Outcome differences in the wellness management and recovery program: a comparison of community mental health centers and consumer-operated service sites

Joseph A. Reed
University of Toledo

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entitled

Outcome Differences in the Wellness Management and Recovery Program: A
Comparison of Community Mental Health Centers and Consumer-Operated Service Sites

by

Joseph A. Reed

Submitted to the Graduate Faculty in partial fulfillment of the
requirements for the Master of Arts Degree in Psychology

_________________________________________________
Wesley A. Bullock, PhD, Committee Chair

_________________________________________________
Sarah E. Francis, PhD, Committee Member

_________________________________________________
Mojisola F. Tiamiyu, PhD, Committee Member

_________________________________________________
Patricia R. Komuniecki, PhD, Dean
College of Graduate Studies

The University of Toledo

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An Abstract of

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The Ohio Wellness Management and Recovery (WMR) group treatment program is designed to empower its participants to set personal recovery and wellness goals, to more actively collaborate with medical and psychological professionals, and to adopt overall healthier lifestyles. The WMR program has been implemented at 18 traditional Community Mental Health Center (CMHC) sites and seven Consumer-Operated Service (COS) sites across greater Ohio. This study utilized a dataset of 1,462 participants with WMR outcome data to assess outcome differences between and within CMHC and COS sites. Outcome differences were examined for the Mental Health Recovery Measure (MHRM; Young & Bullock, 2003), a 30-item questionnaire, with eight domains, that assesses overall recovery from mental illness, and the Symptom Distress Scale, a 15-item
scale on the Ohio Adult Consumer Form that assesses symptom distress. We found no significant outcome differences between CMHC and COS sites on the MHRM or the Symptom Distress Scale. Significant outcome differences were, however, found within CMHC sites on the MHRM Self-Empowerment domain. These findings suggest that to the degree that there are outcomes differences between WMR implementation sites, the outcome differences within any group of COS sites or within any group of CMHC sites are greater than any outcome differences between CMHC and COS sites as a whole. In turn, this suggests that these differences may be due to unique factors endemic to each site rather than to general or common factors across COS sites or common factors across CMCH implementation sites. The finding that WMR participates at all sites (COS or CMCH) had significant improvements in mental health recovery as measured by the MHRM combined with decreases in Symptom Distress of the same magnitude for both COS and CMHC sites suggests two encouraging possibilities: 1) All of the sites are implementing the WMR program to an effective level of program fidelity, and/or 2) The power of the WMR program curriculum to promote mental health recovery change is robust to minor variations in program implementation associated with unique aspects of different sites.
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Chapter One

Review of the Literature

Severe Mental Illness

Severe mental illness (SMI) refers to a category of mental disorders which share the characteristics of being long-term, chronic, and disabling. SMI includes diagnoses of schizophrenia, schizoaffective disorder, delusional disorder, bipolar disorders, and major depression (Attkisson, Cook, & Hohmann, 1992). Having a SMI is not a rare condition; an estimated 9.6 million, 4.1 percent, of US adults were diagnosed with a SMI in 2012 (NIMH, 2015a). The total annual cost of SMI in the United States (US) in 2002 was estimated to be 327.6 billion dollars, with 100.1 billion attributed to health care, 24.3 billion to disability, and 193.2 billion to loss of earnings (NIMH, 2015b).

Individuals with SMI present with the same kinds of symptoms as individuals without SMI, e.g, depressed mood, anhedonia, insomnia. Common signs of SMI include social withdrawal, memory impairment, dissociation, changes in sleep patterns, substance use, and changes in hygiene (APA, 2015). Individuals with SMI are differentiated from individuals without SMI due to the chronicity of their symptoms and the disability resulting from their symptoms (Slade, Powell, & Strathdee, 1997; NIMH, 2013). A major depressive disorder would not constitute a SMI for an individual who recovers in 16 weeks; a long term major depressive disorder resulting in disability would constitute a SMI (APA, 2015).

In addition to the signs and symptoms associated with SMI, there are co-occurring social problems that exacerbate the deleterious effects of SMI. As compared to individuals without SMI, those with SMI report poorer overall physical health
(Cunningham, Peters, & Mannis, 2013; Lawrence & Kisely, 2010), higher rates of poverty and homelessness (Attkisson et al., 1992; Herman et al., 2011; Topor et al., 2014), and higher rates of criminal victimization (Maniglio, 2009). Individuals with SMI also present with high rates of comorbid substance use disorders, which worsen the direct effects of SMI, as well as the indirect, social effects of SMI, e.g., disability (Drake, Mueser, Brunette, & McHugo, 2004).

The social effects of SMI can be as debilitating as the symptoms of SMI. Individuals with SMI experience “stigma”, which can be defined, in general terms, as a mark of otherness or difference, as a result of their illness (Goffman, 1968; Harrison & Gill, 2010). Stigma is characterized by Finzen (1996) as a “second illness” (as cited by Schulze & Angermeyer, 2003) and includes the negative stereotypes and prejudices held about individuals with SMI (Yanos, Roe, & Lysaker, 2010; Yanos, Roe, West, Smith, & Lysaker, 2012). These stereotypes and prejudices are often internalized by individuals with SMI and become part of their “illness identity” (Yanos et al., 2010). A review of the phenomenological literature on the experience of individuals with SMI reported themes of frustration, helplessness, shame, self-hatred, burdensomeness, and alienation (Zolnierek, 2011). Thus, the debilitating effects of SMI extend well beyond the direct effects of the symptoms of SMI.

Individuals with SMI have also suffered as a result of ineffective treatment in the mental health care system, by both the system as a whole and by mental health professionals within the system (Klerman, 1977; Unzicker, 1989). Prior to the 1960s, SMI was treated almost exclusively in state psychiatric hospitals, usually pharmacologically with non-specific sedatives (Drake et al., 2003). After World War II
(WWII), the general condition of US psychiatric hospitals and the treatment of patients within the hospitals were identified as inhumane, and by the 1960s, national reform of the mental healthcare system had gained political traction (Becker, 1976; Klerman, 1977; Rome, 1977).

**Community Mental Health**

The deinstitutionalization movement in the mid-1960s was a result of a convergence of psychiatric and social developments. The emergence of psychopharmacology as a field of study in the 1940s and 1950s (Klerman, 1977) and the manufacture of chlorpromazine for the treatment of psychosis in the 1950s brought about major improvements in the pharmacological treatment of SMI (Drake et al., 2003). Though reports of positive treatment outcomes for individuals with SMI shifted public opinion on the treatability of SMI, there was growing skepticism of the ability for state psychiatric hospitals to meet the needs of people with SMI (Rome, 1977).

At the close of World War II, the social cost of mental illness had become apparent. The National Institute of Mental Health (NIMH) was established in 1946, in part, in response to the recognition that many of the men turned away from enlistment during WWII were mentally ill (Rome, 1977). An American Medical Association (AMA) survey found that, in 1946, on average, per day, there were 538,629 inpatients residing in state psychiatric hospitals, which cost an estimated $200 million per year (Rome, 1977). In addition, the reality of life inside psychiatric hospitals for individuals with SMI had reached mainstream consciousness with publications like *The Snake Pit*, by Mary Jane Ward, and *Asylums: Essays on the Social Situation of Mental Patients and Other*
Inmates, by Erving Goffman (Klerman, 1977). Thus, mental illness had come to be recognized as an immediate political and social problem.

In 1955, the US congress called for an evaluation of the current practices for treating the mentally ill. In response, the AMA and the American Psychiatric Association formed the Joint Commission on Mental Illness and Health, whose mission was to evaluate and recommend changes to current treatment practices for the mentally ill. Ultimately, the commission prescribed greater involvement of community mental health services and recommended that the majority of mental health problems be treated in the community rather than in state psychiatric hospitals (Becker, 1976). The Short-Doyle Act of 1957 (Harris, 1973) and the Federal Community Mental Health and Retardation act of 1963 (Becker, 1976) incentivized states to develop and staff community mental health centers as envisioned by the commission. Throughout the 1960s the number of inpatients in state psychiatric hospitals dropped dramatically (Klerman, 1977) and by 1974, the number of inpatients totaled less than 213,000 (Ozarin, 1976). As intended, the deinstitutionalization movement gave rise to an increase in community outpatient services and a decrease in public inpatient services (Klerman, 1977).

Though the deinstitutionalization movement was successful in removing individuals with SMI from inhumane hospital environments, many individuals with SMI ultimately ended up in complementarily inhumane community environments (Klerman, 1977). Despite congressional legislation, communities were not equipped to meet the needs of individuals with SMI (Stroul, 1989). Many former psychiatric hospital inpatients lived “lives of quiet desperation” in impoverished, dangerous neighborhoods, with limited income (Klerman, 1977). Basic needs, i.e., food, water, shelter, medical care,
were often unmet and some individuals with SMI became homeless (Stroul, 1989). Pharmacological treatment, the primary treatment for individuals with SMI, was often poorly prescribed and poorly managed (Klerman, 1977). An implicit policy of “noninstitutionalization” was adopted, whereby individuals with SMI were prevented from entering hospitals, unless absolutely necessary (Stroul, 1989).

If the overall deleterious effects of SMI are greater than the symptoms of SMI alone, an effective community treatment must address more than psychiatric symptoms (Stroul, 1989). Ozarin (1976) identified four areas of aid that individuals with SMI require to return to the community: 1) financial, 2) medical and psychiatric, 3) vocation/employment, and 4) social and recreational. It is not feasible for any one profession or organization to provide all four areas of aid, thus intraprofessional work between agencies is necessary to meet the diverse needs of individuals with SMI (Ozarin, 1976).

The initial implementation of community treatment for SMI was not well-organized. One of the major problems was the unclear allocation of responsibility between agencies within the community (Turner & TenHoor, 1978). Even within communities, where diverse services for individuals with SMI were readily available, agencies were often disjointed, complex, and difficult to navigate (Mechanic, 1991). Between communities, there was not a shared organizational scheme for treating the mentally ill within the community.

The NIMH responded to the lack of an agreed upon framework for community treatment by establishing a Community Support Work Group in 1974 (Turner & TenHoor, 1978). The work group developed the Community Support System (CSS), a
model for treating the diverse needs of individuals with SMI within the community. Though a CSS is not a specific treatment design, model outlines the diverse services that need to be implemented across agencies in order for the community treatment of SMI to be effective. A CSS is described as “a network of caring and responsible people committed to assisting a vulnerable population to meet their needs and develop their potentials without being unnecessarily isolated or excluded from the community” (Turner & TenHoor, 1978, p. 329). A CSS is designed to perform the following:

1. Identification of the target population, whether in hospitals or in the community, and outreach to offer appropriate services to those willing to participate.

2. Assistance in applying for entitlements

3. Crisis stabilization services in the least restrictive setting possible, with hospitalization available when other options are insufficient.

4. Psychosocial rehabilitation services, including but not limited to:
   - goal-oriented rehabilitation evaluation;
   - training in community living skills, in the natural setting wherever possible;
   - opportunities to improve employability;
   - appropriate living arrangements in an atmosphere that encourages improvements in functioning;
   - opportunities to develop social skills, interests, and leisure time activities to provide a sense of participation and worth.
5. Supportive services of indefinite duration, including supportive living and working arrangements, and other such services for as long as they are needed.

6. Medical and mental health care.

7. Backup support to families, friends, and community members.

8. Involvement of concerned community members in planning and offering housing or working opportunities.

9. Protection of client rights, both in hospitals and in the community.

10. Case management, to ensure continuous availability of appropriate forms of assistance. (Turner & TenHoor, 1978, p. 329-330)

While the CSS functions primarily as a model for the treatment of individuals with SMI in the community, it also acts as a guiding philosophy or mission statement for how individuals with SMI ought to be treated within their communities (Stroul, 1989). According to the CSS model, services should be “consumer-centered”, empowering, “racially and culturally appropriate”, “flexible”, strengths-focused, nonrestrictive, individualized, monitored for quality of care, and well-coordinated between agencies (Stroul, 1989, p. 12-13). Symptom management remains an integral component of treatment, but it is not the totality of treatment.

