can I do to make it better?"
--"Anna," a 46-year-old female diagnosed with major depressive disorder

Introduction

People diagnosed with serious mental illness must access appropriate healthcare services that address individual needs to successfully manage their illnesses. Because this population experiences an increased risk of developing physical health problems and has a reduced life expectancy, chronic illness management is especially important. This article describes an exploratory study about the primary and augmented care experiences of individuals with mental illness in a rural primary care clinic who require ongoing medical and psychiatric care.

Individuals with serious mental illness die of preventable diseases up to 25 years earlier than the general population (Cashin, Adams & Handon, 2008), which explains why literature focusing on physical illness in this population increasingly examines potential changes in healthcare delivery. People with serious mental illness are at greater risk than control groups for developing chronic physical conditions, such as the care delivery. People with serious mental illness are at greater risk than control groups for developing chronic physical conditions, such as diabetes and cardiovascular disease (Bobes, Arango, Garcia-Garcia, & Rejas, 2010; Bonnett, 2005; Brunero & Lamont, 2009; Cardenas et al., 2008; Muir-Cochrane, 2006; Padmavati, 2010), often due to lifestyle-related factors such as smoking and sedentary behaviors.

The literature also describes inadequate screening and treatment for physical illnesses among individuals with serious mental illness. Roberts, Roalfe, Wilson and Lester (2007) retroactively compared case notes from a medical setting between patients with and without mental illness and found that patients with schizophrenia were half as likely as controls to have blood pressure and cholesterol levels recorded and were also less likely to have smoking status noted. Brunero and Lamont (2009) and Osborn et al. (2010) studied screening for comorbidities among mental health consumers and found that screening is typically ad hoc and inconsistent, which can result in the under-identification of secondary illnesses.

Literature describing the outcomes of programs aimed to improve healthcare for this population typically features quantifiable health improvement outcomes, such as body mass index and waist circumference (McKibbin, Golshan, Griver, Kitchen & Wykes, 2010). While service needs and barriers to care for people with mental illness in a medical setting have been explored (McCabe & Leas, 2008; Papworth & Walker, 2008), the literature lacks qualitative studies from the patient perspective about the benefits of an augmented care program. An augmented care program would include any program that attempts to meet the primary care and mental healthcare needs of people with serious mental illness, regardless of whether the program is implemented in a primary care or mental health setting. This perspective is vital in designing services to meet the needs of this population, as practitioners must be aware of what factors motivate a person to engage in healthcare services and what kind of perceived benefits patients experience in an augmented program.

Current Study

This qualitative, exploratory, interview-based study aimed to explore the service needs and barriers of accessing appropriate medical care for people with serious mental illness and to examine how an augmented program may improve the care received by study participants. As such, the primary research questions for this study are:

1. What are the medical service needs of people with serious mental illness in a primary care setting, according to people with serious mental illness?

2. What are the medical care barriers for people with serious mental illness in a primary care setting, according to people with serious mental illness?

3. How do people with serious mental illness experience "augmented services" (i.e., the CalMEND program) offered through the clinic?

The current study builds upon existing literature on this topic by including consumer perspectives on the augmented healthcare program provided at Placer County Community Clinic (PCCC), a rural primary care clinic with a co-located psychiatric provider.

Methods

Description of the Intervention

The program provided augmented services to clinic patients from July 2010 to July 2011 in partnered primary care and mental health clinics. Specifically, the CPCI program aimed to improve medical treatment for patients with major depressive disorder (recurrent), bipolar disorder and/or schizophrenic disorders who also had a diagnosis of, or risk factors for, hypertension, coronary artery disease, dyslipidemia and/or diabetes. The project aimed to improve medical treatment through early identification of risk factors and consistent screening for physical illness among patients with mental illness. Identification of risk factors for these illnesses was initiated, including: body mass index (BMI) of over 25, cardiometabolic risk factors, use of tobacco products, concurrent with use of atypical antipsychotic medications (AAPs). Additionally, CPCI sought to improve care with coordination between the patient's primary care doctor and his/her psychiatrist. All patients at PCCC have combined medical and psychiatric charting, but participants in the CPCI program had additional documentation in the shared chart that provided specific shared medical and psychiatric goals and progress. The primary goal for this program was to decrease early mortality in this vulnerable population by linking mental health clients with primary care and providing psychoeducational services to improve medical treatment adherence and overall health.

A qualitative study was conducted employing individual interviews from among a convenience sample of participants in the CalMEND Pilot Collaborative to Integrate Primary Care and Mental Health Services (CPCI) program, which was implemented at Placer County Community Clinic in Auburn, California. Funding for this program was derived from the Department of Mental Health Mental Health Services Act contract to the California Department of Healthcare Services.

Procedures

After the university's institutional review board exempted this research project and PCCC approved it, flyers were posted at the clinic to advertise the study. Following responses from volunteers, information was provided about study locations (primarily in a private room in a coffee shop) and procedures. Participants were informed that they would be recorded with an audio recorder. Participants were excluded from the present study if they had not received a diagnosis of a serious mental illness or could not provide informed consent to participate in the study. Interviews were approximately 45 minutes long and participants each received $10 cash for participation. Interviews were conducted over a 6-week period.

A semistructured interview schedule was designed for this study, and included initial demographic questions, along with 18 open-ended questions to promote free expression of ideas on the interview topic. Open-ended questions were based on the review of the literature and specific elements of the CalMEND CPCI program. The interview protocol was not formally pretested, but the author asked sample interview guide questions of program participants who were not in this study to ensure that the questions were easily understood. An example of an interview question for CalMEND participants is, "Why did you decide to participate in CalMEND?" A same sample interview guide was used for all participants, although questions were minimally modified for clarification after transcription of the first four interviews. For example, questions about overall care were adjusted to focus on medical care, as participants frequently described their psychiatric care experiences, which was not the focus of this study. In addition to the questions listed in the sample interview guide, interviews included questions about whether participants were interested in reviewing their transcripts and providing feedback on the content before data were analyzed. The sample interview guide is available on request.

Data Analysis

Following initial transcription of the interviews, 2 participants engaged in member checking, a process that allows participants to review the data and provide feedback. Participants' responses were also triangulated through the use of archival data that the author systematically recorded when implementing the CalMEND CPCI program at the clinic. Material from a program journal maintained about program activities (152 total entries) was reviewed, which facilitated comparisons between participant responses about CalMEND CPCI and systematic program observations. For example, if a participant reported that she attended a "weight group" or "exercise group," the author could identify the group to which the participant referred based on recorded program attendance and topic details. Program activities included support and educational groups, fitness groups, additional screening for metabolic illness, medication management education and individual therapy or skills-building for illness management. Following initial line-by-line and axial coding of the data, specific circumstances under which participants experienced various care-related phenomena were identified through theoretical coding.

Results

Participants

Nine participants (eight females, one male) diagnosed with serious mental illness participated in the CalMEND CPCI program after being recruited through advertisements posted at PCCC. Participants ranged in age from 45 to 63. Eight participants had a diagnosis of a chronic medical illness; the remaining participant is at risk for secondary illness due to age and obesity. All participants in this study were Caucasian. Table 1 describes participant demographics.

Sample Description

The author and the treatment team created a treatment program that included support and educational groups, exercise groups, weekly monitoring of weight and other vital signs and coordination of care between medical and psychiatric providers. The CPCI program activities were designed and implemented over 1 year and the program included participants from PCCC who had comorbid chronic physical and mental health conditions. Nine of these participants were selected for this study.

Usual Care

Based on data analysis, three themes arose from the interview data. These themes of contributing to care, accessing appropriate care and treatment being harmful are discussed in this section. These themes emerged when participants described their experience with treatment as usual, or treatment they received before joining the CPCI program. As participants reported having similar unsatisfactory experiences with primary care, the author reviewed additional literature in this subject area to compare participant responses with those in similar patient satisfaction studies. These findings were similar to what the author found in the current study when participants described dissatisfaction with usual care providers and guided the development of themes in these participant narratives. Usual treatment was emphasized during the interviews to provide a background or baseline for comparison with CPCI experiences.

Contributing to Care

The most commonly reported desire among participants (with nine participants reporting) was the ability to provide input about care decisions, such as type of treatment and priorities within an appointment. As might be expected, those participants who reported feeling like they were included in their care decisions reported more satisfaction with their care, while participants who felt that they were not included tended to avoid necessary treatment. Sandra, a 58-year-old female who works in mental health, describes her positive care experience with her psychiatrist:

> *I feel pretty good…because he asks for my input and asks how I'm doing and stuff and asks me if I want to make any changes and I feel pretty good about it.*

Sandra's experience can be contrasted with that of Jakob, a 45-year-old caregiver, who reports feeling like his medical provider solely determines how an appointment will proceed:

> *They're supposed to be the experts and they're gonna dictate how much time you have to explain to them what the problem is, they're gonna dictate what they're gonna do.*

Participants collectively described more than thirty experiences where they felt that their opinion or contribution to the care plan was devalued by their medical or psychiatric providers, with two participants speculating that their mental illness caused providers to not take them seriously.

Accessing Appropriate Care

The most frequently cited reason that participants provided for why they have not always accessed needed medical services was that the quality of the provider or treatment was unsatisfactory. Samantha, a 47-year-old employed college student, describes unsatisfactory treatment in her description of a previous provider:

> *[They] treated you like a number. Since [they are] such a big organization ...there's so many people that go [there], they were just treating you like—not very personal.*

Sara, a 61-year-old caregiver, describes her usual experience with treatment at the clinic:

> *I don't feel any satisfaction when I leave [the clinic]. So, therefore, I tend not to go in when I should.*

Another issue that participants reported was that limited information was provided to them about medication side effects and risks. This concern is also linked to the theme of contributing to care decisions because participants described feeling like they weren't included enough in the medication prescribing process to be able to weigh the costs and benefits of medication.

Challenges with scheduling and accessing basic and specialty care wove throughout participant narratives when referring to treatment as usual. Overall, participants reported that they have historically had trouble scheduling appointments, experienced extended wait times before appointments at the clinic, have had long gaps between available appointments and were not familiar with what additional services maybe available to them and how to access those services.

Elizabeth, a 52-year-old musician, reported challenges with accessing services via phone:

> *Like, I've got something now that I need to go make an appointment for and when you call the clinic, they don't call you back. So now I'm gonna have to go into the clinic to make an appointment and that's really hard to do.*

Elizabeth's experience of having trouble making unnecessary trips to the clinic was also described in three other participant narratives, with social anxiety or agoraphobia cited as a factor that prevents these participants from leaving their homes.

Treatment Causing Harm

The theme of treatment diminishing overall health surfaced as participants reported that taking psychotropic medication on a long-term basis has caused them some physical harm. Adverse physical effects of medication were of great concern to participants, who also reported that they have general concerns about taking medication. Inga, a 47-year-old chef, exemplifies this in her response to a question about her treatment goals:

> *Become whole again. I feel like I'm half, because half medication, half me. I'd like to just become whole again.*

Sandra, who earlier described having a positive relationship with her psychiatrist, describes her feelings about taking psychotropic medication:

> *The medication attacks us, it attacks our physical health and so we have to be mindful of our physical health because of the medication does to our bodies.*

Elizabeth reports feeling conflicted about medication and about following her treatment regimen because of the adverse health effects:

> *It’s a vicious circle...I’d like to give my body a break, you know? All this medication but, then these doctors say, “You’re gonna have to be on it for the rest of your life.” And that sorta bothers me.*

Augmented Services

This section features participant descriptions of experiences they had with the CalMEND CPCI program. When asked about how the program influenced their care or health, participants reported that they benefitted from coordination of care between providers, the group environment and decreased isolation, and weight management support. A description of each of these care elements is provided in the corresponding sections below.