Comprehensive community-based treatment models have received widespread support over the last couple of decades (de Almeida & Killaspy, 2011). Thornicroft and Tansella (2002) identify three periods in the evolution of mental health care: 1) the rise of the asylum, 2) the decline of the asylum, and 3) the balancing of mental health care. Similar to the CSS model, balanced care provides the following:
A) services which are close to home, including modern hospital care for acute admissions, and long-term residential facilities in the community

B) interventions related to disabilities as well as symptoms

C) treatment and care specific to the diagnosis and needs of each individual

D) services which reflect the priorities of service users themselves

E) services which are co-ordinated between mental health professions and agencies

F) mobile rather than static services, including those which can offer home treatment (2002, pp. 85-86).

In a balanced care model, community agencies provide the bulk of services, while hospitals provide very brief ambulatory services (Thornicroft & Tansella, 2002). The balanced care model can be viewed as a middle ground between the primarily psychiatric hospital-based treated pre-deinstitutionalization and the primarily community-based treatment immediately post-deinstitutionalization (Thornicroft & Tansella, 2013).

In 2003, the World Health Organization (2003) published the Organization of Services for Mental Health, which provided 7 requirements for implementing an effective, humane, integrated mental health care system. The requirements were accessibility, comprehensiveness, coordination and continuity of care, effectiveness, equity, respect for human rights, and coordination of specialized services with primary care and intersectional collaboration (WHO, 2003). Since the construction of the CSS model, the integration and collaboration between and within services have been at the forefront of community mental health.
Recovery

Recovery from SMI has also been at the forefront of community mental health for the last several decades. Though consumer (an individual who utilizes mental health services) writings describing recovery emerged in the latter half of the 1980s (Anonymous, 1989; Deegan, 1988; Unzicker, 1989), it was not until the early 1990s that mental health providers and researchers began advocating recovery as the ultimate goal of the treatment of SMI (Anthony, 1993). By 2003, US national policy on mental health identified recovery as a superordinate treatment goal (New Freedom Commission on Mental Health, 2003).

Though the term recovery is also used in the rehabilitation and substance abuse literatures, recovery in a SMI context differs in many ways. In general, recovery can be defined as

...a deeply personal, unique process of changing one’s attitude, values, feelings, goals, skills, and/or roles. It is a way of living a satisfying, hopeful, and contributing life even with limitations caused by illness. Recovery involves the development of new meaning and purpose in one’s life as one grows beyond the catastrophic effects of mental illness. (Anthony, 1993, p. 15)

Consumer writings describe the process of recovery as personal and individualized. Recovery is an active process by which individuals with SMI work to live fulfilling lives despite their illness. Recovery does not mean that an individual is no longer affected by SMI or is no longer in pain because of SMI; rather, recovery is an individual’s ability to live a full life with SMI (Anthony, 1993).
Recovery is a broad concept and not easily operationalized (Resnick, Fontana, Lehman, & Rosenheck, 2005). Several groups of researchers, drawing from different qualitative datasets, agree that recovery is a phasic process, i.e., individuals pass through recognizable stages as they progress in their recovery (Baxter & Diehl, 1998; Davidson & Strauss, 1992; Spaniol, Wewiorski, Gagne, & Anthony, 2002; Young & Ensing, 1999).

Baxter and Diehl (1998) identify three stages of recovery: 1) recuperation, 2) rebuilding, and 3) recovery/discovery. During the recuperation stage, individuals stabilize themselves directly following a crisis. The rebuilding stage involves regaining independence and self-efficacy, while tolerating setbacks. The final stage, recovery/discovery, involves the recognition of and growing comfort with the necessity of interdependence (Baxter & Diehl, 1998).

Davidson and Strauss (1992) conceptualize recovery as a process of rediscovering an active, functional sense of self and posit four stages of recovery. The first stage of recovery, “discovering a more active self”, involves the individual identifying the possibility of an active sense of self despite his or her illness. The authors note that this may involve identifying previously unrecognized aspects of the self that are not impacted by illness (Davidson & Strauss, 1992). The second stage, “taking stock of the self”, involves an individual’s realistic appraisal of his or her current abilities (in preparation for action). The third stage, “putting the self into action”, involves an individual utilizing what he or she had discovered in the previous two phases, and taking action, i.e., becoming an active self. The authors argue that acting on one’s own accord is the most beneficial component of this stage. The final stage, “appealing to the self”, involves the
crystallization of a sense of self that remains present through future symptoms and relapse (Davison & Strauss, 1992).

Spaniol and colleagues (2002) posit four stages of recovery, but note that there is not a clear line of demarcation between stages. The stages include: 1) feeling overwhelmed by the disability, 2) struggling with the disability, 3) living with the disability, and 4) living beyond the disability. In the first stage, an individual recognizes feeling out of control and powerless against his or her illness. The authors comment that this stage can last for years after the initial onset of the illness. The second stage involves the individual gaining a greater understanding of his or her illness, often in medical terms. He or she engages in persistent attempts to cope with the illness and builds confidence in his or her ability to manage the effects of the illness (Spaniol et al., 2002). In the third stage, an individual has built up confidence in managing his or her illness and has recognized the potential for living a satisfying life despite his or her illness. In the final phase, an individual’s life satisfaction is minimally impacted by his or her illness and a clear sense of meaning has been established (Spaniol et al., 2002).

Young and Ensing (1999) outline five stages in the recovery process: 1) overcoming “stuckness”, 2) fostering self-empowerment, 3) learning and self-redefinition, 4) return to basic functioning, and 5) improving quality of life. The first stage is a particularly difficult stage and involves an individual’s recognition that he or she has an illness. Over time, the individual becomes motivated, inspired, and/or hopeful to bring about change in his or her life. The second stage involves an individual’s reestablishing of his or her self-efficacy and desire to take charge of his or her illness. In the third stage, the individual reconnects with his or her sense of self, which may have
been lost at the onset of the illness. This stage also involves isolating illness as only a part of the self, with a stable sense of self existing despite the illness and despite relapse (Young & Ensing, 1999). The fourth stage involves the individual’s adaptation to the illness, e.g., coping, self-care; he or she strives to remain active rather than passive. The last stage involves an individual working towards attaining overall well-being and adopting a greater sense of purpose in his or her life (Young & Ensing, 1999).

Andresen, Oades, and Caputi (2003), after reviewing five models of recovery published in the literature (i.e., Davidson & Strauss, 1992; Baxter & Diehl, 1998; Young & Ensing, 1999; Pettie & Triolo, 1999; Spaniol et al., 2000), extrapolated five stages of recovery shared across models. The five stages include: 1) moratorium, 2) awareness, 3) preparation, 4) rebuilding, and 5) growth. The first stage is associated with the individual’s response to the initial onset of illness and may involve denial and/or confusion. The second stage involves the individual’s recognition of the possibility for a satisfying life despite illness. In the third stage, the individual prepares to become more active in his or her recovery process (Andresen et al., 2003). The fourth stage involves assuming responsibility for the management of the illness and working towards positive goals. This stage involves the regaining of a sense of self-efficacy and coping with relapse or the reemergence of symptoms. The final stage involves the individual’s establishment of a meaningful life as a result of and despite the illness (Andresen et al., 2003).

**Evidence-Based Practices**

With the recognized importance of comprehensive community-based care and the emergence of recovery as the superordinate goal for individuals with SMI, the
treatment of SMI has qualitatively changed since the height of state psychiatric hospitals. An additional shift in the mental healthcare landscape has been in its focus on utilizing treatments and techniques that are effective, as demonstrated by empirical research (e.g., Drake et al., 2001). Evidence-based practices (EBPs) can be defined as techniques repeatedly found to be effective using empirical research methods. The goal of EBP research is to develop treatments with limited bias, high internal validity, and good generalizability (Anthony, Rogers, & Farkas, 2003). Research quality can be conceptualized as existing along a spectrum, with some designs generating stronger evidence than others. Randomized controlled trials (RCTs) compare an experimental treatment group to a placebo or active control group and are considered the gold standard of research design (Mueser, Torrey, Lynde, Singer, & Drake, 2003). Evidence gathered from clinical observation is considered the weakest evidence and is not regarded as evidence-based practice (Drake et al., 2001).

Though ample research evidence exists for the effectiveness of particular interventions for individuals with SMI, many mental health practitioners do not utilize EBPs; thus, well-researched, effective treatments may be inaccessible to many individuals with SMI (Drake et al., 2001; Lehman & Steinwachs, 1998b). The schizophrenia Patient Outcomes Research Team (PORT), launched in 1992, and funded by the Agency for Health Care Policy and Research and the NIMH, was tasked with three objectives: 1) review the outcome literature on the treatment of schizophrenia, 2) provide practice recommendations, and 3) survey consumers to determine the degree to which treatment received aligns with treatment recommendations, as determined by the available evidence (Lehman & Steinwachs, 1998a; Lehman & Steinwachs, 1998b).
PORT provided a total of 30 recommendations across the following areas: antipsychotic medication and adjunctive psychopharmacology, electroconvulsive therapy (ECT), individual and family interventions, vocational rehabilitation, and assertive community treatment (Lehman & Steinwachs, 1998a). The PORT Client Survey, designed to assess how treatment received conforms to practice recommendations, was administered to 719 random clients diagnosed with schizophrenia across one Southern and one Midwestern state. Client medical records were also reviewed. The survey found most conformance rates for recommendations falling below 50 percent, with pharmacological recommendations showing the highest conformance rates (Lehman & Steinwachs, 1998b). Thus, many individuals with schizophrenia did not have access to the treatments with the most robust evidence base.

In response to the findings of PORT, the Implementing EBPs Project, funded by the Robert Wood Johnson Foundation, began in December 1998. The project was managed by a panel of researchers, consumers, advocates, clinicians, and administrators, and its ultimate goal was the dissemination of evidence-based practices for the treatment of SMI (Mueser et al., 2003). The panel identified five psychosocial treatments for SMI with the most empirical support: 1) assertive community treatment, 2) family psychoeducation, 3) supported employment, 4) integrated dual disorders treatment, and 5) illness management and recovery treatment (Mueser et al., 2003), later manualized as the Illness Management and Recovery (IMR) Program (Mueser et al., 2002). The Implementing EBPs Project was designed to be carried out in three phases: phase I, development of implementation packages (“toolkits”), phase II, pilot testing of implementation packages, and phase III, broad dissemination of implementation
packages. In addition to the EBP toolkits, sites were also provided with consultants who assisted with implementation and training (Mueser et al., 2003).

The implementation project was a success. Over a 2-year period, a total of 53 sites across eight states participated and adopted one of the five EBPs. The IMR program was implemented at 12 centers across four states (Whitley, Gingerich, Lutz, & Mueser, 2009). Fidelity was checked every six months and by the end of the second year, over half of the sites demonstrated high fidelity. Highest fidelity was reached with supportive employment and assertive community treatment, with integrated dual disorders treatment and IMR showing moderate fidelity (McHugo et al., 2007). A subsequent survey, conducted two years after implementation, found that 79.6 percent of sites sustained their implemented EBP (Swain, Whitley, McHugo, & Drake, 2010). The results of the EBP Implementation Project evidenced significant progress in the treatment of SMI, especially compared to the results of the PORT evaluation in the late 1990s.