Care Coordination

One of the aspects of the CalMEND CPCI program that was highlighted to prospective participants was care coordination between medical and psychiatric providers. Six participants in this study reported on care coordination and said that this shared information helped them better engage with both medical and psychiatric providers. Vera, a 63-year-old former champion swimmer, stated that the program also changed provider perceptions and helped her engage with auxiliary staff:

> *Since the CalMEND program, I’ve gotten to know a lot more of the staff. And they all know that I’m conscientious about my health and so they’re doing more to help me, I think....Because I was in the program, both my psychiatrist and my primary care physician seemed to be working more in concert with each other and with the group.*

Group Environment

All of the participants who engaged with the CalMEND CPCI program reported that they found the activities involving groups to be helpful because of the support the group provided. The groups provided in the CPCI program were both supportive and educational in nature and focused on areas such as self-esteem, exercise, weight loss and diabetes. These groups were designed to improve target clinical outcomes, such as reduction in BMI and blood pressure. Participants reported that the group atmosphere felt inclusive and nonjudgmental, which helped them make progress toward their goals. The theme of judgment repeatedly surfaced when participants described their traditional medical care, while participants reported feeling less judged when participating in CPCI groups. Elizabeth and Anna respectively describe this phenomenon:

> *Everybody I've met is sort of like me. They all have the same problems.so that we all share...we can all share and no one's critical, so that makes it safe. Because when I leave [the CalMEND program], I just feel my self esteem is just on cloud nine. I just feel comfortable….And not feel like you're gonna be judged.*

Samantha, who earlier reported feeling like she has been treated like a number in her medical care, describes the group benefits of CalMEND:

> *…it's been helpful for me about the foods and then self esteem,that self esteem class. And just expressing your feelings. And just seeing how everybody else is doing too, and getting their input. That's important to have a social network of a support group system.*

Sara also describes the educational and social support benefits of CalMEND group participation:

> *Learning about healthy living. Learning about weight management. Getting support. Because I didn't have any support at home, basically. Except negative support.*

Weight Management Support

Many participants who stated that their primary care providers have historically informed them that they are overweight also said that their providers did not offer much guidance about how to lose the weight. Participants who received weight loss support from CalMEND CPCI reported that they enjoyed the support offered through the program and felt more positive about their weight loss goals. Weight loss support efforts included frequent monitoring of weight changes, individual consultations with the treatment team about individualized weight loss strategies, calorie tracking, healthy cooking demonstrations and meal planning assistance. Samantha compares her typical primary care visit with her experience in the augmented care program:

> *I go out of the [primary care appointment] feeling kinda depressed and feeling kind of this image of me being fat…but when I'm in [the CalMEND] program it seems like I feel accepted and norm--you know, I feel that I'm not gonna be judged as much.*

Anna, who frequently reported being concerned about wasting her provider's time, asked the provider to give her literature about how to lose weight, but found that she did not get enough information during this typical care-as-usual visit:

> *…and she…says, "oh my goodness, I don't even know if we have any literature. Let me go find you some." And then she gave me it, but it was only one booklet. It's not like what we're doing now [in the CalMEND program]. There's so much more information that we get now, than I had before.*

Negative Cases

Special attention was paid to what could be classified as negative cases in these data to improve the quality of care provided in primary care settings. In other words, if a participant reported that the augmented care program was not helpful or that s/he had never had any problems receiving medical care, these experiences would have been explored further to identify possible strategies for changing existing programs to improve care. Participants generally described feeling that various factors, such as finances and appointment length, limited their treatment options, but almost all of the respondents indicated that they understood why these limitations exist and are not especially bothered by them. No participants reported that they did not benefit from the CalMEND CPCI program, although several participants reported experiences that could be described as negative cases. These experiences are identified below.

Two participants reported in their interviews that they do not want to be treated along with other people with mental illness. These participants stated that their illnesses either were not similar to those of other participants or that they do not want to be involved socially in treatment with other people with mental illness. One participant reported that she has almost always had good treatment from providers, which is in contrast to most reports of poor treatment from providers in the past. Another participant, "Anna," reported that she would be happy with any treatment provided to her because she is just grateful for treatment at all. No participants reported having perfect medical treatment or access.

Discussion

In summarizing participant responses to the research questions, ambivalence about treatment-related activities underscored many care scenarios. Participants generally recognize the importance of medication, for example, but they report feeling as if taking medication makes them somehow less than a whole person or is subtracting something from their essential self. Anna's opening excerpt also reflects a desire to seek treatment and be heard by a provider alongside concerns about whether she might be inconveniencing the provider. Several participants also reported feeling anxious about leaving their homes but also wanting to get out more and engage in activities. These situations demonstrate that participants do not passively receive treatment. Indeed, the apparent ambivalence about treatment shows that participants actively reflect upon their experiences, contemplate alternative actions and define their personal standards for care.

In terms of the interplay between individuals and their environment, it was anticipated that people would generally feel like their providers were in charge of the care relationship. Both in the interviews described in this paper and in informal discussions with CalMEND CPCI participants about the quality of care, the author repeatedly heard people say that they felt like they had limited power in the care environment and did not feel that their opinions were especially valued. Similarly, participants in a 2007 study of patient satisfaction among low-income females reported that dissatisfaction with outpatient care resulted from doctors ignoring patient input, doctors lacking necessary clinical skills, doctors treating patients impersonally, and doctors rushing with patients (Rubio, Pearson, Clark & Breitkopf, 2007).The results of the current study indicate how often respondents took action when their needs were not met. Participants in this study made many treatment decisions when faced with unacceptable care, including discontinuing services with their providers, not adhering to the prescribed treatment regimen, modifying their treatment regimen and seeking additional consultation. These care decisions provide insight into the evolution of a given patient-provider relationship.

As with all qualitative studies, results from this study are not intended to be generalizable to other people with serious mental illness or people in different geographic areas. The current study was conducted in a rural, predominantly Caucasian Northern California community and the participants receive services at the regional medical clinic. Funding for this project was received from an outside entity that aimed to promote integration of primary care and mental healthcare and the services provided as part of this project were dictated, in part, by staffing, physical space and funding requirements. Therefore, results from this study provide insight into the experiences of some individuals with serious mental illness who have received primary care and mental health services in this community. Results demonstrate that these individuals identify common problems with their healthcare delivery and that they experience similar benefits when receiving additional services through their health clinic. Further, the author was the only person involved in the coding process, which is a limitation of this study.

Results of this study are important for future healthcare delivery design because they illustrate the reasons why some individuals with serious mental illness are motivated to participate in augmented care. Participant responses to the main research questions underscore the importance of recognizing the interaction between mental illness and physical illness and designing appropriate treatment programs to address the needs of this population. Previous studies (Bonnett et al., 2005; Brunero & Lamont, 2009) have demonstrated that education about health risks does not lead to changes in unhealthy lifestyle behaviors in this population and that people tend to view themselves as healthier than they actually are. The results described herein demonstrate that patient satisfaction with healthcare delivery can increase if providers focus on educating patients about self-management of their illness(es) and providing a supportive environment that includes group participation, increased health monitoring, and follow-up.

This study sheds light on how primary care services can be improved to better meet the needs of people with serious mental illness. Although the CalMEND CPCI program was a distinct service offered to a selected group of individuals, results from this study indicate that providing additional services to people with serious mental illness in a primary care setting can improve patient satisfaction and increase adherence to treatment. Several respondents described not adhering to their usual treatment regimen because they didn't feel like their opinions were valued. After participating in the CPCI program, participants stated that they felt less judged, more familiar with the providers at the clinic and more knowledgeable about healthy living—all factors which can contribute to a more positive healthcare experience. Significantly, the medical and psychiatric providers in this program were not asked to substantially alter their patient services. Instead, a nurse and social worker facilitated program activities that empowered participants during their visits with providers, resulting in greater satisfaction and adherence to treatment, while increasing social support and a sense of belonging. Future research examining the benefits of augmented care programs for people with serious mental illness should include participant perspectives, along with clinical health outcomes, to provide a complete picture of how such a program affects participants.

Table 2.1. Characteristics of Participants

Sex	*n*	Ethnicity	*n*	Age	*n*	Medical Diagnosis/Risk (*n*>11)	*n*	Smoking Status	*n*	Reported Exercise	*n*
Male	1	Caucasian	9	45-54	6	Diabetes	1	Current Smoker	2	Frequent	4
Female	8			55-64	3	Hypertension	3	Former Smoker	1	Infrequent	5
						High Cholesterol	5	Non Smoker	6		
						Obesity	5				
						On AAP	4				

CHAPTER 3

MENTAL HEALTH IN PRIMARY CARE: PERCEPTIONS OF AUGMENTED CARE FOR INDIVIDUALS WITH SERIOUS MENTAL ILLNESS

Background

In 2010, Placer County Community Clinic (PCCC) was selected, along with five other California counties, to receive funding through the CalMEND Pilot Collaborative to Integrate Primary Care and Mental Health Services (CPCI) program. Located in rural Auburn, California, this clinic had previously been operating as a primary care clinic (Rural Health Center) serving primarily low-income individuals living in the region. Auburn is a foothill town with a population of 44,468 in the 2010 census and the population is 89% Caucasian (http://www.census.gov/popfind). PCCC clinic had multiple primary care providers and one psychiatrist co-located on site. Clinic administrators sought to increase partnership between primary care and mental health providers at this location in order to decrease poor health outcomes and improve treatment adherence for individuals with mental illness who received services at that location. Participation in the CPCI program offered an opportunity for PCCC to expand services for patients with mental illness through staffing and service delivery changes at the clinic.

Purpose and Format

This article is a descriptive piece that describes the process of implementing and evaluating a specific health-mental health integration program at PCCC. This article is intended to be used to assist other primary care clinics in the process of integrating primary care and behavioral or mental health systems. The organization of this article first provides context for a project that was implemented at a clinic where the author worked as a clinical social worker, then describes how comorbid medical illness affects individuals with mental illness and what interventions have been created to address this problem in the past. The article establishes the need for integrated health care services through a review of the literature and a description of current health care delivery organizations. Information is provided about how Placer County became involved in a specific integration effort (the CPCI program) and a description of how that program was implemented at that site is outlined. Within the description of the program, this article also provides program goals and organization, key measures, timeframes, and the process of program implementation and outcomes.

Comorbidities Among Individuals with Mental Illness

Individuals with serious mental illness (SMI) are more likely than those without mental illness to experience chronic physical conditions, such as diabetes and cardiovascular disease (Bobes, 2007; Bobes, Arango, Garcia-Garcia & Rejas, 2010; Brunero & Lamont, 2009; Cardenas et al., 2008; De Hert et al., 2009). Possible causes of comorbidity cited in the literature include lifestyle factors, such as smoking (Bobes et al., 2010; Bonnett et al., 2005; Pack, 2008) and lack of exercise (Bonnett et al., 2005; Molarius et al., 2009), as well as treatment factors, such as inconsistent screening for and monitoring of comorbid illnesses (Roberts, Roalfe, Wilson & Lester, 2007). In addition to the physical health risks posed by comorbid mental and physical health conditions, comorbidity may also adversely affect mental health treatment outcomes. To illustrate these issues, Domschke and colleagues (2009) conducted a multiple-time series study with 241 patients with SMI and found that patients with comorbidities responded worse to antidepressant treatment and had lower overall functioning (Global Assessment of Functioning) scores than patients with no physical illness present.

Health Beliefs and Activities

In an attempt to develop interventions to address the problem of sedentary lifestyle among adults with mental illness, Soundy, Faulkner, and Taylor (2007) examined determinants of health in individuals with SMI. Using semistructured interviews, researchers conducted an analysis of knowledge and attitudes related to health, as well as social support systems among members of this population. Findings indicated that individuals were ambivalent about increasing physical activity and lacked supports to encourage exercise. Among the participants with the best health outcomes were those who participated in walking long distances on a regular basis. Researchers concluded that effective interventions to improve physical activity among SMI should include walking and address aspects of ambivalence and lack of support.