**Illness Management and Recovery**

Though each of the 5 identified EBPs can assist consumers in reaching their recovery goals, only the IMR program specifically aims to aid clients in generating and meeting their personal recovery goals. The IMR program is a manualized individual or group treatment, originally developed during the EBP Implementation Project, which is grounded in research on illness self-management strategies (Mueser et al., 2002). In addition to its inclusion of illness self-management strategies, the IMR program emphasizes the importance of recovery from SMI, as opposed to symptom reduction alone (Mueser, Meyer, Penn, Clancy, Clancy, & Salyers, 2006). The program is designed to be completed in five to 10 months, with weekly sessions, and consists of 11 modules.
as of the third edition of IMR), e.g., 1) recovery strategies, 2) practical facts about mental illness, etc., designed to be completed sequentially. Modules utilize educational, motivational, and cognitive-behavioral principles and are intended to aid individuals as they progress in their illness self-management and recovery (McGuire, Kukla, Green, Gilbride, Mueser, & Salyers, 2014; Mueser et al., 2006; Whitley et al., 2009). Participants are also encouraged to involve family and friends in the process (Mueser et al., 2006). See Appendix A for a complete list of IMR modules.

In a review of the illness self-management literature, five strategies with the most robust evidence base were selected to be incorporated into the IMR program. These strategies include: 1) psychoeducation, 2) cognitive-behavioral approaches to medication adherence, 3) relapse prevention planning, 4) social skills training, and 5) coping skills training (Mueser et al., 2006). While these strategies aid recovery, the primary aims of the strategies are to decrease symptoms and prevent relapse (Mueser et al., 2002). The concept of recovery as a personal process and the setting of specific recovery goals are discussed from the outset in module one of IMR (Mueser et al., 2006). Thus, a self-defined, personal recovery provides clients with a broad, superordinate goal, with more specific goals acting as subordinate goals to meet on their path to recovery. Recovery can be viewed as a value or guiding vision, while EBPs, such as illness self-management, can be viewed as technologies, designed to aid clients in reaching their ultimate, personal goal of recovery (Mueser, 2012).

The IMR program draws from the transtheoretical model of motivation and the stress-vulnerability model of schizophrenia (Mueser et al., 2006). The transtheoretical model posits that individuals pass through particular stages of change, e.g.,
precontemplative, contemplative, etc., before change can occur (Prochaska & DiClemente, 1984). At the outset of IMR, motivational interviewing strategies are utilized to ready clients for change (Mueser et al., 2006). The stress-vulnerability model proposes that genetics, stress, and vulnerability interact to trigger and exacerbate the symptoms of schizophrenia (Zubin & Spring, 1977). Thus, in its treatment of schizophrenia, IMR aims to lessen stress by increasing illness self-management (Mueser et al., 2006).

The Illness Management and Recovery Scale (IMRS; Mueser & Gingerich, 2005; See Appendix B) was constructed to measure recovery outcomes pre-to-post IMR participation. The measure is designed to assess both the actions taken to reach recovery goals and the utilization of illness self-management strategies (Hasson-Ohayon et al., 2008). The IMRS is a 15-item questionnaire, with each item rated on a 5-point scale. There are two parallel versions of the IMRS, a consumer version and a clinician version (Salyers et al., 2007). In general terms, the IMRS is a well-researched measure and has demonstrated good construct validity (see Färdig, Lewander, Fredriksson, & Melin, 2011; Hasson-Ohayon et al., 2008; Salyers et al., 2007; Sklar et al., 2012).

**IMR Outcomes**

McGuire, Kukla, Green, Gilbride, Mueser, and Salyers (2014) reviewed the IMR outcome literature and concluded that much of the published research has been supportive of IMR. As of October 2014, there have been four published IMR RCTs, one of which included an active control group (Hasson-Ohayon, Roe, & Kravetz, 2007; Levitt et al., 2009; Färdig, Lewander, Melin, Folke, & Fredriksson, 2011; Salyers, McGuire, Kukla, Fukui, Lysaker, & Mueser, 2014). While different measures were used across
RCTs to assess outcomes, e.g., Positive and Negative Syndrome Scale (PANSS; Salyers et al., 2014), Manchester Short Assessment of Quality of Life (MANSA; Färdig et al., 2011), all RCTs utilized the Illness Management and Recovery Scale (IMRS; Mueser & Gingerich, 2005)

Three RCTs utilized waitlist or treatment as usual (TAU) as their control groups (Hasson-Ohyan et al., 2008; Levitt et al., 2009; Färdig et al., 2011). Two of these RCTs found moderate increase in total client and clinician IMRS scores among participants of IMR as compared to waitlist or TAU (Levitt et al., 2009; Färdig et al., 2011). Hasson-Ohayon and colleagues (2008) also found a total client and clinician IMRS scores increase in participants having participated in IMR as compared to TAU, though this finding was moderated by fidelity to IMR (sites with greater fidelity showed total score increase).

In addition to an increase in total client and clinician IMRS scores, Levitt and colleagues (2009) found improvement on the Quality of Life Scale – Abbreviated (QLS-A) and reduction on the Brief Psychiatric Rating Scale (BPRS) in the IMR treatment group as compared to the waitlist control group. Färdig and colleagues (2011) observed a reduction in total Psychosis Evaluation Tool for Common Use by Caregivers (PECC) scores and multiple PECC subscales in the IMR group as compared to the TAU group. The authors also found an increase on 3 factors of the Ways of Coping Questionnaire (WCQ), which included seeking social support, escape-avoidance, and planful problem solving.

In a recent RCT, Salyers and colleagues (2014) compared outcomes between an IMR group and a problem-solving active control group. Participants in the problem-
solving group were instructed to discuss concerns amongst one another and support each other; no goals were set, no homework was assigned, and there was no structured problem-solving.

Salyers and colleagues (2014) found no significant differences between the IMR and problem-solving control group in total client or clinician IMRS scores posttreatment. Though improvements were found using multiple measures, which addressed multiple domains, from baseline to nine and 18 months, no differences were found between groups; thus, both groups improved as measured by the IMRS, but neither group outperformed the other. The authors acknowledge that, since this is the first IMR RCT utilizing an active control group, previous positive RCT findings may be due to nonspecific factors rather than specific IMR factors. However, the authors note that participant attendance rates were very low overall; only 28 percent of IMR participants attended greater than half of IMR sessions and only 17 percent of problem-solving group participants attended greater than half of problem-solving sessions (Salyers et al., 2014). Factors such as age, education, and hostility were found to be associated with attendance, with younger age, less education, and greater hostility associated with poorer attendance (McGuire, Bonfils, Kukla, Myers, & Salyers, 2013). Further research is needed to determine the specific factors contributing to positive outcomes in IMR.

Evolutions and Adaptations of IMR

Since the IMR program’s initial implementation, several variations of the IMR program have been developed and implemented. Many of the newer programs have broadened the treatment frame of IMR, placing greater emphasis on “wellness” and creating a more active role for peers within the programs. IMR adaptations include
Ohio’s Wellness Management and Recovery (WMR) program (Bullock, Sage, Hupp, Ozbey, & O’Rourke, 2009), Wellness Recovery Action Planning (WRAP; Cook et al., 2009), Wellness Self-Management (WSM; Salerno, Margolies, Cleek, Pollack, Gopalan, & Jackson, 2011), and several other programs described by Sterling, von Esenwein, Tucker, Fricks, and Druss (2010).

See table 1 for an overview of current recovery programs. Recovery programs have evolved along a similar path since the construction of the IMR program. Common themes of second generation recovery programs include an emphasis on wellness, holistic health, and spirituality (Sterling et al., 2010). Second generation recovery programs are designed to utilize the same evidence-based self-management strategies utilized by the IMR program, but differ in regards to treatment length, consumer involvement, and unique tools utilized during the program, e.g., wellness wheels.

Table 1

*Features of Recovery Programs* (Bullock et al., 2009; Cook et al., 2009; Salermo et al., 2011; Sterling et al., 2010)

<table>
<thead>
<tr>
<th></th>
<th>IMR</th>
<th>WMR</th>
<th>WRAP</th>
<th>WSM</th>
</tr>
</thead>
<tbody>
<tr>
<td>Time</td>
<td>5–10</td>
<td>10 weeks</td>
<td>8 weeks</td>
<td>12+ months</td>
</tr>
<tr>
<td>Modality</td>
<td>Individual or Group</td>
<td>Group</td>
<td>Group</td>
<td>Group – 8 to 12 participants recommended</td>
</tr>
<tr>
<td>Facilitator(s)</td>
<td>Practitioners</td>
<td>Practitioners</td>
<td>Consumers</td>
<td>Practitioners &amp;</td>
</tr>
<tr>
<td>Treatment Focus</td>
<td>Target Problem</td>
<td>Tools</td>
<td>Completion</td>
<td></td>
</tr>
<tr>
<td>-----------------</td>
<td>----------------</td>
<td>-------</td>
<td>------------</td>
<td></td>
</tr>
<tr>
<td>Mental Health</td>
<td>SMIs</td>
<td>N/A</td>
<td>Sequential</td>
<td></td>
</tr>
<tr>
<td>Holistic</td>
<td>Long-term</td>
<td>Wellness Toolbox – Wellness Wheel – consisting of the many dimensions of wellness</td>
<td>Sequential</td>
<td></td>
</tr>
<tr>
<td>Holistic</td>
<td>Physical/Psychiatric Illnesses</td>
<td>consisting of personalized self-management strategies</td>
<td>Sequential</td>
<td></td>
</tr>
<tr>
<td>Holistic</td>
<td>SMI</td>
<td>WSM</td>
<td>Nonsequential – chosen by facilitator</td>
<td></td>
</tr>
</tbody>
</table>

It’s important to note that the IMR program is not static and continues to evolve beyond its initial construction and implementation. Most recently, an Integrated Illness Management and Recovery (I-IMR) program was designed and implemented for elderly individuals with SMI. Unlike the original IMR program, the I-IMR also addressed the physical needs of participants (Mueser, Bartels, Santos, & Pratt, 2012). The IMR program was also recently translated into a web-based format (IMR-Web), so that the
program could be completed online (Wright-Berryman, O’Halloran, Kemp, Salyers, & Mueser, 2013). Though differences remain between the IMR program and the second generation recovery programs, the programs become more similar with time.

**Wellness Management and Recovery**

Having briefly reviewed several of the second generation recovery programs, I will now further discuss and elaborate on the WMR program, the program of interest for this paper. The WMR program is a group treatment designed to empower participants to set recovery and wellness goals, work actively and collaboratively with medical and psychological professionals, and live an overall healthier lifestyle (Bullock et al., 2009). WMR groups meet for two hours each week for 10 weeks. Thus, the program is significantly briefer than the IMR program and is designed to be implemented specifically in group settings, rather than in individual or group settings (Bullock et al., 2009).

The modules covered in WMR are: 1) mental health recovery, 2) an understanding of mental health, 3) the role of medication in recovery and wellness, 4) learning to manage symptoms and side effects, 5) effective communication, 6) communicating with your partner, 7) wellness, 8) coordinating your care, 9) building social supports and involving others, and 10) planning for wellness (Bullock et al., 2009). See Appendix C for a description of WMR modules.

WMR is grounded in the Young and Ensing (1999) model of recovery and Albert Bandura’s social learning theory (Bandura & Huston, 1961). The concept of recovery is taught didactically, but the process of recovery is learned from others in recovery, e.g., through vicarious learning. WMR utilizes the Mental Health Recovery Measure (MHRM;
Young & Bullock, 2003) as its primary outcome measure. Though WMR utilizes many of the evidence-based practices identified by IMR, its grounding in wellness and peer support differentiates it programmatically and philosophically from IMR.

Psychological and physical intervention has traditionally focused on alleviating symptoms and reducing the risk of disease or disorder. In recent years, some authors have advocated a paradigm shift, in which the major focus of medicine and clinical psychology would become the promotion of health and well being, as opposed to fighting ill-health (Allen, Carlson, & Ham, 2007; Ray, 2004; Ryff & Singer, 1998a;).

This perspective is drawn from the positive psychology movement, which focuses on strengths as opposed to weaknesses. Positive psychology attempts to answer the question, how are people healthy?, rather than the question, how are people sick? (Allen et al., 2007). As Ryff and Singer (1998b) state:

From an evolutionary perspective, millions of years have honed our capacities to fend off problems – be they predators, food scarcities, plagues, or natural disasters – and survive. Somewhere along the way, however, the evolutionary saga also made it possible for us to become proactive, purposeful, loving, nurturing, and capable of reflecting about our experiences. These advances… mean that we can now do more than battle adversity. (p. 83)

Wellness is multidimensional (O’Donnell, 2008) and not equivalent to the absence of illness (Allen et al., 2007; Ryff & Singer, 1998b). Wellness includes physical, emotional, social, intellectual, and spiritual health components (O’Donnell, 2008). Wellness programs are holistic in that they attempt to build health across domains, e.g., physical, spiritual, etc. Participants in the WMR program utilize a “Wellness Wheel” as
both a guide and reminder of the multiple dimensions of wellness (Bullock et al., 2013; Myers, Sweeney, & Witmer, 2000).

While the emphasis on wellness is a primary feature differentiating WMR from IMR, WMR’s focus on peer involvement is also unique. WMR modules are co-facilitated by a staff member of the participating agency and a peer provider. At CMHC sites, one co-facilitator is a mental health professional employed at the site, while the other co-facilitator is a peer, who has both completed the WMR program and completed the 24-hour WMR facilitator training course. At COS sites, both co-facilitators are peers, as staff members at COS sites also identify as consumers (Bullock et al., 2013). See Table 1 for a list of the distinguishing features of CMHC and COS sites.

**Table 2**

*Distinguishing Features of CMHC and COS Sites* (Campbell, 2005; Tanenbaum, 2012; Tanenbaum, 2011)

<table>
<thead>
<tr>
<th>CMHCs</th>
<th>COSs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Most members of agency boards are mental health professionals</td>
<td>Most members of agency boards are consumers</td>
</tr>
<tr>
<td>Services provided by mental health professionals</td>
<td>Services provided by consumers</td>
</tr>
<tr>
<td>Traditional provider/patient orientation</td>
<td>Peer-to-peer orientation</td>
</tr>
<tr>
<td>Provides clinical services</td>
<td>Provides non-clinical services</td>
</tr>
<tr>
<td>Emphasis on EBPs</td>
<td>Emphasis on peer support</td>
</tr>
<tr>
<td>For-profit or non-profit</td>
<td>Non-profit</td>
</tr>
</tbody>
</table>
Policies and strategic plans set by professionals
Policies and strategic plans set by consumers

Peers who have been in recovery for an extended period of time can act as positive role models for individuals beginning their recovery journey (Davidson, Chinman, Kloos, Weingarten, Stayner, & Tebes, 1999; Deegan, 1993). Peer involvement has long been an important feature of substance abuse treatment programs and with the advent of the Mental Health Consumer Movement (MHCM), the importance of peer involvement in the recovery process was better recognized (Davidson et al., 2006).

Peer support can be divided into mutual support programs, COS site programs, and traditional programs for which consumers are providers. Mutual support programs are those in which individuals come together to discuss shared problems and concerns, e.g., Alcoholics Anonymous (Davidson et al., 2006). Relationships in mutual support programs are not hierarchical, although some group members may have more experience in the group than others (Lloyd-Evans et al., 2014). A literature review of the effects of mutual support for SMI found mixed results for the reduction of symptoms and hospitalizations. Preliminary evidence suggests that mutual support may increase self-reported quality of life and social integration (Davidson et al., 1999).

A recent meta-analysis of peer support RCTs for SMI did not find a statistically significant decrease in symptoms or hospitalizations as compared to TAU. The meta-analysis did, however, find tentative evidence for an increase in hope and recovery from COS site programs as compared to TAU, though the authors note that this finding was inconsistent across studies and may be due to bias (Lloyd-Evans et al., 2014).
Mental Health Recovery Measure

The MHRM (Young & Bullock, 2003; See Appendix D) is a 30-item self-report questionnaire designed to measure recovery from SMI. Each item is rated on a scale from 0 to 4, from “Strongly Disagree” to “Strongly Agree”. Items were constructed based on themes derived from Young and Ensing’s (1999) qualitative analysis of interviews with individuals living with SMI. Thus, the MHRM assesses “recovery” as defined by individuals in recovery. In this regard, items on the MHRM are grounded in the “lived experiences” of individuals with SMI.

The MHRM was first designed by Sharon Young (1999) to measure individual pre-post change in a recovery-based group treatment for individuals with SMI. The MHRM initially contained 36 items and was divided into six domains: 1) overcoming stuckness, 2) self-empowerment, 3) learning and self-redefinition, 4) basic functioning, 5) overall well-being, 6) and new potentials. Based on a sample of 279 participants, the internal consistency for the overall score was high (alpha = .91) and the internal consistency for the domains ranged from an alpha of .55 (self-empowerment) to .83 (new potentials; Young, 1999). Five additional items were subsequently added to the MHRM, bringing the total number of items to 41. Two additional domains, i.e., spirituality and advocacy/enrichment, were also added to better reflect the recovery process as described by consumers. Based on the results of a Rasch analysis, the MHRM was subsequently decreased to a total of 30 items (Bullock, 2005). Total scores on the MHRM range from 0 to 120, with a mean of 78 (SD = 21.7; Bullock, 2009). From a sample of 671 consumers, MHRM items showed high internal reliability, alpha = .95 (Bullock, 2009), and from a sample of 279 consumers, the MHRM’s total score showed both high internal
consistency, alpha = 93, and high 2-week test-retest reliability, \( r = .91 \) (Bullock, 2005). The MHRM total score shows moderate to strong correlations with the Community Living Scale (Smith & Ford, 1990), \( r = .57 \), the Empowerment Scale (Rogers, Chamberlin, Ellison, & Crean, 1997), \( r = .67 \), the Connor-Davidson Resilience Scale (Connor & Davidson, 2003), \( r = .73 \), and the Resilience Scale (Wagnild & Young, 1993), \( r = .75 \) (Bullock, 2005). The MHRM total score is negatively correlated with the Ohio Department of Mental Health (ODMH) Symptom Distress scale, \( r = -.45 \), and positively correlated with the ODMH Safety and Health scale, \( r = .39 \). The MHRM’s total score is not associated with the ODMH Quality of Life scale, \( r = .09 \) (Bullock, 2009).

A recent Rasch analysis of the MHRM found problems with the 5-point ratings scale. Chang, Ailey, and Chen (2013) reported step calibrations with thresholds less than the 1.4 logits cutoff, which indicates that ratings are being selected inconsistently. Chang and colleagues (2013) combined ratings 1 and 2 to create a 4-point rating scale, which showed greater differentiation between ratings (Chang, Ailey, & Chen, 2013). They subsequently concluded that five of the 30 items on the MHRM were misfitting. One of the misfitting items, “I have enough money to spend on extra things or activities that enrich my life,” was ultimately retained because it was the highest item on the item-person map, i.e., the most difficult question to answer. They also reported that the MHRM showed a ceiling effect and concluded that the MHRM will need additional items to better measure higher stages of recovery (Chang et al., 2013).

A brief, 10-item version of the MHRM, the MHRM-10, was recently constructed based on data gathered from a factor analysis. Using exploratory factor analysis, Armstrong, Cohen, Hellemann, Reist, and Young (2014) found a single-factor solution,
which explained 37.3 percent of the variance in the MHRM. They then chose the 10 items with the greatest factor loadings, ranging from .66 to .79, which included items 17, 20, 18, 21, 24, 10, 11, 23, 12, and 28, respectively.

Internal reliability was found to be comparable to that observed on the MHRM. The MHRM-10 also showed comparable correlations to those observed on the full MHRM on the Lehman Quality of Life Interview (TJ-30; Lehman, 1988), Client Satisfaction Questionnaire (CSQ-8; Larsen, Attkisson, Hargreaves, & Nguyen, 1979) total score, Brief Psychiatric Rating Scale (Overall & Gorham, 1962), and the Mental Illness Research, Education and Clinical Centers Global Assessment of Functioning (MIRECC GAF; Niv, Cohen, Sullivan, & Young, 2007). Preliminary evidence suggests that the MHRM-10 is a valid and reliable brief measure of recovery (Armstrong et al., 2014).

The MHRM is qualitatively different from the IMRS in several key ways (See Appendices B and D for IMRS and MHRM). The primary differences between the MHRM and the IMRS is that the MHRM is designed to assess recovery, irrespective of the type of treatment an individual received, whereas the IMRS is specifically designed to assess skills learned and implemented as a result of the IMR program. The MHRM broadly assess recovery across several theoretical domains (Bullock, 2005), whereas the IMRS assesses knowledge and utilization of self-management strategies and steps taken towards recovery goals (Hasson-Ohayon et al., 2008).

In addition, unlike the IMRS, MHRM items were constructed based on consumers’ reported experiences of being in recovery (Bullock, 2005). Thus, the language used on the MHRM is closely aligned with the language used by consumers.
The WMR Scale (WMR-CSRS; See Appendix E) is the WMR program’s iteration of the IMRS. The WMR-CSRS is a 20-item self-report measure that includes all 15 IMRS items and an additional five items relevant to the WMR program’s treatment goals. Though the WMR-CSRS broadly assesses progress in the WMR program, the WMR-CSRS also acts as a pseudo-fidelity check, as progress on the WMR-CSRS is expected with appropriate coverage of the WMR curriculum. The WMR-CSRS will be discussed further in the Method section.

**WMR Outcomes**

From an archival sample of WMR participants between the years 2005 to 2012, total MHRM scores showed a statistically significant increase pre to post treatment, 
\[ t(617) = 12.21, p < .001, d = .42 \]. Domains on the MHRM also showed statistically significant increases: overcoming stuckness, \( t(635) = 7.72, p < .001, d = .32 \), self-empowerment, \( t(636) = 9.94, p < .001, d = .37 \), learning/self-redefinition, \( t(635) = 8.65, p < .001, d = .34 \), basic functioning, \( t(622) = 7.69, p < .001, d = .29 \), overall well-being, \( t(622) = 10.13, p < .001, d = .32 \), reaching new potentials, \( t(621) = 9.23, p < .001, d = .36 \), spirituality, \( t(619) = 6.68, p < .001, d = .24 \), and advocacy/enrichment, \( t(618) = 8.84, p < .001, d = .34 \) (Bullock et al., 2013).

Reliable Change Indices (RCIs; Jacobson & Truax, 1991) were calculated for the MHRM total scores, with a conservative RCI equaling a 15 point change from pre to post and a meaningful RCI equaling a 10 point change pre to post. From a sample of 618 participants, 30.3 percent showed change at or greater than the conservative RCI, with 6.3 percent showing reliable deterioration and 3.9 percent showing meaningful deterioration (Bullock et al., 2013).
From a sample of 162 participants who completed WMR outcome measures at pre, post, and follow-up (3 to 6 months later), total MHRM scores were found to increase from pre to post and be maintained at follow-up, $F(2, 284) = 16.85, p < .001$. WMR-CSRS total scores were also found to increase from pre to post and be maintained at follow-up, $F(2, 182) = 15.36, p < .001$ (Bullock et al., 2013).

Statistically significant pre to post changes were also observed on the Wellness Management and Recovery Client Self-Rating Scale (WMR-CSRS), a 20-item measure adapted from the IMR Client Self-Rating Scale, and designed to measure illness self-management. WMR-CSRS differs from the IMR Client Self-Rating Scale in that it includes five additional items targeting wellness and healthy lifestyle goals (Bullock et al., 2009). Total WMR-CSRS total scores showed statistically significant changes from pre to post treatment, $t(459) = 9.46, p < .001, d = .40$. Increases in self-reported quality of life and a decrease in symptom distress as measured by the Ohio Outcomes Adult Consumer Form were also observed, with effect sizes ranging from small to medium (Bullock et al., 2013).