To explore attitudes toward health and health behaviors in adults with SMI, Brunero and Lamont (2009) conducted a cross-sectional survey of health beliefs among inpatient mental health consumers. Results of this study indicated that individuals with SMI have positive health beliefs about themselves and their health behaviors, despite having poor physical health outcomes. Findings from this study suggested that effective service delivery should include increased health monitoring, follow-up and self-management education for this population which may lack insight into their own health care needs and health behaviors. As these health behaviors may include smoking or unhealthy food consumption patterns, increasing insight is important to improving physical health outcomes.

Previous Interventions to Address Comorbidity

Successful interventions to improve management of comorbid conditions for this population have been described in the literature (Druss et al., 2010; Katon et al., 2010; McKibbin et al., 2006; Osborn, Nazareth, Wright & King, 2010; Seekles, van Straten, Beekman, van Marwijk & Cuijpers, 2006; van Orden, Hoffman, Haffmans, Spinhoven & Hoencamp, 2010), but vary widely due to setting and organizational differences. Van Orden and colleagues (2009) conducted a study examining the effectiveness of a mental health collaborative care program in a primary care setting and found that collaborative care reduced costs, wait time and duration of treatment for patients with comorbid mental and physical health conditions. Davis and colleagues (Davis et al., 2011) also describe a successful partnership model that links primary care with mental health care to better reach underserved patients through house calls, group primary care visits and telehealth-monitoring. A 2008 systematic review of integrated care programs produced mixed results when mental health was integrated into primary care, while integrating primary care into mental health care produced more positive results (Evidence Report 173, 2008, accessed at http://www.ahrq.gov/downloads/ pub/evidence/pdf/mhsapc/mhsapc.pdf).

Several qualitative studies have been conducted to determine the efficacy of specific interventions that improve service delivery for individuals with SMI through partnership efforts. Rees and colleagues (Rees, Huby, McDade & McKechnie, 2004) interviewed members of community mental health teams to learn about professionals' perceptions of the usefulness of an Integrated Care Pathway (a formalized team approach between primary care and mental health providers) and found that the model was acceptable but that lack of support from high-level administrators and problems with budget made the program untenable. Kidd and colleagues (Kidd, Kenny & Endacott, 2007) asked consumer advocates and clinicians about their experiences incorporating consumers into mental health service delivery and learned that consumer participation is welcomed but not maximized due to budget and policy barriers. Farrand and colleagues (Farrand, Duncan & Byng, 2007) asked primary care providers, patients and managers about their perceptions of a Graduate Mental Health Worker in the primary care setting and found that all participants found this role to be helpful for use in stepped care models, which evaluate and treat patients based on risk and need levels.

Primary Care Treatment of Patients with Mental Health Disorders

Lucas, Scammell, and Hagelskamp (2005) conducted a qualitative study examining the perceptions of physicians treating mental health conditions in a primary care setting and found that providers felt confident about their knowledge of mental health problems and about detecting these problems in their practice. However, the providers also reported that they did not have adequate time to spend with patients and were not familiar with how to refer patients to outside providers, if needed. These findings are important in the discussion about health care delivery systems because they speak to the need to modify available treatment for mental conditions in primary care settings and illustrate existing divisions between primary care and mental health treatment provision.

To determine the provider perspective about how the existing health care delivery system might be altered, Mykletun and colleagues (2010) conducted a qualitative study of what changes primary care providers thought might improve the delivery system for patients with mental illness. The authors identified several common responses, including increased capacity in and collaboration with secondary health care (specialty care), improved skills and knowledge about mental health in the primary care setting, and more time with mental health patients in primary care. While they concluded that collaboration with specialists would be a way to improve the medical care of individuals with SMI, the researchers found that they were not able to devise a cost-effective delivery model.

Scope of the Problem

In response to the World Health Organization’s estimate that depression will rank among the top three leading causes of burden of disease in 2030, Fernández and colleagues (2010) conducted a cross-sectional survey of primary care patients to determine the loss of quality-adjusted life-years, or QALYs (a measure which includes quality and quantity of life), resulting from mental disorders. Results of this study indicated that mood disorders are the second leading cause (behind chronic pain) of loss of QALYs in the primary care setting. This study demonstrated the scope and impact of mental disorders being treated in primary care settings, which, as described above, provide insufficient screening and monitoring for secondary illnesses. Identifying appropriate health care delivery strategies for individuals with mental illness in primary care settings will decrease this significant health care burden.

Overview of Service Delivery Organization

Primary care clinics that serve Medicare and Medicaid patients and operate in underserved rural areas (such as Placer County) may be designated as Rural Health Clinics (RHCs) or Federally Qualified Health Centers (FQHCs), in addition to other designations not explored in this paper. Specific details about how these programs are funded and regulated are found in Section 330 of the Public Health Service Act (United States Food and Drug Administration, 2009). Rural health care has received dedicated federal funding since 1977, when Congress passed the Rural Health Clinics Act (Health Resources and Services Administration [HRSA], 2006). The FQHC program has existed formally since 1989, when Medicaid and Medicare payments were added to the Community/Migrant Health Center programs initiated in the 1960. Funding for RHCs and FQHCs was changed from a cost-based reimbursement system to a Prospective Payment System (PPS) in 2000 (HRSA, 2006). Various funding modifications for RHCs or FQHCs funds have attempted to address unmet health care needs in regions where traditional fee-for-service payment strategies would be ineffective (HRSA, 2006). The description of these programs is provided here to introduce the possible structural or funding barriers or advantages of integrating primary care and mental health in clinics or care sites receiving federal funding.

Depending on the organizational goals and funding sources, health care entities may describe themselves as mental health providers or behavioral health providers. The terms “mental health” and “behavioral health” are often used interchangeably in the literature and in common usage, but technically represent different concepts. The National Association of State Mental Health Program Directors (NASMHPD) defines behavioral health as “mental health and substance abuse” (NASMHPD, 2005). Many treatment providers calling themselves mental health agencies also focus on substance abuse treatment and some entities change their name to reflect this inclusion. In terms of mental/behavioral health treatment in primary care, a health care entity may provide primary care behavioral health care or specialty mental health care. These models approach mental health treatment differently and are summarized on the Integrated Behavioral Health Project website (http://www.ibhp.org/index). Briefly, primary care-based behavioral health care provides mental health services in a primary care setting, so appointments are similar to typical medical appointments (15-30 minutes in length, medical provider in charge of care). Specialty mental health care may occur in the primary care setting or mental health setting, generally includes a therapist, and appointment lengths are variable based on patient needs.

CPCI Program

The CPCI program derived funding from the California Mental Health Care Management (CalMEND) project, a Department of Mental Health Services Act contract to the California Department of Health Care Services (DHCS). The program was subcontracted to Health Management Associates. The program incorporated Wagner’s Chronic Care Model (Bodenheimer, Wagner & Grumbach, 2002) and the Institute for Health Improvement’s Breakthrough Series Model and aimed to improve partnerships between mental health or behavioral health providers and primary care providers to improve care for individuals with SMI. A program summary can be found at the DHCS Project Overview website (http://www.dhcs.ca.gov/provgovpart/Documents/ CalMEND%20 Pilot%20Collaborative.pdf). The Final Report for the program, which includes all county outcomes, can also be obtained from DHCS at http://www.dhcs.ca.gov/provgovpart/Documents/ CalMEND/ CPCI%20 Report%20Nov11.pdf. In general, the report indicated that the model used for the program was helpful, but some changes to implementation and measurements may have provided the administrative team with more useful information. Limitations of measurements at Placer are similar to those described in CPCI's report and are found in the discussion section below.

Specifically, the CPCI aimed to improve medical treatment for patients with major depressive disorder (recurrent), bipolar disorder and/or schizophrenic disorders who also had a diagnosis of, or risk factors for, hypertension, coronary artery disease, dyslipidemia and/or diabetes. Early identification of risk factors for these illnesses, including body mass index (BMI) of over 25, cardiometabolic risk factors, use of tobacco products, and concurrent use of atypical antipsychotic medications (AAPs) were key outcome measurements. CPCI differed from previously tested interventions (Katon et al., 2010; Unutzer et al., 2002) by expanding the pilot population to include individuals with schizophrenia and bipolar disorder. All counties who received funding to implement the CPCI project expected providers to attend periodic in-person and webinar-based sessions with program administrators in order to learn new information, review data collected by counties and share ideas between county program participants.

Program Goals and Organization

At Placer County Community Clinic, this pilot provided partial funding to create a program intended to answer the question, "Can health outcomes of people with serious mental illness be improved through effective partnerships between primary care and mental health?" The clinic aimed at improving overall treatment and treatment adherence for patients with mental illness by partnering with the local mental health department, which was located at the same site as the clinic. The funding entity provided no specific recommendations about how the partnership between mental health and primary care should be organized, nor did it specify any treatment modality that might result in improved health for patients. The mental health department, called Placer County Adult System of Care (ASOC), contractually employed a full-time clinical social worker who was provided to the clinic to implement the CPCI program. A registered nurse who was already employed at the clinic was selected to work part-time with the CPCI program at the clinic. Additional team members identified to implement the CPCI program included clinic administrators, physicians and the county privacy officer.

Key Measures

The following data were collected monthly to submit to program administrators: number of patients receiving partnered mental health and primary care services; number of patients screened for and having cardiometabolic risk factors; number of patients taking AAPs; number of patients who are screened for and use tobacco, alcohol and other drugs; and number of patients who have documented mental health and primary care treatment goals. These measures were submitted in aggregate to program administrators, while PCCC collected these data and additional measures on a patient level. Specific cardiometabolic risk factors included body mass index, blood pressure and tobacco use.

The Assessment of Chronic Illness Care (ACIC) is based on the Chronic Care Model and measures an organization's capacity for providing integrated care. This document and all other forms described in this paper are available upon request; the ACIC can also be viewed at http://www.improvingchroniccare .org. All counties participating in the CPCI program completed a modified version of this assessment during their planning phase in June 2010 to help identify areas needing improvement. The modified version includes a focus on integrating care across partnering organizations and on wellness and recovery in self-management. This assessment was completed again in the midpoint of the project (January 2011) to reflect organizational changes that were made as result of the project.

Timeframe

Although this program was initially intended to span approximately 18 months (April 2010 to October 2011), budget cuts in fiscal year 2011 forced the program to end 2 months early (July 2011). Early implementation of CPCI at PCCC included identifying an administrative team and physicians who would be involved in the program and hiring the team social worker and nurse. The first day of treatment-related activities (referrals, screening, assessing patients) was in August 2010. Participants joined the program throughout the life of the program and discontinued services as needed, so no group of participants were receiving treatment for the entire duration of the program. The other program elements (increasing teamwork, restructuring services at the clinic, improving quality assurance) took place throughout the 16-month program.

Implementation Process

Implementation of the CPCI program at PCCC began after clinic administrators attended the initial program preparation session and identified members of the CPCI treatment team at the clinic. The treatment team decided to identify clinic patients who potentially met program criteria and to recruit those patients who might be suitable candidates for a program that was thought to potentially include psychoeducational services, along with possible increases in clinic visits. The team aimed to identify and recruit 100 suitable patients to participate in the CPCI program. Figure 3.1 provides a logic model for the implementation process.

Screening and Recruitment

As part of the screening process for CPCI, the treatment team reviewed over 300 shared (psychiatric and medical) charts to note diagnoses, vital signs and lifestyle factors, such as smoking. Specifically, the program targeted patients with major depressive disorder (recurrent), bipolar disorder and/or schizophrenic disorders who also have a diagnosis of, or risk factors for, hypertension, coronary artery disease, dyslipidemia and/or diabetes. Risk factors for these illnesses include body mass index (BMI) of over 25, use of tobacco products, and use of AAPs.