Interestingly, preliminary analyses have not detected statistically significant pre-post outcome differences between traditional community mental health centers (CMHC) and COS sites (Bullock et al, 2013). This suggests that both CMHC and COS sites are about equally effective in implementing the WMR program.

**Statement of the Problem**

The WMR program is a 10-week, group-based recovery program for individuals living with SMI. WMR incorporates both wellness and self-management strategies in its curriculum, with the ultimate goal being greater recovery from SMI. The WMR program
has been implemented in both traditional CMHC and nontraditional COS sites. Groups are co-facilitated by an agency staff member and a peer-provider, both trained to facilitate a WMR group.

Though CMHC and COS sites do not show statistically significant outcome differences as assessed by the MHRM total score, it is unknown if significant differences exist at the domain and/or item level of the MHRM. As noted, Lloyd-Evans and colleagues (2014) found tentative meta-analytic evidence suggesting that programs at COS sites have a differential impact on hope and recovery as compared to programs at more traditional sites. Thus, COS sites may differentially impact particular recovery domains or recovery items as compared to CMHC sites. Conversely, CMHC sites may also differentially impact particular recovery domains or recovery items as compared to COS sites.

While the WMR program has been shown to decrease self-reported symptom distress, as measured by the Ohio Outcomes Adult Consumer Form, it is likewise unknown if symptom distress is differentially impacted by CMHC or COS sites. Though symptom distress is related to recovery, removal of symptoms is not equivalent to mental health recovery; thus, it’s possible for recovery outcomes to be comparable between CMHC and COS sites, while symptom distress outcomes differ.

It is also unclear whether MHRM outcome differences exist within CMHC and COS sites. Neither CMHC nor COS sites are homogeneous as a class and the range of outcomes may be greater within CMHC or COS sites than between the sites. Such within class heterogeneity may be a result of site itself, group facilitators, or some other extraneous variables that are unique to a given COS or CMHC site.
In addition, it is unknown whether differences in program fidelity exist between CMHC and COS sites. Differences in level of adherence to the WMR program curriculum or level of attention to working within the WMR program philosophy (e.g., peers as having an equal and central role in promoting the recovery process) may account for some of the outcome differences found between CMHC and COS sites.

**Purpose of the Present Study**

The purpose of the present study was to utilize archival MHRM data to assess whether pre to post WMR outcome differences exist at the MHRM domain and/or item-level between or within CMHC and COS sites. The study also assessed whether there were outcome differences in symptom distress between CMHC and COS sites. In addition, the study examined differences in program fidelity between and within CMHC and COS sites using the WMR-CSRS as a proxy fidelity measure.

**Research Questions**

Broadly, the current study was designed to examine WMR program outcome differences between and within CMHC and COS sites for individuals who completed the WMR program (pre-post). The following research questions were addressed:

1) Are there MHRM domain-level outcome differences as a function of being a CMHC or COS site?

2) Are there MHRM item-level outcome differences as a function of being a CMHC or COS site?

3) Are there outcome differences in symptom distress between CMHC and COS sites?
4) Are there MHRM domain-level outcome difference within CMHC or COS sites?

5) Are there differences in program fidelity between CMHC and COS sites?
Chapter Two

Method

Participants and Procedure

This study utilized archival outcome data collected from 25 sites that implemented the WMR program in Ohio between the years 2005 and 2015. About 75 percent of the implementing sites were traditional CMHC sites and about 25 percent were COS sites. Data were collected on a total of 1,462 participants, who were assessed pre-WMR, post-WMR, and at follow-up, between three and six months after completing the WMR program. While completing the WMR program, participants were also receiving regular, traditional individual psychiatric services, which included medication and case management services.

Measures

Demographic Form. The demographic form consisted of several items requesting general demographic information, including: name, age, birth date, gender, agency where you are enrolled, years of school completed, current residence, marital status, employment status, and an identification number.

Mental Health Recovery Measure. The MHRM (see Appendix D) is a 30-item self-report questionnaire designed to assess recovery from SMI. Based on the qualitative findings of 18 interviews of individuals living with SMI (Young & Ensing, 1999), items were constructed to reflect consumer-defined recovery. Each item is rated on a 5-point rating scale from “Strongly Disagree” to “Strongly Agree”. The MHRM consists of eight domains, believed to be components of recovery, which include:

1) Overcoming Stuckness (items 1 to 4)
2) Self-Empowerment (items 5 to 8)
3) Learning and Self-Redefinition (items 9 to 12)
4) Basic Functioning (items 13 to 16)
5) Overall Well-Being (items 17 to 20)
6) New Potentials (items 21 to 24)
7) Spirituality (items 25 to 26)
8) Advocacy/Quality of Life (items 27 to 30).

The MHRM has a mean total score of 78 ($SD = 21.7$), high internal reliability, alpha = .93, and high 2-week test-retest reliability, $r = .91$ (Bullock, 2005). The MHRM has moderate to strong associations with many other recovery-oriented measures, including the Empowerment Scale, $r = .67$, the Connor-Davidson Resilience Scale, $r = .73$ (Bullock, 2005), and the TL-30, $r = .54$ (Armstrong et al., 2014). MHRM is negatively associated with the ODMH Symptom Distress scale, $r = -.45$ (Bullock, 2009) and the Brief Psychiatric Rating Scale, $r = -.40$ (Armstrong et al., 2014).

**Symptom Distress Scale.** The Symptom Distress Scale was developed for the Adult Consumer Form, which was part of the Ohio Mental Health Consumer Outcomes System. The scale consists of 15 items and is designed to assess an individual’s level of distress resulting from his or her psychiatric symptoms. It was constructed using all 10 items from the Symptom Checklist – 10 (SCL-10; Nguyen, Attkisson, & Stegner, 1983) and 5 additional items from the Symptom Checklist – 90 (SCL-90; Derogatis & Cleary, 1977). Each item is rated on a 5-point scale from “Not at all” distressing to “Extremely” distressing. From a sample of 1,479 individuals, the scale showed good internal consistency, alpha = .93 (ODMH, 2009). The scale also showed moderate association
with self-reported medication concerns, physical health interference, and the Beck Depression Inventory – II (Beck, Steer, Ball, & Ranieri, 1996; ODMH, 2005; ODMH, 2009).

**Wellness Management and Recovery Client Self-Rating Scale.** The WMR-CSRS (also called the WMR Scale; see Appendix E) is a 20-item, self-report measure that broadly assesses the utilization of self-management strategies and actions taken to reach recovery goals and live a healthier lifestyle. Each item is rated on a 5-point scale. The WMR-CSRS is adapted from the IMRS and includes the 15-items that comprise the IMRS. The IMRS has been found to have good construct validity, test-retest reliability, and convergent validity (see Färdig, Lewander, Fredriksson, & Melin, 2011; Hasson-Ohayon et al., 2008; Salyers et al., 2007; Sklar et al., 2012). Five additional items are included on the WMR-CSRS, which address some of the elements that differentiate WMR from IMR, i.e., decreasing tobacco use, living a healthier lifestyle, collaborating with healthcare professionals, wellness planning, and integrating philosophy of recovery into life (Bullock et al., 2013).

The WMR-CSRS assesses a variety of treatment goals of the WMR program, e.g., setting and making progress towards recovery goals, greater understanding of symptoms and coping strategies, better involvement of family/friends in treatment, better relapse prevention planning, etc. While progress in regards to these goals would be associated with progress in the WMR program, it would also be expected if the WMR curriculum is appropriately covered in treatment. For example, all participants should set recovery goals and make progress towards their recovery goals in the WMR program. All participants should, as dictated by the WMR curriculum, also gain a greater
understanding of both psychiatric symptoms and coping strategies. For purposes of this study, the WMR-CSRS acted as a proxy fidelity check as it assesses the knowledge and skills acquired when the WMR curriculum is effectively followed.

**Data Analyses**

All descriptive and statistical analyses were conducted using IBM’s Statistical Package for the Social Sciences - version 19 (SPSS-19). The ratio of participants at CMHC sites to participants at COS sites was greater than 4:1, indicating an unbalanced design. In addition to being unbalanced, participants also differed with regard to the measures that they completed. Given the different research questions addressed, it was necessary to select, from the complete sample, the participants that were to be included in each analysis.

Samples of participants were selected for analyses based on the research question being addressed and the number of participants with completed data from the questionnaire that was relevant to answer that research question. Three samples were constructed, one sample for research questions 1 and 2, one sample for research question 3, and one sample for research question 4. Participant selection for each sample began with isolating all participants with relevant complete outcome data from the total sample.

After determining which participants had the relevant complete outcome data, participants from CMHC and COS sites were selected for the analyses. With far fewer participants from COS sites, participants from COS sites with complete data were selected first, then, based on the number of participants selected from COS sites, a comparable, random sample of participants from CMHC sites were selected. Descriptive information about each sample is included in the Results section.
**Difference Scores.** The current study utilized difference scores for each outcome measure. Difference scores, $D$, were calculated by subtracting the pretest score or the initial observation, $X$, from the posttest score or the final observation, $Y$. Thus, $D = Y - X$ (Maris, 1998). Outcome studies typically involve the analyses of difference scores or posttest scores, controlling for pretest scores (Maris, 1998; Rogosa & Willett, 1983). Whether using difference scores or controlling for pre-test scores, the goal is to ensure that difference between groups occur as a result of the treatment and not due to differences that already exist. This is termed an unbiased estimate of the effect of treatment (Maris, 1998).

An ANOVA of difference scores and an ANCOVA of pre and posttest scores answer different questions. ANCOVAs assess differences between groups on posttest scores, with the assumption that the pretest scores were the same. ANOVAs of difference scores, on the other hand, assess the differences between groups in terms of gain from pre to posttest (Fitzmaurice, Laird, & Ware, 2004). This study utilized differences scores because the research questions posed were concerned with differences in outcome gains between and within CMHC and COS sites.

**Research Question 1.** The first research question addressed whether there were significant domain-level MHRM differences between participants at CMHC and COS sites. Difference scores were calculated by subtracting pretest domain scores from posttest domain scores:

$$D = Y - X$$

with $D$ being the gain score, $Y$ being the posttest domain score, and $X$ being the pretest domain score.
To assess for significant overall difference in domain-level MHRM score between groups, a multivariate analysis of variance (MANOVA) was conducted, with CMHC and COS acting as the independent variable (IV) and the difference scores for the 8 domains acting as the dependent variables (DVs). To assess for individual domain-level differences between CMHC and COS sites, independent t tests were also conducted comparing the CMHC and COS sites on the gains for each domain of the MHRM.

**Research Question 2.** The second research question addressed whether there were significant differences between CMHC and COS sites at the item-level of the MHRM. Difference scores for each item were calculated by subtracting pretest score from posttest score. Rather than conducting independent t tests on all 30-items, which would markedly inflate alpha, independent t tests comparing CMHC and COS sites were conducted on the 10 items with the greatest factors loadings, as reported by Armstrong and colleagues (2014). These were the 10 items that comprise the shortened version of the MHRM, i.e., the MHRM-10. As reported by Armstrong and colleagues (2014), item factor loadings for the 10 items ranged from .66 to .79 and included the following items, from larger to smaller loadings:

- I feel good about myself.
- I feel at peace with myself.
- The way I think about things helps me to achieve my goals.
- I maintain a positive attitude for weeks at a time.
- I am making progress towards my goals.
- I still grow and change in positive ways despite my mental health problem.
o Even though I may still have problems, I value myself as a person of worth.
o Every day that I get up, I do something productive.
o I understand myself and have a good sense of who I am.
o I engage in work or other activities that enrich myself and the world around me.

**Research Question 3.** The third research question addressed whether changes in symptom distress following completion of the WMR program differs between CMHC and COS sites. Difference scores were calculated by subtracting pretest Total Symptom Distress score from posttest Total Symptom Distress score. An independent t test was conducted to compare symptom distress outcome differences between CMHC and COS sites.