The team observed during the chart screening process that many charts did not include relevant, up-to-date information about clinic patients. The team sampled 25 charts to examine missing information and found a number of key health indicators were not documented. Table 3.1 shows the results of the chart screening. The team learned in this process that chart screening is very time-consuming and that it can take many months of part-time chart review (approximately 3 hours per day) to identify just 100 participants. In addition to screening charts to identify participants, clinic physicians and the psychiatrist were encouraged to refer patients to the CPCI program. A referral form was created and distributed to these providers following a clinic meeting where the CPCI purpose and treatment team were introduced to providers. Providers were instructed to refer patients who had comorbid medical and psychiatric illnesses and who might benefit from psychosocial or nurse-led interventions to improve treatment adherence or overall health. Providers were not told what specific interventions would be offered at that time because the treatment team had not yet evaluated patient needs. The treatment team explained to providers that this "warm hand-off" to bring patients into the CPCI program may be preferable to identifying patients through chart screening because the providers could provide program information to patients at the time of the medical or psychiatric visit.

For referred patients and patients identified via chart screening, the team social worker began contacting patients either by phone or in-person at the clinic to explain the purpose of the program and identify interested participants. PCCC had an appointment scheduling system where patient appointments could be viewed by anyone with access to the system, so the social worker could identify times when the patients were going to be at the clinic. The social worker explained to prospective patients that they would be scheduled to meet with the treatment team to have an initial assessment for the program and details of further available services would be based on the assessment. Assessment appointments were scheduled as close to other clinic appointments as possible to decrease inconvenience for patients, who often had inconsistent transportation options.

Patient Assessment

The treatment team assessed patients who agreed to participate in the program and who attended their assessment appointment to gather information about their treatment needs and desires. Some patient assessments were conducted by the nurse and social worker together, while others featured the patient and either the nurse or social worker. These differences were based on patient and provider availability. The social work assessment tool asked about the patient's presenting problem, biopsychosocial history and treatment goals, while the nursing assessment asked about medical history, frequency of tests and self-management of illnesses. The treatment team also assessed clinic needs by talking with providers and clinic administrators about their specific desires for how the CPCI program might improve patient health.

Provider and Administrator Assessment

The treatment team met with clinic providers informally during the assessment period to get an idea of what they wanted to see the CPCI program accomplish at PCCC. The clinic psychiatrist and medical director/chief physician sat down with the social worker individually to provide input about what patient outcomes they would like to see. Clinic administrators shared concerns about patient care and hopes for what CPCI might accomplish during weekly team meetings.

Assessment Outcomes

During the assessment process, the treatment team learned that the majority of participants wanted to address one or more of the following treatment goals: lose weight, stop smoking, manage diabetes, improve psychiatric symptoms, decrease cholesterol and improve access to primary care. Table 3.2 reflects patient and provider/administrator goals. Goals were documented on a form created by the treatment team (CalMEND Treatment Plan) to be placed in the combined patient chart and signed by the patient, a treatment team member and the patient's medical and/or psychiatric provider. A list of forms created by PCCC’s CPCI team, along with the purpose of forms is presented in Table 3.3. Patients also described challenges with talking to their doctors during appointments; these issues were further delineated in a qualitative study conducted by this author at the conclusion of the CPCI program (Nover, 2013). While some patients reported that they lacked the skills to talk to their doctors about their medical issues, others stated that they felt intimidated or did not want their doctor to know about certain unhealthy behaviors in which they engaged, such as substance use.

When talking to administrators and providers, the treatment team found that concerns were related to treatment adherence and revenue. The psychiatrist reported that many of his patients missed appointments and did not call to cancel in advance. Because patients were able to be rescheduled after missing an appointment, the schedule filled up and new patients or highly symptomatic patients could not get in and sometimes ended up in a psychiatric hospital (operated by Placer County), which is far more costly than preventive care. Medical providers reported that patients with mental illness who did not adhere to their physical illness regimen—such as those with diabetes—needed to be educated about their illnesses and how to maintain healthy weight and lifestyle to decrease repeat visits and medical hospitalizations.

Another problem identified by clinic providers and administrators during the initial assessment was the lack of information that the clinic has about its patients. The psychiatrist who reported patients for multiple missed appointments was never able to follow up with patients to determine the cause of missed appointments due to time constraints. Medical providers reported that some patients demonstrated unusual behavior during an appointment but providers were unable to spend time talking to the patient and/or family to obtain more information.

The treatment team learned during the assessment period that not all assessment strategies were effective. Physical space limitations in the area of the clinic designated for CPCI made the nursing assessment difficult at times. Assessing patients via phone for participation in CPCI produced numerous volunteers for participation, but many of these volunteers did not attend initial appointments and later reported that they were not interested in the program. During the recruiting period, the treatment team called some patients to schedule an assessment and the patients reported being in the middle of a crisis situation. While it created an opportunity to notify the clinic psychiatrist of the crisis, such a call also could have exacerbated the crisis by creating a confusing situation if the patient was not able to understand the purpose of the call.

Treatment Planning

The treatment planning phase of the CPCI program began in December 2010, following four months of chart screening and assessments. At the time that formal treatment planning began, the CPCI program had 22 participants with shared care plans to address physical and mental health goals. For those patients who were assessed near the start of the assessment period (when no formal treatment plan existed), the team requested that patients come to the clinic weekly to monthly in order to receive individualized treatment. Such treatment included weigh-ins, completion of food diaries, individualized meal and fitness planning and brief individual counseling as needed. In December, the treatment team was able to identify several common interventions that were predicted to be helpful to program participants and a preliminary treatment plan was created. Because PCCC already had an on-site psychiatrist, the team was further along in the process of establishing treatment plans than other counties in the CPCI program. As a result, the treatment team found that there was limited support from other counties in terms of sharing information about best practices, as the other counties did not have shared medical and psychiatric teams yet.

The treatment team also worked with clinic administrators to establish a contract for a local diabetes educator to provide occasional (1 hour per week for 10 weeks) diet-related sessions to program participants. The education and support groups were designed to directly address participant health goals by providing health information and a support network for encouraging adherence to the program. Table 3.4 lists the interventions designed to address patient goals. To address the issue of difficulties in communication with providers reported during the assessment, the treatment team developed a simple “Talk to your Doctor” Form that allowed patients to list things that they wanted to discuss with their providers. The treatment team gave this sheet to patients who reported communication challenges and encouraged them to take it to their next appointments. The treatment team also offered to keep the paper in Placer County’s CPCI program files and give it to the patient immediately prior to his/her next appointment, if there were concerns that he/she might misplace the form.

The treatment team planned to address provider concerns about patients presenting with psychosocial issues by having the social worker available on an as-needed or referral basis to provide more extensive assessments of patients. The social worker also provided brief counseling to patients who were referred by the psychiatrist. Additionally, the treatment team also tested the idea of having the team social worker available to a primary care provider all day for psychosocial assessments and/or interventions, but on the trial day the provider did not need any assessments.

CPCI in Action

As part of the statewide CPCI program, county teams were instructed to test small changes to their service delivery using the Plan-Do-Study-Act (PDSA) model (Langley, Nolan, Nolan, Norman & Provost, 2009). The clinic used this model throughout the CPCI project to decide whether to continue to implement whatever was being tested. The model is only intended to guide small changes; it was not intended to evaluate major outcome changes, such as 6-month weight change in participants in educational group. Placer ultimately created 33 small tests of change using this model in the previously-described ACIC categories to show the areas in which changes were made. Figure 3.2 provides examples of the types of changes that were made using this model and includes the ACIC categories. A complete list of changes tested is available upon request.

Access to Primary Care

Of the services most highly utilized by the participants, the nurse-led care coordination was requested most frequently. Participants attended groups and engaged in other CPCI services, but the primary reason that most participants contacted CPCI was to receive support with medical issues, including medication support, referral follow-up, and illness management. Appointment scheduling support was also frequently requested, because participants regularly reported challenges with scheduling.

The CPCI treatment team observed that labs were not being ordered according to published standards of care, so this information was presented to providers at a quality assurance meeting in March 2011. The providers agreed upon standards of care for chronic illnesses, including dyslipidemia and diabetes that would be used for treating clinic patients. The treatment team also arranged to allow nurses to write lab orders to address any provider issues when there was not enough time to write orders.

Clinic Teamwork

Clinic administrators supported the CPCI program at the beginning and created opportunities to educate other clinic employees about the purpose and goals of the program. All-staff meetings, quality assurance meetings and an in-service training on mental health in primary care provided opportunities for clinic employees to inquire about and participate in CPCI. The initial system of having providers refer patients to the CPCI program ultimately failed, because providers were sometimes not able or willing to provide referrals. The treatment team attempted to address this issue by promoting the "Pink Outcomes Sheet," which had patient health variables of interest to providers listed in monthly format to quickly observe progress. This effort did not increase the level of referrals to the program. Similarly, the Shared Care Planning Form that documented patient goals and was expected to have patient and provider signatures often went unsigned by providers and was not regularly utilized by providers.

Front-office employees are among the most important participants in an integrated care program, since they are often the first faces the patient sees when he or she enters the clinic. During the CPCI process, the treatment team experienced several barriers in coordinating with office staff, including problems with scheduling and notification of patient arrival and problems with filing and accessing patient medical charts. The majority of these problems were ameliorated by the treatment team's nurse, who had worked with front office staff for 2 years and was familiar with their operations. The treatment team also worked with administrative staff to set up a CPCI shared drive for use within the clinic when the nurse or social worker was not present to open relevant documents, but this request was never met, despite repeated attempts throughout the program.

Teamwork with Mental Health Department/Adult System of Care (ASOC)

Although most CPCI participants were not affiliated with the mental health department (ASOC) while they were in the CPCI program, a few patients had county social workers or conservators. When possible, the treatment team obtained permission from patients to collaborate with these employees to reinforce patient and program goals. The treatment team also worked with a peer navigator from the community and two consumer staff from ASOC, who assisted the team with group activities and provided information about the mental health drop-in center and other activities to program participants. The team also tried to make arrangements for CPCI activities to occur outside of the clinic (but still on the site of the county health compound), but CPCI participants did not attend those activities and reported that they preferred to meet at the clinic.

Community Teamwork

In keeping with the ACIC guidelines recommending community collaboration, the treatment team worked with community members involved in patient care, such as family members, care home staff and outside social workers. Although establishing linkages with community members was encouraged as part of the ACIC guidelines, PCCC did not have a strategy in place to reach out to specific community members and no logic model was created. Outsiders were added on an ad hoc basis during this pilot effort as it became clear that additional personnel were needed in implementing the project. The treatment team also made referrals to outside support and educational groups for patients requesting additional services. The treatment team attempted to link some participants to fee-based community services, but participants did not engage in these programs due to insufficient finances. The CPCI dietitian who was added to the team from a community setting was unable to continue to provide instruction to CPCI participants beyond her 10-week commitment due to lack of funding for contract employees.

Evaluation Measures

The PDSA model was extremely valuable in evaluating changes to clinic structure and services to promote positive change. A program like CPCI cannot be implemented without a systematic way to monitor progress and innovation because it is not designed as a standardized intervention. This worksheet that corresponds to the PDSA model requires the user to identify the desired change (e.g., creating a new patient registration form), objectives and questions and then make a plan for how the change will be enacted and predictions for what might occur. After the change takes place, details of the process and a plan for improving the process are recorded. These small tests of change are intended to promote multiple tests of the same change, with the ultimate goal of producing quality organizational changes. The PDSA model did not initially appeal to the treatment team because it was unclear how the model could be used to promote larger changes. In retrospect, however, the treatment team learned that ad hoc changes without clear evaluation strategies would not be replicable or desirable for integration efforts at the clinic.