**Research Question 4.** The fourth research question addressed whether there were MHRM outcome differences within CMHC and COS sites. Using MHRM domain-level difference scores, 2 MANOVAs were conducted. For the first MANOVA, CMHC site acted as the pseudo-IV and domain difference scores acted as the DVs. For the second MANOVA, COS site acted as the pseudo-IV and domain differences scores acted as the DVs. Independent t tests were conducted to assess for domain-level MHRM differences within CMHC and COS sites.

**Research Question 5.** The fifth research question addressed whether there were differences in program fidelity between CMHC and COS sites, as measured by the WMR-CSRS. An independent t test was conducted on the WMR-CSRS difference scores.
for CMHC and COS sites to assess for differences in fidelity between CMHC and COS sites.
Chapter Three

Results

Descriptive Statistics

There were a grand total of 1,462 WMR participants with pre, post, and/or follow-up outcome data, with 1,138 (76.5%), having participated at a CMHC site and 303 (20.4%), having participated at a COS site (47 participants were missing data for site). There were a total of 18 CMHC sites and seven COS sites. See Table 3 for demographic data and Table 4 for CMHC and COS site and participant data. Demographic data for the majority of participants is missing because demographic information was not regularly collected until several years after the program was first implemented. Demographic data began to be consistently collected from each site beginning in 2008.

Table 3

Complete Sample Demographics \([N = 1,441]\)

<table>
<thead>
<tr>
<th></th>
<th>CMHC ((N = 1138))</th>
<th>COS ((N = 303))</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>50.9 ((N = 230))</td>
<td>36.1 ((N = 39))</td>
</tr>
<tr>
<td>Female</td>
<td>49.1 ((N = 222))</td>
<td>63.9 ((N = 69))</td>
</tr>
<tr>
<td>Age</td>
<td>44.2 ((N = 335))</td>
<td>46.0 ((N = 103))</td>
</tr>
<tr>
<td>Ethnicity</td>
<td></td>
<td></td>
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<tr>
<td>White</td>
<td>73.8 ((N = 254))</td>
<td>66.3 ((N = 69))</td>
</tr>
<tr>
<td>Black</td>
<td>16.0 ((N = 55))</td>
<td>20.2 ((N = 21))</td>
</tr>
<tr>
<td>Hispanic</td>
<td>3.2 ((N = 11))</td>
<td>6.7 ((N = 7))</td>
</tr>
<tr>
<td>Category</td>
<td>Value 1</td>
<td>Value 2</td>
</tr>
<tr>
<td>---------------------------</td>
<td>----------</td>
<td>---------</td>
</tr>
<tr>
<td>Other</td>
<td>7.0 (N = 24)</td>
<td>6.8 (N = 7)</td>
</tr>
<tr>
<td>Education</td>
<td></td>
<td></td>
</tr>
<tr>
<td>K-12</td>
<td>15.7 (N = 54)</td>
<td>11.7 (N = 12)</td>
</tr>
<tr>
<td>High</td>
<td>31.2 (N = 136)</td>
<td>28.2 (N = 36)</td>
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<tr>
<td>School/GED/Trade</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Some</td>
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<td>42.8 (N = 44)</td>
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<tr>
<td>College/Associates</td>
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<td></td>
</tr>
<tr>
<td>Undergraduate Degree</td>
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<td>6.8 (N = 7)</td>
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<tr>
<td>Graduate Degree</td>
<td>0.3 (N = 6)</td>
<td>3.9 (N = 4)</td>
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<td>Living Situation</td>
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</tr>
<tr>
<td>Own or Rent</td>
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<td>66.0 (N = 68)</td>
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<td>Friend or Relative</td>
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<td>12.6 (N = 13)</td>
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<td>Group Home</td>
<td>7.0 (N = 24)</td>
<td>10.7 (N = 11)</td>
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<tr>
<td>Other</td>
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<td>2.9 (N = 3)</td>
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<tr>
<td>Part Time</td>
<td>5.5 (N = 19)</td>
<td>9.8 (N = 10)</td>
</tr>
<tr>
<td>Unemployed</td>
<td>40.4 (N = 139)</td>
<td>34.3 (N = 35)</td>
</tr>
<tr>
<td>Disabled</td>
<td>45.1 (N = 155)</td>
<td>42.2 (N = 43)</td>
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<tr>
<td>Other</td>
<td>8.1 (N = 28)</td>
<td>10.8 (N = 11)</td>
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<tr>
<td>Relationship Status</td>
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<td></td>
</tr>
<tr>
<td>Never Married</td>
<td>45.7 (N = 156)</td>
<td>39.8 (N = 41)</td>
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<tr>
<td>Married</td>
<td>7.6 (N = 26)</td>
<td>10.7 (N = 11)</td>
</tr>
<tr>
<td>Cohabitating</td>
<td>3.2 (N = 11)</td>
<td>6.8 (N = 7)</td>
</tr>
<tr>
<td>Separated</td>
<td>7.9 (N = 27)</td>
<td>5.8 (N = 6)</td>
</tr>
<tr>
<td>Division</td>
<td>Divorced (N = 101)</td>
<td>Widowed (N = 20)</td>
</tr>
<tr>
<td>---------------</td>
<td>----------------------</td>
<td>---------------------</td>
</tr>
<tr>
<td>Divorced</td>
<td>29.6</td>
<td>6.0</td>
</tr>
<tr>
<td>Widowed</td>
<td>30.1</td>
<td>6.8</td>
</tr>
</tbody>
</table>

*Note.* All demographics listed are based on demographics provided. Between 60 and 70 percent of demographic data was missing for the complete sample.

**Table 4**

*Complete Sample of CMHC and COS Participants*

<table>
<thead>
<tr>
<th>CMHC Site/Agency ((N = 18))</th>
<th>Participants ((N = 1,138))</th>
</tr>
</thead>
<tbody>
<tr>
<td>Southeast</td>
<td>287</td>
</tr>
<tr>
<td>GCB Mitchell Center</td>
<td>14</td>
</tr>
<tr>
<td>Daymont</td>
<td>67</td>
</tr>
<tr>
<td>GCB The Crossings</td>
<td>34</td>
</tr>
<tr>
<td>Neighboring</td>
<td>80</td>
</tr>
<tr>
<td>Redmond House</td>
<td>18</td>
</tr>
<tr>
<td>Carpenter House</td>
<td>6</td>
</tr>
<tr>
<td>COVA</td>
<td>87</td>
</tr>
<tr>
<td>Bridgeway</td>
<td>19</td>
</tr>
<tr>
<td>Maumee Valley Guidance Center</td>
<td>154</td>
</tr>
<tr>
<td>NORD</td>
<td>174</td>
</tr>
<tr>
<td>University of Toledo Psychology Clinic</td>
<td>13</td>
</tr>
<tr>
<td>Zepf Center</td>
<td>100</td>
</tr>
<tr>
<td>Franklin County Mental Health Court</td>
<td>20</td>
</tr>
<tr>
<td>Coleman</td>
<td>26</td>
</tr>
</tbody>
</table>
Research Questions 1 and 2

Research questions 1 and 2 assessed whether outcome differences exist between CMHC and COS sites at the domain-level and item-level of the MHRM. Before selecting the sample of participants to be included in the analyses, the subset of participants with both pre and post MHRM data were selected from the complete sample. This ensured that all participants included in the analyses had complete pre and post MHRM data. The subsample of participants with completed pre and post MHRM data consisted of a total of 664 participants, with 535 having participated at a CMHC site and 129 having participated at a COS site. The subsample included 8 CMHC sites and 4 COS sites.

The sample used for the analyses in questions 1 and 2 consisted of all 129 participants from the COS sites and 129 randomly selected participants from the CMHC
sites. See Table 5 for the demographics of the sample. As before, the majority of participants are missing demographic data. See Table 6 for a list of the sites included in the sample.

**Table 5**

**Sample Demographics**

<table>
<thead>
<tr>
<th></th>
<th>CMHC (N = 129)</th>
<th>COS (N = 129)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Percent (N on which % is based)</td>
<td>Percent (N on which % is based)</td>
</tr>
<tr>
<td>Gender</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>63.9 (N = 23)</td>
<td>41.8 (N = 23)</td>
</tr>
<tr>
<td>Female</td>
<td>36.1 (N = 13)</td>
<td>58.2 (N = 32)</td>
</tr>
<tr>
<td>Age</td>
<td>43.4 (N = 25)</td>
<td>46.5 (N = 54)</td>
</tr>
<tr>
<td>Ethnicity</td>
<td></td>
<td></td>
</tr>
<tr>
<td>White</td>
<td>82.1 (N = 23)</td>
<td>66.0 (N = 35)</td>
</tr>
<tr>
<td>Black</td>
<td>3.6 (N = 1)</td>
<td>24.5 (N = 13)</td>
</tr>
<tr>
<td>Hispanic</td>
<td>10.7 (N = 3)</td>
<td>5.7 (N = 3)</td>
</tr>
<tr>
<td>Other</td>
<td>3.6 (N = 1)</td>
<td>3.8 (N = 2)</td>
</tr>
<tr>
<td>Education</td>
<td></td>
<td></td>
</tr>
<tr>
<td>K-12</td>
<td>25.0 (N = 7)</td>
<td>9.6 (N = 4)</td>
</tr>
<tr>
<td>High</td>
<td>53.6 (N = 15)</td>
<td>30.8 (N = 16)</td>
</tr>
<tr>
<td>School/GED/Trade</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Some</td>
<td>14.3 (N = 4)</td>
<td>46.2 (N = 24)</td>
</tr>
<tr>
<td>College/Associates</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Undergraduate</td>
<td>7.1 (N = 2)</td>
<td>11.5 (N = 6)</td>
</tr>
<tr>
<td>Degree</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Graduate Degree 0.0 (N = 0) 1.9 (N = 1)

<table>
<thead>
<tr>
<th>Living Situation</th>
<th>Own or Rent</th>
<th>57.1 (N = 16)</th>
<th>75.5 (N = 40)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Friend or Relative</td>
<td>25.0 (N = 7)</td>
<td>13.2 (N = 7)</td>
<td></td>
</tr>
<tr>
<td>Group Home</td>
<td>17.9 (N = 5)</td>
<td>1.9 (N = 1)</td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td>0.0 (N = 0)</td>
<td>9.4 (N = 4)</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Employment</th>
<th>Full Time</th>
<th>0.0 (N = 0)</th>
<th>5.7 (N = 3)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Part Time</td>
<td>3.6 (N = 1)</td>
<td>17.0 (N = 9)</td>
<td></td>
</tr>
<tr>
<td>Unemployed</td>
<td>32.1 (N = 9)</td>
<td>30.2 (N = 16)</td>
<td></td>
</tr>
<tr>
<td>Disabled</td>
<td>50.0 (N = 14)</td>
<td>35.8 (N = 19)</td>
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<tr>
<td>Other</td>
<td>24.3 (N = 4)</td>
<td>11.3 (N = 6)</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Relationship Status</th>
<th>Never Married</th>
<th>44.4 (N = 12)</th>
<th>43.4 (N = 23)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Married</td>
<td>7.4 (N = 2)</td>
<td>9.4 (N = 5)</td>
<td></td>
</tr>
<tr>
<td>Cohabitating</td>
<td>0.0 (N = 0)</td>
<td>11.3 (N = 6)</td>
<td></td>
</tr>
<tr>
<td>Separated</td>
<td>11.1 (N = 3)</td>
<td>3.8 (N = 2)</td>
<td></td>
</tr>
<tr>
<td>Divorced</td>
<td>29.6 (N = 8)</td>
<td>28.3 (N = 15)</td>
<td></td>
</tr>
<tr>
<td>Widowed</td>
<td>7.4 (N = 2)</td>
<td>3.8 (N = 2)</td>
<td></td>
</tr>
</tbody>
</table>

*Note.* All demographics listed are based on demographics provided. Between 50 and 70 percent of demographic data were missing for the sample.