To track participant progress, additional documentation was added to participant medical charts and included monthly tracking of vital signs, progress notes related to participation in CPCI services and occasional meetings with providers to discuss patient progress in the program. The treatment team tracked participant information on tracking sheets included in the chart and on electronic spreadsheets. The treatment team was introduced to a registry by the CPCI program administrators, which was obtained and utilized previously by other participating counties. Ultimately, the treatment team determined that there was not sufficient time or staffing to implement the registry during this project. The treatment team predicted that the clinic would move to electronic health records during the CPCI process, which was thought would make patient information management more efficient. However, the CPCI program ended before electronic records were implemented.

Discussion

Although the primary outcome of interest in the CPCI project was health outcomes, the most significant outcomes experienced by PCCC were related to teamwork. Psychiatric and primary care providers worked closer together to improve patient health outcomes and all providers were educated about the importance of treatment mental and physical health simultaneously. Charting improvements, greater provider adherence to established standards of care for chronic illness and a renewed emphasis on promoting healthy behaviors during clinic visits all resulted from partnership between various providers at PCCC. Linkages to community providers, such as the dietitian, and to the mental health department could have been improved with additional funding and promotion of the CPCI program, although the brief partnerships PCCC did establish with these entities were reported to be beneficial by those patients completing the survey.

The establishment of a cohesive system for integrating the primary care clinic, the mental health department and outside agencies in Placer County would address many of the problems identified during the implementation of this project. For example, if clinic patients were informed at the time of clinic intake that they are eligible to participate in activities (such as symptom management groups) at the nearby ASOC site, patients may be more inclined to engage in those activities. Developing a budget for contracting with outside providers, such as diabetes educators, will allow clinic patients to participate in activities facilitated by these providers on an ongoing or as-needed basis if illness management becomes poor. Additionally, allocating funds for some patients to participate in community-based programs, like smoking cessation classes or gyms, may improve health outcomes among those patients who overutilize the clinic or emergency room.

Patient charting was identified in this project as an area where significant improvements can be made to improve future patient care. Providers reported that they do not have enough information about patients and the CalMEND team observed that patient information was not typically well-documented in existing charts. For those patients with chronic comorbid conditions, such as diabetes, labs were not always being ordered according to established standards of care. Employing a social worker to complete a more comprehensive psychosocial assessment at time of intake and using a computer-based registry may ameliorate many of the problems with charting and missed lab work. Conducting reviews of paper charts to identify participants for this project was very time-consuming; entering patient information in a registry upon intake would eliminate the need for this type of chart screening if a clinic wants to identify the most at-risk patients.

The short-term, pilot nature of the CPCI program did not allow for an intervention to be designed and tested with the level of rigor that a standardized intervention might provide. The PDSA model encouraged small tests of change, which would be repeated following modifications to service delivery. As such, PCCC was not able to design a specific intervention that could be tested over a period of several weeks or months, with treatment outcomes data that could be statistically analyzed. Participants at PCCC could begin participating in the program at any time during the program and were allowed to leave the program when they felt that their treatment goals were met. There was also no requirement from CPCI administrators to collect patient-level data at the start of the program and at time of discharge, so many opportunities to collect patient-level data were missed as part of the reporting process. A retrospective chart review could be completed by researchers with access to that information to determine patient-level outcomes, as desired. The implementation of electronic health records would make this process significantly easier. Additional ethics board approval and individual patient consent may be necessary to engage in patient-level data analysis.

Although the CPCI program was not measuring psychiatric outcomes, additional measures related to psychiatric health can easily be added in the primary care setting. For example, PCCC randomly administered 100 PHQ-9 forms (a 9-item self-reported scale to measure depressive symptoms) to clinic patients 1 business day and collected 54 fullycompleted forms without patient demographic information. From this test (which was completed as a PDSA), the clinic learned that 22% of patients may have moderate or severe depression. Similar tests of psychiatric measures could use identified data to ensure that those patients who report depressive symptoms are receiving appropriate psychiatric treatment. This measure can also be added to future interventions to track psychiatric outcomes secondary to physical health outcomes, as desired.

An unanticipated event in the CPCI project was participation in the 2011 NAMIWalk, a fundraising endeavor sponsored by the National Alliance on Mental Illness. Program participants learned about the walk during a clinic fitness group and approximately 10 participants worked together to create a team name and logo for the effort. The treatment team assisted with registration for the effort and participants paid what they could or raised money independently to participate. The 5k walk was attended by the team nurse and social worker, along with several clinic patients and their families. Some patients reported that they were nervous about trying to walk this distance, while others had been walking weekly with the CPCI team and felt physically prepared for the effort. All but 2 participants (one who stopped due to injury and one who stayed behind to accompany the injured participant) completed the entire walk.

Federal funding for the health treatment of low-income Americans is expected to expand dramatically through 2014 with the passage of the Affordable Care Act (http://www.healthcare.gov). Although programs providing this care vary widely, most programs will need to restructure and expand their programs to meet the growing needs of consumers. The role of social workers in the integration process is an area needing further research. The literature includes few practice social workers (MSW or LCSW) as first author, which can impact the usefulness of this literature for social workers and students. Improving effective health delivery systems for individuals with serious mental illness requires multidisciplinary teamwork, with contributions from medical professionals, behavioral/mental health professionals and consumers and family members. Social workers are uniquely suited to access these groups and have first-hand experience working in interdisciplinary settings. As researchers, social workers may be more experienced with research designs that promote consumer participation and investigate the relationships between consumers and providers, exploring in more detail the specific factors that contribute to successful illness management to decrease mortality.

Resources/ Inputs	Activities	Outputs	Outcomes ST = short term LT = long term	Impact
1	2	3	4	5
Proposed Work		Predicted Results		
-Physical location for MSW and RN to provide services -Contract between ASOC and MSW's employer to provide MSW to clinic -Contract between ASOC and clinic -Funding from DHCS for project -Agreement with nursing supervisor to allow RN to work with program -Administrative team and physicians identified at clinic -Contract with local diabetes educator -Clinic pharmacist agreed to participate as needed in patient education -ACIC and PDSA models	-Development of various forms (see Table 3) -Education of providers and staff about program -Chart screening -Referrals to program -Patient assessment -Provider assessment -Goal setting for providers and participants -Development of treatment activities -Collaboration with ASOC and peer navigator -Collaboration with patient families and other allied professionals	- Providers at clinic familiar with program purpose and goals and prepared to make referrals to program -Forms created by team in use in clinic -Nurse-led care coordination -Brief counseling provided to patients as needed -MSW consultations -Standards of care for patients with chronic illness adopted -Groups and activities for patients -Monthly reporting to funding source	-ST: 100 patients enrolled in program -ST: 100% of enrollees screened for metabolic risk factors -ST: 75% of enrollees set illness management goals -LT: 75% of program participants with body mass index below 30 -LT: 95% of participants with zero avoidable hospitalizations in past year -LT: Participants manage symptoms of illness independently to avoid excess medical visits -LT: Participants manage medications and keep appointments independently	-Decrease in health disparities among people with SMI -People with SMI experience more equality in society through pursuit of education, employment and other non-illness roles -People with SMI have higher quality of life -Decrease in stigma related to mental illness

Figure 3.1 Logic Model

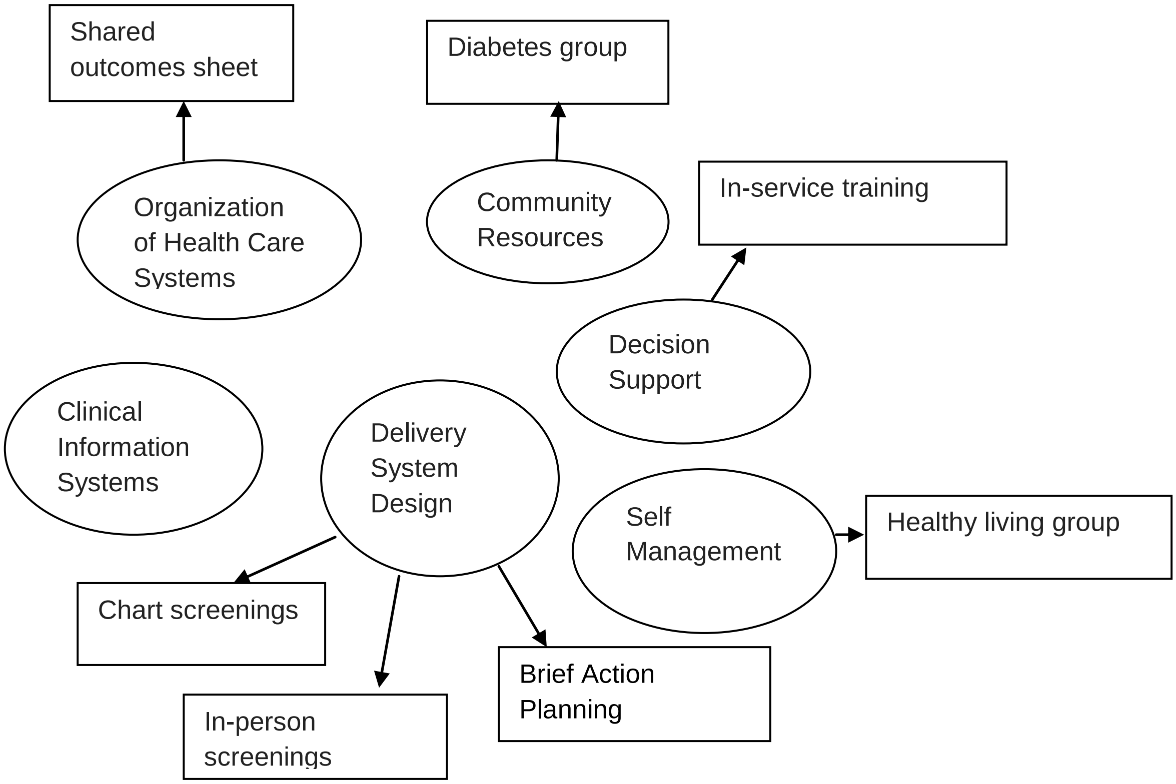

Figure 3.2 Clinic Uptake of Plan-Do-Study-Act (PDSA) Categories.

Table 3.1. Chart Screening Results

	July 2010 chart sample ($n = 25$)
Smoking status noted	71%
Substance use noted	62%
Current lab values noted	64%
Smokers counseled to quit at last clinic visit	75%
Self management goals documented	0%
Physical and mental health goals shared between providers	0%

Table 3.2. Patient, Provider and Administrator Goals

Problem	Reported by	Consequence or Outcome
Trouble communicating with providers	Patients	Poor adherence to treatment regimen
Missed appointments	Psychiatrists Primary care provider	Burden on psychiatric hospital
Poor adherence to diabetes treatment	Primary care provider	Repeat visits and hospitalizations
Not enough information in chart	Psychiatrist Primary care providers	Unable to provide adequate care and follow up

Table 3.3. Forms Created by PCCC Team

Name of form	Intended use of form	Intended user	Utilization
Provider referral form	To refer patients to CPCI program	Medical or psychiatric provider	Received over 50 referrals throughout program
CalMEND Evaluation	To collect psychosocial history from patient	CPCI social worker	Used during each assessment
CalMEND Initial Nursing Assessment	To collect medical/nursing information from patient	CPCI nurse	Used during each assessment
CalMEND Treatment Plan	To document patient's medical and/or psychiatric goals	CPCI nurse or social worker	All CPCI patients eventually completed a goal sheet
Talk to Your Doc	For patients to remember what to talk to their providers about during appointments	Patient	Not known
Pink Outcomes Sheet	To provide clinical data on patient progress to providers	Medical and psychiatric providers (document is filled in by CPCI team)	Placed in all CPCI charts, unknown whether providers read it
CalMEND Social Worker Progress Note	Document daily interactions between social worker and patient	Social worker	Completed at every visit and placed in medical chart
CalMEND Participation Summary	To summarize individual progress in CPCI program at termination of program	Social worker	Summaries were completed for everyone who was still in program in June 2011 at program end

Table 3.4. Interventions

Goal	Education	Support Group	Other Details
Weight loss	• Weekly groups on healthy living	• Weekly support group	• Individualized weight plan with RN • Food journaling • Walking group meet 2-3x weekly • 24-week module
Smoking cessation	• Weekly educational group	• Support received during weekly educational group	• Worked with primary care provider for nicotine patch or Chantix • 8-week module
Diabetes management	• Weekly groups on healthy living • Weekly groups on diabetes	• Weekly weight support group	• Dietitian provided diabetes and healthy living groups • ADA pamphlets and booklets were distributed • 14-week module
Mental illness symptom management	• Individualized sessions with social worker • Group sessions (3 total) about mental and physical health link	• 1:1 support provided by social worker and nurse	• Pharmacist came to speak to group about medication and mental wellness • 8-20 week module

CHAPTER 4

PRIMARY CARE-BASED EDUCATIONAL INTERVENTIONS TO DECREASE RISK FACTORS FOR METABOLIC SYNDROME FOR ADULTS WITH SERIOUS MENTAL ILLNESS: A SYSTEMATIC REVIEW

Background

Comorbidity of Serious Mental Illness and Chronic Physical Illness

Individuals with serious mental illness experience higher rates of comorbid physical health problems compared with the general population. Cardiovascular risk and metabolic risk are increased in individuals with schizophrenia (Bobes, Arango, Garcia-Garcia, & Rejas, 2010; Muir-Cochrane, 2006; Osborn et al., 2008), anxiety (Bonnett et al., 2005), and depression (Dunbar et al., 2008; Wassertheil-Smoller et al., 2004). Post-traumatic stress disorder is associated with metabolic syndrome risk in certain populations, including those living in impoverished urban environments (Weiss et al., 2011) and veterans (Heppner et al., 2009). Bipolar disorder has also been shown to be associated with metabolic syndrome (Cardenas et al., 2008; Salvi, D'Ambrosio, Rosso, Bogetto, & Maina, 2011). Risk factors for cardiovascular disease and metabolic syndrome include high blood pressure, large waist circumference, high triglyceride levels, low HDL cholesterol level, and high fasting blood sugar levels.

Causes of comorbidity in this population are thought to include psychiatric medication and lifestyle factors, such as diet and tobacco consumption. Atypical antipsychotic medication (AAP), commonly prescribed for patients with bipolar disorder or schizophrenia, increases risk for metabolic syndrome (Correll, Frederickson, Kane & Manu, 2008; McEvoy et al., 2005; Tarricone et al., 2006). Individuals with serious mental illness, especially schizophrenic disorders, also consume tobacco at higher rates than the general population (Bobes et al., 2010; Bonnett et al., 2005; Pack, 2008; Softic, Sutovic & Avdibegovic, 2009), which partially explains the increased risk of cardiovascular disease in this population. Bobes et al. (2010) found that tobacco users with serious mental illness were more likely to consume daily alcohol and caffeine and less likely to avoid salt and saturated fats. Sedentary lifestyle and unhealthy food consumption patterns, including higher daily intake of calories and cholesterol, are common among individuals with serious mental illness (Bonnett et al., 2005; Molarius et al., 2009).

Previous Interventions Tested

Many interventions intended to decrease risk factors for metabolic syndrome, both pharmacological and nonpharmacological, have been tested and described in the literature. Systematic reviews and meta analyses of interventions to control risk factors for metabolic syndrome (Alvarez-Jiminez, Hetrick, Gonzalez-Blanch, Gleeson & McGorry, 2008; Bradshaw, Lovell & Harris, 2005; Faulkner, Soundy & Lloyd, 2003; Gabriele, Dubbert, & Reeves, 2009; Megna, Schwartz, Siddiqui & Rojas, 2011; Papanastasiou, 2012; Roberts & Bailey, 2011; Tosh, Clifton, Bachner, 2011; Werneke, Taylor, Sanders, Wessely, 2003) indicate that both pharmacological and non-pharmacological (i.e., behavioral or educational) interventions can be effective in decreasing metabolic risk. The studies described in these systematic reviews generally take place in mental health settings, which may exclude those individuals with mental illness who receive treatment primarily in the primary care setting. Only one study included in these reviews (Druss et al., 2001) features a primary care-based intervention.

Mental Illness in Primary Care

Individuals with serious mental illness who are not psychiatrically hospitalized are treated for physical and sometimes mental health disorders in primary care settings. Serrano-Blanco et al. (2010) conducted a study with over 3,800 primary care patients and found that 29.9% had a diagnosis of major depressive disorder. Roca et al. (2009) reported on a similar study of more than 7,900 primary care patients and found that 29% of patients had been diagnosed with major depressive disorder. Fernandez et al. (2010) conducted a cross-sectional study in primary care and found that mood disorders are the second leading cause of quality-adjusted life years in the primary care setting. The loss of quality of life and prevalence of psychiatric disorders in primary care demonstrates a need for primary-care based interventions to decrease chronic comorbid conditions.

Objectives of Review

The prevalence of psychiatric disorders in primary care settings and the association between chronic mental and physical illness necessitates an exploration of primary care-based interventions to address these comorbid conditions. This review focuses on nonpharmacological, education-based interventions to address metabolic syndrome risk factors in patients with serious mental illness who are treated in the primary care setting. The emphasis is on metabolic syndrome risk factors because this combination of risk factors can lead to chronic illnesses and early mortality in this population (Cashin, Adams, & Handon, 2008). Education-based interventions are important because they empower the patient to manage his/her illness independently and expand the role of social workers in the primary care setting. According to Michie, Fixsen, Grimshaw and Eccles (2009), systematic reviews of behavior change interventions typically produce modest effects. The primary author was involved in a primary care-based complex intervention to improve metabolic risk factors among patients with serious mental illness and patient reports indicated that they found the educational components most beneficial for self-management of illnesses (Nover, 2013).

Methods

Literature Search

Electronic searches were conducted using MEDLINE, PsychINFO and the trials registry of the Cochrane Database of Systematic Reviews. The abstracts, titles, and index terms of studies were searched in MEDLINE and PsychINFO using the following keywords: “schizophrenia” OR “schizophrenic” OR “schizoaffective” OR “bipolar” OR “major depressive disorder” OR “posttraumatic stress disorder” OR “serious mental illness” AND “metabolic syndrome” OR “high blood pressure” OR “triglycerides” OR “cholesterol” OR “HDL” OR “waist circumference” OR “blood sugar” OR “blood glucose” AND “intervention” OR “randomized controlled trial” OR “quasi-randomized” AND “primary care.” All titles in the Cochrane Schizophrenia Register were scanned for possible Inclusion. Additionally, manual searches were conducted using references from literature found in the database search.

Inclusion and Exclusion Criteria

Studies were included if the population studied met the following criteria: adults ages 18 or older; diagnosed with one of the five mental illnesses which typically constitute serious mental illness (schizophrenia, schizoaffective disorder, post-traumatic stress disorder, major depressive disorder, or bipolar disorder); and had risk factors for metabolic syndrome, including large waistline, a high triglyceride level, a low HDL cholesterol level, high blood pressure, and high fasting blood sugar level. The study setting must have been in a primary care location. The study design must have been either a randomized controlled trial (RCT) or a quasi-experimental study. Study outcomes must include one of the risk factors for metabolic syndrome (e.g., blood pressure, waist circumference, triglyceride levels, blood glucose or [increase in] HDL).

Studies were excluded if:

- the population studied was younger than 18 years old or did not have a diagnosis of a serious mental illness or risk factors for metabolic syndrome;
- they were conducted in an inpatient or mental health-based setting;
- they were not an RCT or quasi-experimental study, and
- the outcome of the study did not include one of the risk factors for metabolic syndrome.

Results

Our initial systematic search of databases MEDLINE and PsychINFO (which was not limited by setting) yielded 316 results. When "primary care" was added to the search, we found 19 additional results. A title search of the Cochrane Database of Systematic Reviews resulted in the identification of two systematic reviews; one review had no included studies and the other had six studies included in the quantitative synthesis. These studies were also identified in database searches and are part of the 363 total studies identified below. Manual searches from reference lists of articles found in the database search were conducted and 90 studies were found. A search of grey literature was conducted to decrease risk of publication bias using Open Grey (http://www.opengrey.eu) with the same MESH terms, but no additional studies were found. A total of 363 unique studies were found from the collection of searches after duplicates were removed. The titles of all 363 of these results were reviewed separately by each reviewer and 303 were excluded based on setting or nature of intervention. There were no disagreements during this process. The remaining 60 articles were reviewed in abstract and 30 were excluded based on study design or setting. Full-text reviews were conducted by both reviewers CN and SJ for the remaining 30 of the studies and reviewers agreed that no studies met inclusion criteria; all studies were excluded. Figure 4.1 provides a diagram of how studies were excluded. Table 4.1 lists all of the studies reviewed in full-text from database searches and manual searches with reasons for exclusion.

Through the manual search, 13 systematic reviews were identified for further review of citations. Table 4.2 provides a list of the 13 systematic reviews. These reviews examined a total of 221 studies. Raters CN and SJ independently screened titles or abstracts from these studies and all 221 studies were rejected for not meeting the inclusion criteria.

Discussion

Although we identified no studies that met the a priori inclusion criteria, there were 16 studies identified during database and manual searches that examined similar interventions in nonprimary care settings. These studies (listed in Table 4.3) demonstrate that controlled trials with education interventions to improve physical health can be conducted with individuals with serious mental illness; the systematic reviews shown in Table 4.2 indicate that these interventions can be effective. Also, it should be recognized that no evidence of effective primary care-based studies does not mean that such intervention is ineffective; further studies are needed in this area to determine whether such interventions can be effective in primary care settings.

Of the 16 similar studies of educational interventions, reviewers identified six studies that may be able to be implemented in the primary care setting (Brar et al., 2005; Khazaal et al., 2007; Kwon et al.; 2006; McKibbin et al., 2006; Skrinar, Huxley, Hutchinson, Menninger & Glew, 2005; Weber & Wyne, 2006). Those studies of interventions that might not be appropriate for primary care include interventions that were too long (Chafetz et al., 2008; Fosberg et al., 2008; Poulin et al., 2007), provided products or services that might not be available in primary care settings (Brown, Goetz, Van Sciver, Sullivan & Hamera, 2006; Jean-Baptiste et al., 2007; Mauri et al., 2005; McReadie et al., 2005; Rotatori, Fox & Wicks, 1980) or required patients to have not yet developed physical risk factors prior to the intervention (Evans, Newton & Higgins, 2005).

An examination and discussion of the details of the interventional components of the studies possible in primary care identified in Table 4.3 is warranted here, because future studies in the primary care setting must adequately describe their interventions in order to be replicated or subject to systematic review. The methodological quality of these studies is summarized in Table 4.4. All of these studies provided explicit descriptions of the intervention components; McKibbin et al. (2006), Weber and Wyne (2006) and Kwon et al. (2006) also described session-by-session content of the intervention in table and narrative format; Brar et al. (2005) described sessions in narrative format only. Khazaal et al. (2007) used an intervention previously developed by one of the authors, so readers can review that intervention in detail elsewhere, but it was not described in detail in the article. Srkinar et al. (2005) provided a description of the length of the educational intervention and a list of topics, but no sequence or table of sessions was provided. All studies identified as possible in primary care included an intervention element that was not education (e.g., food tasting, exercise sessions, provision of pedometers), so the effectiveness of the educational component alone may not be able to be determined from these studies; however, complex interventions are very common in behavioral health research (Craig et al., 2008).