A power analysis conducted using G*Power found that a medium effect could be detected for our sample size of 129, assuming a Beta value of .80. A MANOVA was conducted to assess for domain-level MHRM differences as a function of CMHC or COS status. The results were not statistically significant, $F(7, 250) = 0.975, p = .450$, Wilk’s $\Lambda = .97$, indicating that there were no outcome differences between domains on the MHRM.
as a function of CMHC or COS status. Independent t tests of the 7 MRHM domains were also not statistically significant, with p values ranging from .39 to .78.

**Table 6**

*Sample of 129 Randomly Selected CMHC Participants and 129 COS Participants*

<table>
<thead>
<tr>
<th>Site/Agency</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>CMHCs</strong></td>
<td></td>
</tr>
<tr>
<td>Southeast</td>
<td>23</td>
</tr>
<tr>
<td>GCB Mitchell Center</td>
<td>1</td>
</tr>
<tr>
<td>Daymont</td>
<td>10</td>
</tr>
<tr>
<td>GCB The Crossings</td>
<td>12</td>
</tr>
<tr>
<td>Neighboring</td>
<td>15</td>
</tr>
<tr>
<td>Redmond House</td>
<td>1</td>
</tr>
<tr>
<td>Carpenter House</td>
<td>2</td>
</tr>
<tr>
<td>COVA</td>
<td>14</td>
</tr>
<tr>
<td>Bridgeway</td>
<td>3</td>
</tr>
<tr>
<td>Maumee Valley Guidance Center</td>
<td>18</td>
</tr>
<tr>
<td>NORD</td>
<td>18</td>
</tr>
<tr>
<td>University of Toledo Psychology Clinic</td>
<td>2</td>
</tr>
<tr>
<td>Zepf Center</td>
<td>6</td>
</tr>
<tr>
<td>Franklin County Mental Health Court</td>
<td>1</td>
</tr>
<tr>
<td>Counseling Center</td>
<td>3</td>
</tr>
<tr>
<td><strong>COSs</strong></td>
<td></td>
</tr>
<tr>
<td>GCB Recovery</td>
<td>10</td>
</tr>
<tr>
<td>Gathering Hope House</td>
<td>23</td>
</tr>
</tbody>
</table>
Independent *t* tests were conducted to assess for differences between CMHC and COS outcomes for the 10 MHRM items with the greatest factor loadings. The analyses were not statistically significant. Mean item difference scores ranged from a low of .16 (.84) for participants from consumer sites on item 28, “I engage in work or other activities that enrich myself and the world around me”, to a high of .48 (1.06) for participants from consumer sites on item 24, “I am making progress towards my goals”.

Difference scores for item 24 were greater for COS participants ($M = .48, SD = 1.06$) than for CMHC participants ($M = .26, SD = 1.14$), but the difference between CMHC and COS site average gains was not statistically significant, $t(256) = -1.59, p = .11, d = .20$. Difference scores on item 11, “Even though I may still have problems, I value myself as a person of worth”, were greater for CMHC participants ($M = .33, SD = .91$) than for COS participants ($M = .16, SD = .84$) but were likewise not statistically significant, $t(256) = 1.50, p = .14, d = .19$.

**Research Question 3**

Research question 3 assessed whether there were outcome differences in self-reported symptom distress as a function of CMHC or COS status. Only participants with complete pre and post Symptom Distress Scale data were included in the analysis. Of the 1,462 participants in the complete sample, 112 participants from CMHC sites and 28
participants from COS sites had complete pre and post Symptom Distress Scale data. The following sites were included: Southeast, GCB Recovery Center (COS), Gathering Hope House (COS), GCB Mitchell Center, Daymont, GCB The Crossings, Neighboring, Bridges (COS), Redmond House, Carpenter House, and Franklin County Mental Health Court. Symptom distress was assessed early in the WMR program’s implementation history; no demographic data was available.

A power analysis conducted using G*Power found that the sample size had optimal power, Beta > .80, to detect a large effect, but suboptimal power, Beta = .65, to detect a medium effect, for Symptom Distress Scale difference scores between CMHC and COS sites. An independent t test was conducted to assess for outcome differences on the Symptom Distress Scale between CMHC and COS participants. There were no statistically significant differences in symptom distress between participants from CMHC sites and participants from COS sites, t(138) = -0.49, p = .63, with participants from CMHC sites having mean symptom distress difference scores of -3.37 (SD = 8.28) and participants from COS sites having mean symptom distress difference scores of -2.54 (SD = 7.12).

**Research Question 4**

Research question 4 assessed whether MHRM domain-level outcomes differed within CMHC and COS sites. MHRM outcome differences were assessed using a sample that consisted of 20 randomly selected participants from each site with complete MHRM data on greater than 20 participants. Participants from sites with data on fewer than 20 participants were excluded. There were eight CMHC sites (Southeast, Daymont, GCB The Crossings, Neighboring, COVA, Maumee Valley Guidance Center, NORD, and Zepf
Center) and four COS sites (Gathering Hope House, Bridges, the Main Place, and the Thomas M. Wernert Center) with data on greater than 20 participants.

Of the included sites, the number of participants who had complete pre and post MHRM data ranged from 23 to 107. Twenty participants from each site were randomly selected to be included in the sample. One hundred and sixty participants from CMHC sites and 80 participants from COS sites were included in the sample. From the CMHC sites, 51.2 percent of participants were male, 48.8 percent were female, 63.2 percent were White, 28.9 percent were Black, 2.6 percent were employed full time, 44.7 percent were employed part time, and 44.7 percent were disabled. From the COS sites, 50 percent were male, 50 percent were female, 73.3 percent were White, 23.3 percent were Black, 6.7 percent were employed full time, 13.3 percent were employed part time, and 33.3 percent were disabled. MHRM total score difference scores ranged from 3.55 to 14.25, with a mean of 9.05 (SD = 18.30). See Figure 1 for the mean MHRM Total score difference scores (gain scores) for each site.

Participants from the following sites, with data on fewer than 20 participants, were excluded from the sample: GCB Mitchell Center, Redmond House, Carpenter House, Bridgeway, University of Toledo Psychology Clinic, Franklin County Mental Health Court, Coleman, Counseling Center, NOPH, GCB Recovery Center, and Phoenix place, with the latter 2 being COS sites. Of the excluded sites, the number of participants who had complete pre and post MHRM data ranged from 1 to 14.

Figure 1

*MHRM Total Score Difference Scores (“Gain Scores”) by Site*
Two MANOVAs were conducted to assess for differences in the MHRM domain difference scores within CMHC and COS sites. The results of the MANOVA for CMHC sites was statistically significant, $F(49, 745.640) = 1.42, p = .03$, Wilk’s $\Lambda = .64$, partial $\eta^2 = .06$, with a medium effect size. A one-way ANOVA indicated that the difference score for the MHRM domain Self-empowerment was significantly different between CMHC sites, $F(7, 152) = 2.03, p = .05$, partial $\eta^2 = .09$, with a medium effect size. Mean Self-Empowerment difference scores ranged from a high of 2.40 ($SD = 3.79$) at Maumee Valley Guidance Center to a low of -0.10 ($SD = 2.02$) at Neighboring. Additionally, the difference score for the domain Advocacy, though not statistically significant, $F(7, 152) = 1.82, p = .09$, partial $\eta^2 = .08$, was of medium effect size. Mean Advocacy difference scores ranged from a high of 2.15 ($SD = 3.59$) at COVA to a low of -0.60 ($SD = 3.12$) at Daymont.

![Mean Total MHRM Gain Scores by Site](chart.png)

<table>
<thead>
<tr>
<th>Site</th>
<th>Mean (SD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Southeast (N=20)</td>
<td>6.00 (SD=18.11)</td>
</tr>
<tr>
<td>Daymont (N=20)</td>
<td>3.55 (SD=19.70)</td>
</tr>
<tr>
<td>GCB The Crossing (N=20)</td>
<td>10.35 (SD=18.79)</td>
</tr>
<tr>
<td>Neighboring (N=20)</td>
<td>5.15 (SD=14.71)</td>
</tr>
<tr>
<td>Maumee Valley Guidance C.</td>
<td>10.70 (SD=20.94)</td>
</tr>
<tr>
<td>COS (N=20)</td>
<td>14.25 (SD=20.94)</td>
</tr>
<tr>
<td>NORD (N=20)</td>
<td>11.80 (SD=18.98)</td>
</tr>
<tr>
<td>Zeag Center (N=20)</td>
<td>12.40 (SD=16.57)</td>
</tr>
<tr>
<td>Gathering Hope House (COS</td>
<td>8.00 (SD=19.87)</td>
</tr>
<tr>
<td>(N=20)</td>
<td></td>
</tr>
<tr>
<td>Bridges (COS; N=20)</td>
<td>6.15 (SD=18.47)</td>
</tr>
<tr>
<td>The Main Place (COS; N=20)</td>
<td></td>
</tr>
<tr>
<td>Thomas M. Wenner (COS; N=20)</td>
<td></td>
</tr>
<tr>
<td>WMR Implementation Sites</td>
<td></td>
</tr>
</tbody>
</table>
The results of the MANOVA for COS sites was not statistically significant, $F(21,201.55) = 1.26$, $p = .209$, Wilk’s $\Lambda = .70$. However, a one-way ANOVA of the difference score for the MHRM domain Spirituality was statistically significant, $F(3, 76) = 3.45$, $p = .02$, partial $\eta^2 = .12$. Mean Spirituality difference scores ranged from a high of 1.25 ($SD = 1.97$) at Bridges to a low of -0.55 ($SD = 2.37$) at Gathering Hope House.

**Research Question 5**

Research question 5 assessed whether differences exist between CMHC and COS sites on the WMR-CSRS, which, for the present purpose, served as a proxy-fidelity scale. Participants were selected for inclusion in the sample if they had both pre and post WMR-CSRS data. There were a total of 455 participants with complete WMR-CSRS outcome data, with 372 participants being from CMHC sites and 83 participants being from COS sites.

From the CMHC sites, 55.3 percent of participants were male, 44.7 percent were female, 79.7 percent were White, 7.2 percent were Black, 0 percent worked full time, 7.2 percent worked part time, 36.2 percent were unemployed, and 47.8 percent were disabled. From the COS sites, 31 percent of participants were male, 69 percent were female, 74.1 percent were White, 14.8 percent were Black, 3.8 percent were employed full time, 19.2 percent were employed part time, 34.6 percent were unemployed, and 34.6 percent were disabled.

All 83 COS participants and 83 randomly selected CMHC participants were selected for inclusion in the analysis. A power analysis conducted using G*Power found the sample size to have optimal power, with a Beta of .80, to detect a difference of medium effect size between CMHC and COS sites for WMR-CSRS difference scores.
An independent *t* test was conducted to assess for differences in the WMR-CSRS difference scores between CMHC and COS sites. The results of the *t* test were not statistically significant, *t*(164) = 0.48, *p* = .64.

**Post Hoc Analyses**

Though there were no statistically significant MHRM outcome differences between CMHC and COS sites on either the MHRM domains or MHRM items, the differences in the MHRM domains of Self-Empowerment, Advocacy, and Spirituality domains within CMHC and COS sites had medium effect sizes. To better understand the MHRM outcome differences within CMHC and COS sites, using the sample of participants from the fourth research question, 2 one-way ANOVAs were conducted to assess for differences in Total MHRM difference scores within CMHC and COS sites. No significant differences were found for Total MHRM difference scores within CMHC sites, *F*(7, 152) = .86, *p* = .54, or within COS sites, *F*(3, 76) = .28, *p* = .84.