Missing from the descriptions of many articles reviewed in this study were details about who implemented an intervention and where it took place. A number of studies stated that participants were recruited from a certain hospital or facility (e.g., Khazaal et al., 2007 and Skrinar et al., 2006), but it was not clear from the articles whether the actual educational intervention took place in the hospital or in an outpatient setting. Of the studies identified as possible in primary care, only Khazaal et al. (2007), Kwon et al. (2006) and Weber and Wyne (2006) provided a clear description of who was implementing the intervention, so it is not clear if academic researchers, dietitians, medical professionals or social workers were implementing the other interventions. It is also not clear in several studies, including Srkinar et al. (2005) and Khazaal et al. (2007), who was collecting any of the data, which could affect participant outcomes (e.g., if the patients had an existing relationship with the data collectors) and may be subject to detection bias if assessors were not blind to allocation.

Health outcomes from complex behavioral interventions can be nebulous because multiple factors affect outcomes; however, the RCT format of the studies discussed here improves study rigor (Torgerson & Torgerson, 2008). Two studies (Skrinar et al., 2005; Weber &Wyne, 2006) resulted in no statistically significant reduction in metabolic risk factors, with both studies citing small sample sizes and other factors (e.g., lack of transportation, motivation) as being possible explanations for these results. Khazaal et al. (2007) found limited reduction in weight and BMI in the experimental group. Some subjects' medications were also changed during the study, although the authors used statistical methods to account for the possible impact of these changes (Khazaal et al., 2007). McKibbin et al. (2006) and Kwon et al. (2006) reported significant reductions in metabolic syndrome risk factors (weight, BMI) as a result of their interventions. Kwon et al. (2006) also observed significant weight loss in the control group, which suggests possible threats to internal validity in the design. These authors do note that several members of the experimental group lost a greater percentage of body weight than anyone in the control group.

Future Research

The authors were unable to identify rigorous, primary care-based interventions to address physical illness among individuals with mental illness. As the literature expands to include primary care-based interventions, additional systematic reviews and meta-analyses are warranted to assess effectiveness in this setting. Systematic reviews of high-quality RCTs are the most rigorous form of effectiveness research, as single RCTs can have weak designs or biased results (Torgerson & Torgerson, 2008). Quality assurance protocols, such as the CLEAR NPT checklist for nonpharmacological trials (Boutron et al., 2005), which provides a checklist for components of quality in a study, should be incorporated into future studies in this area to provide standardized guidelines for making effectiveness claims.

Adequate reporting of interventional content and components is also essential to the expansion of literature in this subject area and groups such as the Workgroup for Intervention Development and Evaluation Research (WIDER) have developed suggestions for intervention reporting (http://interventiondesign.co.uk). WIDER advocates for the successful adoption of behavior change interventions and the expansion of CONSORT (http://www.consort-statement.org) and APA guidelines to allow for improved reporting of these interventions. In behavioral intervention research, theories regarding the specific mechanism of change within an intervention should be utilized during the development of the intervention and should be described in the final report (Michie et al., 2009).

Social work researchers and direct service social workers in health care settings have an opportunity to design and implement high-quality behavioral and educational programs for individuals with serious mental illness using the criteria described above. Social workers are among the few professionals in health care settings who have the skills and opportunity to work closely with the patients most in need of health-related behavior change interventions. Interventions to decrease metabolic syndrome risk factors have been demonstrated to be successful in mental health settings, but the primary service in mental health settings is mental health. Primary care-based interventions are important for conveying the message that the focus is on physical health, even if the population is comprised of individuals with serious mental illness. Social workers or social work researchers participating in health-focused interventions that do not follow published guidelines for research and reporting of RCTs are missing an important opportunity to enhance systematic reviews of literature about this population.

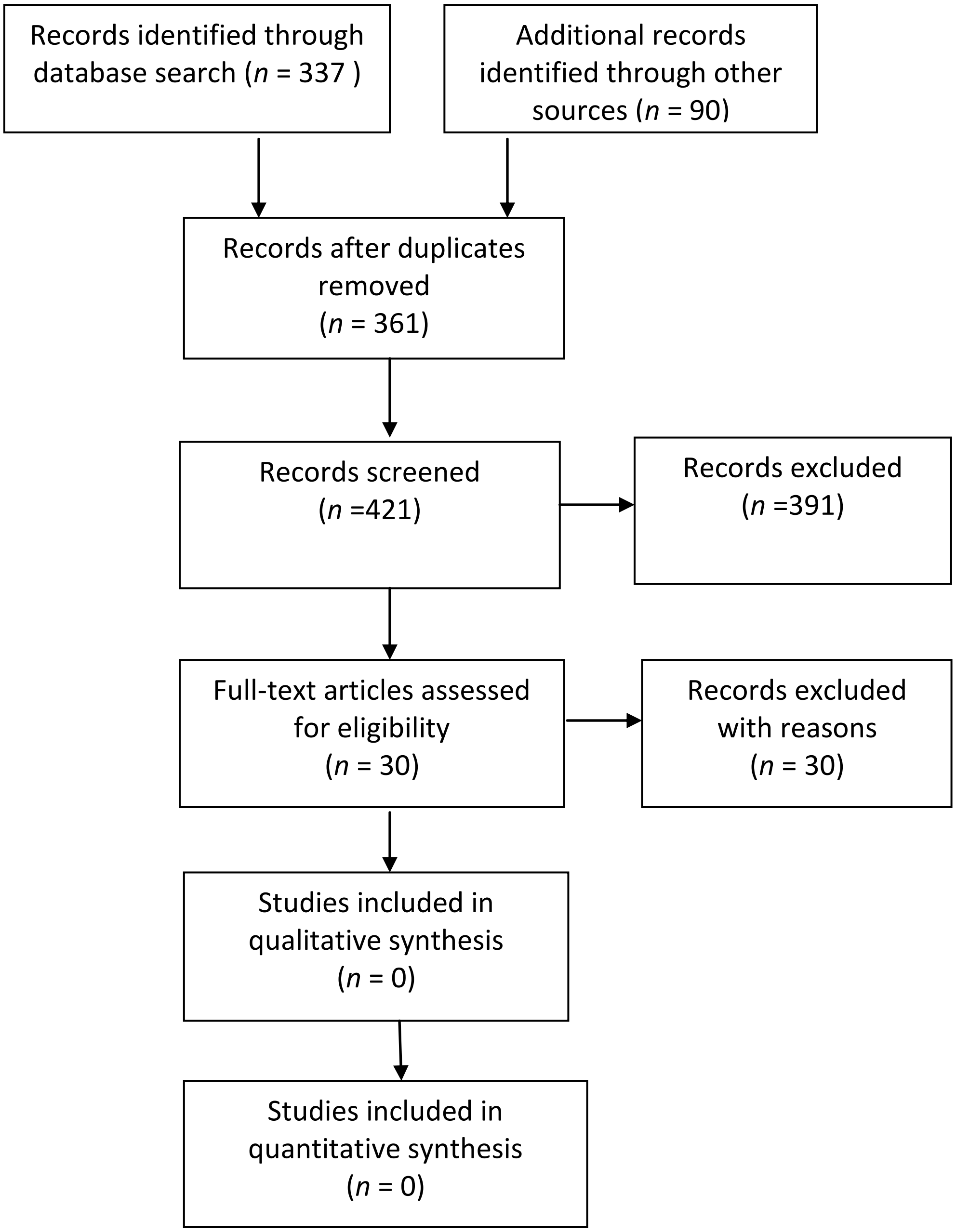

Figure 4.1 Study Exclusion Diagram

Table 4.1 Studies Reviewed in Full-Text

Authors, Year	Reason for Exclusion
Alvarez-Jiminez et al., 2006	Partially pharmacological intervention, mix of different settings (including primary care).
Attux, Martini, de Araujo, Roma, Reis & Bressan, 2011	Not RCT; not primary care (mental health services)
Ball, Coons & Buchanan, 2001	Not primary care (both arms from outpatient MH services); not randomized
Bradshaw, Lovell & Harris, 2010	Not an RCT, not primary care
Brar et al., 2005	Not primary care
Brown, Goetz, Van Sciver, Sullivan & Hamera, 2006	
Centorrino et al., 2006	Not primary care; no control group
Chafetz, White, Collins-Bride, Cooper & Nickens, 2008	Not primary care
Druss, Rohrbaugh, Levinson & Rosenheck, 2001	Wrong outcome
Evans, Newton & Higgins, 2005	Not primary care
Fosberg, Bjorkman, Sandman & Sandlund, 2008	
Jean-Baptiste et al., 2007	
Jones, Basson, Walker, Crawford & Kinon, 2001	Pharmacological intervention
Kalarchian et al., 2005	Not an RCT, not primary care
Khazaal et al., 2005	Not primary care
Kilbourne et al., 2008	Not primary care; outcome not physical health
Kwon et al., 2006	Not primary care
Littrell, Hilligoss, Kirshner, Petty & Johnson, 2003	Not primary care, partially pharmacological
Mauri et al., 2008	Not primary care
McKibbin et al., 2006	
Ohlson, Treasure & Pilowsky, 2004	Not RCT; not primary care
Park, Usher & Foster, 2011	Review paper
Pendlebury, Bushe, Wildgust & Holt, 2007	Not primary care, no control group
Perlman et al., 2010	Not RCT; not primary care
Poulin et al., 2007	Not primary care
Rotatori, Fox & Wicks, 1980	
Skrinar, Huxley, Hutchinson, Menninger & Glew, 2005	
Vreeland et al, 2003	Not primary care, not randomized
Weber & Wyne, 2006	Not primary care
Weber & Nelson, 2008	Not RCT; not primary care

Table 4.2 Systematic Reviews

Authors, year	Title	Studies Reviewed	Conclusions
Ivarez-Jiminez, Hetrick, Gonzalez-Blanch, Gleeson & McGorry, 2008	Non-pharmacological management of antipsychotic-induced weight gain: Systematic review and meta-analysis of randomized controlled trials	10	Individual and group interventions, cognitive behavioral therapy and nutritional counseling were more effective than treatment as usual
Bradshaw, Lovell & Harris, 2004	Healthy living interventions and schizophrenia: A systematic review	16	Inconclusive based on poor quality of studies reviewed
Cabassa, Ezell & Lewis-Fernandez, 2010	Lifestyle interventions for adults with serious mental illness: A systematic literature review	23	Behavioral interventions generally showed improvement in metabolic syndrome risk factors
Caemmerer, Correll & Maayan, 2012	Acute and maintenance effects of non-pharmacological interventions for antipsychotic induced weight gain and metabolic abnormalities: A meta-analytic comparison of randomized controlled trials	18	Behavioral interventions effectively prevented and reduced weight gain in outpatients agreeing to participate in trials. Nutritional and cognitive behavioral interventions were effective.
Cimo,Stergiopoulis, Cheng, Bonato & Dewa, 2012	Effective lifestyle interventions to improve type 2 diabetes self management	4	Diabetes education is effective when it includes diet & exercise & design should address cognition, motivation & weight gain
Faulkner, Soundy & Lloyd, 2003	Schizophrenia and weight management: A stematic review of interventions to control weight	16	All behavioral interventions produced small reductions in, or maintenance of, weight
Gabriele, Dubert & Reeves, 2009	Efficacy of behavioural interventions in managing atypical antipsychotic weight gain	16	When behavioral interventions were initiated at the start of atypical antipsychotic (AAP) treatment, weight loss was achieved. Insulin regulation & A1c (metaolic syndrome risk factors) were also improved
Megna, Schwartz, Siddiqui & Rojas, 2011	Obesity in Adults with Serious and Persistent Mental Illness: A review of postulated mechanisms and current interventions	71	Non-pharmacological interventions are promising, but only show low to medium effect size
Papanastasiou, 2012	Interventions for the metabolic syndrome in schizophrenia: A review	15	Behavioral interventions showed benefit, but study design (non-RCT) did not prove one intervention superior to another
Roberts & Bailey, 2010	Incentives & barriers to lifestyle interventions for people with severe mental illness: A narrative synthesis of quantitative, qualitative & mixed methods studies	14	No studies identified that specifically focus on incentives and barriers
Tosh. Clifton, Mala & Bachner, 2010	Physical health care monitoring for people with serious mental illness	0	No studies identified that specifically focus on incentives and barriers
Tosh, Clifton & Bachner, 2011	General physical health advice for people with serious mental illness	6	Health advice could lead to greater access of services but ineffective advice may be a waste of resources
Werneke, Taylor, Sanders & Wessely, 2003			No RCTs identified, but interventions appear to be effective

Table 4.3 Similar Interventions Not in Primary Care Settings

Authors, year	Title	Setting	Description of Intervention	Length of Intervention	Appropriate for Primary Care
Brar et al., 2005	Effects of behavioral therapy on weight loss in overweight & obese patients with schizophrenia or schizoaffective disorder	Mental health	Manual-based behavioral techniques for weight loss	14 wks	Yes
Brown, Goetz, Van Sciver, Sullivan & Hamera, 2006	A psychiatric rehabilitation approach to weight loss	Mental health	Goal setting, social support, skills training, more frequent visits with providers, meal replacements	12 wks	No
Chafetz, White, Collins-Bride, Cooper & Nickens, 2008	Clinical trial of wellness training: Health promotion for severely mentally ill adults	Short term residential treatment	Promoting individual skills in self management of illness	12 mths	No
Evans, Newton & Higgins, 2005	Nutritional intervention to prevent weight gain in patients commenced on olanzapine: A randomized controlled trial	Mental health	Nutrition education sessions	12 wks	No
Fosberg, Bjorkman, Sandman & Sandlund, 2008	Physical health –a cluster randomized controlled lifestyle intervention among persons with a psychiatric disability & their staff	Residential mental health	Curriculum including motivation, food content, stress and fitness	12 mths	No
Jean-Baptiste et al., 2007	A pilot study of a weight management program with food provision in schizophrenia	Mental health	Weekly group sessions with dietitian & psychiatrist, pedometers and food (or reimbursement) provided, individual nutrition support, grocery store visit	16 wks	No
Khazaal et al., 2005	Cognitive behavioral therapy for weight gain associated with antipsychotic drugs	Mental health	Cognitive behavioral therapy	12 wks	Yes
Kilbourne et al., 2008	Improving medical and psychiatric outcomes among individuals with bipolar disorder: A randomized controlled trial	Mental health	Self-management sessions on bipolar disorder, promotion of provider engagement, education related to cardiovascular disease	4 wks	Yes
Kwon et al., 2006	Weight management program for treatment-emergent weight gain in olanzapine-treated patients with schizophrenia or schizoaffective disorder: A 12-week randomized controlled trial	Mental health	Educational program with food diary, nutrition education, exercise management	12 wks	Yes
Skrinar, Huxley, Hutchinson, Menninger & Glew, 2005	The role of a fitness intervention on people with serious psychiatric disabilities	Mental health	Exercise, weekly education seminars	12 wks	Yes
Weber & Wyne, 2006	A cognitive behavioral group intervention for weight loss in patients treated with atypical antipsychotics	Mental health	Based on Diabetes Prevention Project (DPP) program to prevent diabetes	16 wks	Yes

Table 4.4 Methodological Quality of Studies Appropriate for Primary Care

Author, Date	Type of Study	Sample Size	Power Analysis Described	How Participant Characteristics Described	Review Board Approved	Randomization Process Described	Comparator	Blinding Described	Evidence Base for Intervention Described	Statistical Analysis Described
Brar et al., 2005	RCT	71	Yes	Narrative	Yes	No	Monthly weight checks and encouragement of weight loss	No	Yes; table with previous studies	Yes (paired t-tests, logistic regression, ANCOVA, Cochran-mantel-Haenszel)
Khazaal et al., 2005	RCT	61	No	Table	Yes	No	Control group with brief nutritional education	No	Yes; previous "Apple Pie" study	Yes (t-tests, Chi-square, MANOVA, MANCOVA, Fisher's exact significance tests, Cochran's Q test
Kwon et al., 2006	RCT	48	Yes	Table	Yes	No	Routine care with verbal diet and weight management recommendations. Control group also given food and exercise diaries	No	No	Yes (t-test and ANCOVA)
McKibbin et al., 2006	RCT	64	No	Table	Yes	No	Usual care with 3 health-related brochures distributed	No	Yes; previous DART study and theoretical orientation	Yes (ANOVA, t-tests, chi-square
Skrinar, Huxley, Hutchisn, Menninger & Glew, 2005	RCT	20	No	Table	Yes	No	Waiting list control group	No	Yes; cites literature about role of exercise in weight mgmt.	Yes (ANOVA)
Weber & Wyne, 2006	RCT	17	No (pilot study)	Table	Yes	No	Control group received treatment as usual and were weighed every 4 weeks.	Yes	Yes; previous Diabetes Prevention Project	Yes (t-test, statistical significance set at 0.05)

CHAPTER 5

CONCLUSION

Individuals with serious mental illness have worse physical health outcomes than those without mental illness (Bobes, Arango, Garcia-Garcia, & Rejas, 2010; Bonnett, 2005). Comorbid health problems in this population result from poor diet and exercise habits (Bonnett et al., 2005; Bots, Tijhuis, Giampaoli, Kromhout, & Nissinen, 2008; Brunero & Lamont, 2009), as well as treatment factors, such as side effects from treatment with psychotropic medication (Muir-Cochrane et al., 2008). Health disparities in this population can also be explained through an examination of socioeconomic status and the impact of the label of mental illness on illness management.

Secondary health problems in this population persist when individuals do not receive adequate treatment for physical and mental health conditions through their regular medical and psychiatric providers. Presently in the U.S., psychiatric and medical providers are often working in separate treatment facilities and there are no federal requirements to link medical and psychiatric care for patients with comorbid conditions. Therefore, patients with chronic comorbid conditions often slip through the cracks in the health system, resulting in poor management of health conditions, even when psychiatric symptoms are well-controlled. Literature in this area describes inadequate screening and treatment for chronic comorbid conditions in traditional behavioral health and primary care settings.

To appropriately address the healthcare needs of individuals with comorbidities, mental and behavioral health treatment providers should partner with medical care providers (and vice versa), preferably in the same physical location. With this arrangement, patients who are in need of multiple provider services would be able to more conveniently access care and decrease barriers inherent in the referral process, such as transportation, child care and appointment scheduling. Such partnerships also provide the opportunity for all providers to communicate about medication changes and side effects, as well as to monitor changes in physical health that may result from psychiatric treatment.

The key to creating effective, patient-centered care environments for patients with serious mental illness is to design care systems that motivate patients to participate and can be more easily accessed than traditional care programs. Social workers--who are generally already involved in these patients' lives--play an important role in empowering individuals to manage their own illnesses, with the support of their medical and psychiatric providers. Whereas patients with chronic illnesses may not see much hope for their health, social workers can envision a future for people that they might not have envisioned for themselves. Holding hope for these patients and sharing this hope for healthier futures can make an impact on patients' lives and health outcomes.

The CPCI program at Placer County Community Clinic is one example of a primary care-based program that utilized a social worker to coordinate a partnership program between the local mental health department and primary care clinic. The program promoted patient goal-setting and helped patients achieve physical and psychiatric health goals through coordination of care between providers. Program participants also engaged in support, educational and fitness groups, as well as activities like cooking demonstrations and fitness event planning. Outcomes of the program at the primary care clinic (where the psychiatrist was colocated on site) included improved quality assurance and documentation of patient health status, along with improvements in patient-provider communication and access to care.

Additional program outcomes, reported by patients in the qualitative portion of this dissertation (Chapter 2), included improved social support, self-esteem and the perception that providers were cooperating more with each other to improve care. Coordination with the patients themselves--where providers consult with patients about patient health goals and concerns--was also reported to be very important to participants in this study. These outcomes can be contrasted with patient reports from the same study, which indicate that patients felt like they were abnormal and not prioritized in their typical primary care experiences. Participants describing usual care experiences also reported that they were unlikely to follow through with care recommendations that they think may be harmful or ineffective.

Although mental health-primary care partnerships and educational or behavioral interventions can result in improved coordination of care and patient satisfaction, randomized controlled trials of such interventions described in the literature do not take place in the primary care setting. A review of interventions to improve patient health in primary care shows that primary care-based interventions are typically pharmacological, while behavioral or educational interventions typically occur in non-primary care settings. While it can be assumed that such interventions have largely been conducted in mental or behavioral health settings because those settings employ behavioral health professionals (social workers, psychologists), the prevalence of mental illness in primary care calls for more educational or behavioral interventions in that setting to improve physical health outcomes.

Findings from the studies in this dissertation demonstrate the need for interventions to improve care for individuals with mental illness in the primary care setting. Policies such as Medicaid same-day billing restrictions, which prevent patients from seeing more than one provider on the same day, unfairly place individuals with limited transportation and scheduling options at a disadvantage and promote poor treatment adherence. Patients and providers in an integrated setting with these billing restrictions are forced to prioritize one type of problem over another, which defeats the purpose of providing integrated or colocated care. Providers working in separate settings may not be aware that a patient already saw another provider that day and billing mistakes or denials may occur, causing additional stress for the patient.

Further consideration should be given to other policies regulating what type of professionals can bill for services in primary care. This author coordinated the implementation of the CPCI program in Placer County while employed as post-Master’s social worker (MSW), but not a licensed clinical social worker (LCSW). Also providing mental health services in that clinic was a marriage and family therapist (MFT). These providers were working in the primary care setting but needed to be contracted through the mental health department because there was no reimbursement for services provided by MSWs or MFTs at that time. These professionals (along with numerous other similarly credentialed professionals in other states) are capable of implementing interventions related to behavior change in the primary care setting, so policies supporting reimbursement of such professionals should be revised.

Social work practice is impacted by the findings from these studies because social workers are asked in healthcare settings to work with patients who do not adhere to their treatment regimens, who frequently utilize emergency services and who are diagnosed with a mental illness. Patients in all of these circumstances can benefit from education, support and coordination of care to meet patient needs. Nonadherence to treatment regimens, for example, may not be caused by patient indifference or unwillingness to follow through with care, yet most physicians do not have the time to sit down and talk with the patient about their barriers to care. Social workers in healthcare settings can assist with this process by conducting patient needs assessments and working with the entire treatment team to improve care and access for patients with unmet needs.

The studies described in this dissertation all examine projects or interventions in primary care that aim to improve health outcomes for individuals with serious mental illness and fill in gaps in the literature. The qualitative interviews described in Chapter 2 are the first such interviews in the literature that describe patient responses to an augmented care program in primary care. Future qualitative research with patients should explore how each member of the care team benefitted patients, which would help allocate human resources more efficiently. Chapter 3 delineates several challenges and benefits of a mental health-primary care partnership, which future researchers and practitioners can use to guide the implementation of similar projects in other settings. Reports about how similar projects were implemented in nonrural settings (urban, suburban, frontier) and the role of social workers in those settings will further enhance the literature. The review described in Chapter 4 found no included studies, suggesting the need for future projects in the primary care setting to be designed as randomized or quasi-experimental trials to evaluate the efficacy of educational interventions for this population in primary care.

The research contained herein also affects social work education by delineating the various roles that social workers may play in a healthcare setting and by describing the impact of educational and behavioral interventions on health outcomes. Social work students with a clinical focus should be aware of how social work fits into multidisciplinary healthcare teamwork and learn assessment and treatment planning skills to help patients with comorbid conditions manage their care more effectively. Mezzo- or agency-level assessment skills are also important when it comes to developing changes in delivery system design, such as those described in Chapter 3. Students who plan to work in macro settings can benefit from this research by understanding how federal policies related to healthcare, mental health and billing affect agency funding and, ultimately, patient care and health outcomes. Understanding the relationship between chronic mental and physical health conditions and how treatment affects outcomes is essential for future social work practitioners to promote patient-centered care.

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