Two MANOVAs were conducted to assess for differences in MHRM item-level difference scores within CMHC and COS sites. No significant differences were found within CMHC sites, *F*(70, 840.643) = .91, *p* = .06, Wilk’s *λ* = .65, or within COS sites, *F*(30, 197.33) = .86, *p* = .11, Wilk’s *λ* = .70.

In addition, using the sample from research question 1, with 129 participants from COS sites and 129 randomly selected participants from CMHC sites, a paired samples *t* test was conducted for the Pre Total MHRM score and Post Total MHRM scores for the sample as a whole. The difference was statistically significant, *t*(257) = -8.02, *p* < .0001, with a large effect size, *d* = 1.00. Two paired samples *t* tests were then conducted for the Pre Total MHRM scores and Post Total MHRM scores for both CMHC and COS sites.
individually. The difference between Pre Total MHRM score and Post Total MHRM score for CMHC sites was statistically significant, \( t(128) = -5.68, p < .0001 \), with a large effect size, \( d = 1.00 \). Likewise, the difference between Pre Total MHRM score and Post Total MHRM score for COS sites was also statistically significant, \( t(128) = -5.64, p < .0001 \), with a large effect size, \( d = 1.00 \).

Finally, using the sample from research question 3, with 112 participants from CMHC sites and 28 participants from COS sites, with pre and post symptom distress scale data, two paired samples \( t \) tests were conducted for both CMHC and COS participants. The difference from Pre Total Symptom Distress Scale score to Post Total Symptom Distress Scale score for participants from CMHC sites was statistically significant, \( t(105) = 4.53, p < .0001 \), with a large effect size, \( d = .84 \). For the smaller sample of individuals from COS site who had both Pre and Post scores on the Symptom Distress Scale (\( N=28 \)), the difference from Pre Total Symptom Distress Scale score to Post Total Symptom Distress Scale score, while not statistically significant, \( t(26) = 1.671, p = .11 \), was a medium effect size, \( d = .66 \).
Chapter Four
Discussion

Summary

The purpose of this study was to determine whether there were outcome differences on the MHRM and the Symptom Distress Scale between and within CMHC and COS sites and to identify the unique strengths and weaknesses of CMHC and COS sites. MHRM differences were assessed at both the domain and item levels. Outcome differences on the WMR-CSRS, as a proxy for program fidelity, were also assessed. Post hoc analyses were conducted to better understand the MHRM outcome differences between and within CMHC and COS sites.

Key Findings

There were no statistically significant MHRM domain-level or item-level differences between CMHC and COS sites. Participants from COS sites had greater difference scores than participants from CMHC sites for item 24, “I am making progress towards my goals”, a small effect size, though the difference was not statistically significant. Likewise, participants from CMHC sites had greater difference scores than participants from COS sites for item 11, “Even though I may still have problems, I value myself as a person of worth”, a small effect size, though the difference was also not statistically significant. There were no significant differences in Symptom Distress Scale difference scores between participants from CMHC and COS sites.

There were significant outcome differences, of medium effect, for the MHRM Self-Empowerment domain within CMHC sites. There were also outcome differences within CMHC sites for the MHRM Advocacy domain, of medium effect. There were no
significant differences between MHRM domains within COS sites, though the outcome difference for the Spirituality domain was a medium effect size.

There were no statistically significant differences in fidelity between CMHC and COS sites as measured by the WMR-CSRS. Post hoc analyses found no significant differences on total MHRM difference scores within CMHC or COS sites. Post hoc analyses also found no significant difference on MHRM-item level difference scores within CMHC or COS sites.

Post hoc analyses found a significant difference between Pre Total MHRM scores and Post Total MHRM scores for CMHC and COS participants combined and for CMHC and COS participants individually. Notably, the differences between Pre Total MHRM scores and Post Total MHRM scores for CMHC and COS participants combined and for CMHC and COS participants individually were all large effect sizes of equal magnitude, $d = 1.00$. This effect size is comparable to the large effect size also found with the IMR program (Mueser et al., 2006; Salyers, Godfrey, McGuire, Gearhart, Rollins, & Boyle, 2009). Post hoc analysis found a medium effect size for the difference between Pre Symptom Distress Scale Total Score and Post Symptom Distress Scale Total Score for CMHC and COS sites.

**Implications**

The results suggest that WMR program outcome differences between and within CMHC and COS sites are few and far between, and those differences that were detected were only of small effect size. No significant MHRM domain or item-level outcome differences were detected between CMHC and COS sites. Likewise, although there were significant reductions in average Symptom Distress Scale score for both the CMHC and
COS sites, there were no differences in Symptom Distress Scale outcomes comparing between CMHC and COS sites. While it might be reasonable to expect to see greater decreases in symptom distress from participants at CMHC sites, given that one of the co-facilitators at CMHC sites is a trained mental health professional, this was not found to be the case. Participants in both COS and CMHC sites showed equally significant reductions in symptom distress following the completion of the WMR program.

There are multiple possible explanations for why the reduction in symptom distress occurs and why there are not symptom distress outcome differences between CMHC and COS sites. One explanation is that the reduction in symptom distress is a result of the individual treatment that participants are receiving from their respective CMHC or COS site. It would then be concluded that the individual treatment received at both CMHC and COS sites are equally effective in reducing symptom distress. Another explanation is that the recovery process itself facilitates a reduction in symptom distress. It’s possible that as participants become more empowered and educated about their illness, their subjective distress resulting from their symptoms decreases. Of course, some combination of these two explanations may ultimately be responsible for the reduction in symptom distress.

There were several outcome differences within CMHC and COS sites. Participants from CMHC sites showed significant outcome differences on the Self-Empowerment (items 5 to 8) and Advocacy (items 27 to 30) domains of the MHRM. Self-empowerment and advocacy are both crucial components of the recovery process and it’s unclear why some CMHC sites are better at fostering empowerment and advocacy than others.
Outcome differences in the Spirituality (items 25 and 26) domain, while not statistically significant, were of medium effect size. The spirituality items of the MHRM were added after its initial development in response to feedback from consumers. One explanation for why COS sites differ from one another in Spirituality domain outcomes are that some COS sites may place greater importance on spirituality than other COS sites. This possible explanation would explain why there is no difference in Spirituality domain outcomes between CMHC and COS sites, as there may be select COS sites that emphasize spirituality in the recovery process.

Post hoc analyses found no significant outcome differences within CMHC and COS sites for total MHRM scores or for MHRM items. Post hoc analyses found significant differences between Pre MHRM Total scores and Post MHRM Total scores for both CMHC and COS sites together and CMHC and COS sites individually. There was also a significant difference between Pre Symptom Distress Scale score and Post Symptom Distress Scale score for CMHC and COS sites together and for CMHC sites individually. The effect sizes for the differences between pre and post measures was medium to large, with the effect sizes of the differences between Pre MHRM Total Scores and Post MHRM Total scores for CMHC and COS sites together and for CMHC and COS sites individually being equal in magnitude, $d = 1.00$.

These findings confirm that though there are no clear recovery differences between participants at CMHC and COS sites, participants from both CMHC and COS sites are recovering, with equal magnitude, as a function of the WMR program. This finding suggests that the WMR program is a robust program that can be effectively implemented at both traditional CMHC and COS sites.
Though the difference between Pre Symptom Distress Scale score and Post Symptom Distress Scale score for COS sites was not statistically significant, the sample size was small (N = 28) and the effect size for the difference was medium, $d = .66$. It is likely that the absence of statistical significance for the difference between pre and post Symptom Distress Scale scores was a result of sample size.

Overall, the findings suggest that the outcome differences within CMHC and COS sites are actually greater than the outcome differences between CMHC and COS sites. Thus, there are no clear advantages or disadvantages to completing the WMR program at a CMHC or COS site. This is an unexpected conclusion. Some may expect CMHC sites to show superior outcomes compared to COS sites because they are operated by trained mental health professionals who most likely have therapeutic skills that non-mental health professionals lack. Others may expect COS sites to show superior outcomes compared to COS sites because co-facilitators in recovery have an experiential understanding of recovery that mental health professionals lack.

It might be reasonable to expect that CMHC and COS sites are both uniquely equipped to facilitate particular, differing components of the recovery process. Although these hypotheses are plausible, the present findings suggest that both CMHC and COS sites are equally effective at facilitating the recovery process and that there is more similarity than difference in the implementation and outcomes associated with the WMR program. These results also suggest that adherence to WMR program standards and fidelity to the WMR curriculum and philosophy is consistent across COS and CMHC site. In turn, this suggests that the training in WMR program implementation is equally good and/or equally effective across COS and CMHC implementation sites.
Limitations

It is common for studies utilizing archival data to construct a sample of participants from a larger population of participants based on relevant selection criteria (e.g., Byrd, Patterson, & Turchik, 2010; Erickson, 2005; McQuade & Gromova, 2015). Unfortunately, the present study’s research questions and archival dataset did not lend itself to the construction of a single sample. Agencies were not equally represented in the dataset and missing data was the rule rather than the exception. In the present study, four samples were constructed based on four different selection criteria relevant to the research questions addressed. The construction of multiple samples for a single study is not typical. In a sense, the present study can be conceptualized as four related studies utilizing the same archival dataset. With this being the case, alpha is inflated and the analyses are at an increased risk of Type I error.

Though no outcome differences were found between CMHC and COS sites on the MHRM, a ceiling effect has been observed for the MHRM (Chang et al., 2013), which may limit the ability to detect differences in recovery between and within CMHC and COS sites. If most WMR participants reach the ceiling of the measure, there is no way to distinguish the participants that maximally recover from those that minimally recover. Thus, it’s possible that CMHC or COS sites have, in actuality, an advantage in facilitating recovery, but that this advantage cannot be detected with the MHRM, in its current state. WMR outcome research would benefit from assessing higher levels of recovery, which would allow for better discrimination between the outcomes of participants and sites.
One of the major limitations of the collected WMR outcome data is that there were very wide variations in the completeness of the data that was collected by each site for any given WMR group and attendance data and drop out data was not available for analysis. Thus, there is, at present, no way of determining whether there were differences in WMR participant retention rates between and within CMHC and COS sites. Though the archival dataset contains data on participants who only completed pre WMR program measures, there’s no way of discerning whether the participant dropped out of the program or simply declined to complete the post WMR program measures or whether the site itself failed to collect post WMR measures for a particular group. Likewise, it is also not possible to determine whether those individuals who are missing post WMR measures participated in some, all, or none of the WMR sessions after completing the pre WMR assessment. Nevertheless, it’s likely that certain sites have greater retention rates than others. It’s also possible that the WMR program’s positive outcomes are inflated due to having only collected outcomes from the participants who benefited from the program and thus remained in the program.

While the sample had enough power to detect overall differences on the MHRM domain difference scores between CMHC and COS sites, the sample constructed to assess differences within CMHC and COS sites (using 20 participants from each site) did not have optimal power to detect a difference of medium effect, with Beta of .80. Nevertheless, this was the sample in which significant differences were found. This suggests that with a greater sample size, MHRM outcome differences would become more apparent within CMHC and COS sites. This also adds support for the finding that outcome differences are greater within CMHC and COS sites than between CMHC and
COS sites, as if there were differences between CMHC and COS sites, this study would have detected those differences.

Though each site plays an important role in the quality of WMR implementation, the co-facilitators of each WMR program likely play a greater role. How much co-facilitators contribute to the outcome variance is uncertain, and, at present, data has not been collected on the impact of co-facilitators on WMR outcomes.

For this study, the WMR-CSRS acted as a proxy for a fidelity measure. While not definitive, the null results of the WMR-CSRS difference scores and the significant results of the post hoc paired samples t tests of Pre and Post Total MHRM scores suggest that the WMR program is implemented effectively across sites. With both identical and large effect sizes, CMHC and COS sites appear equally effective in terms of facilitating recovery.

**Future Directions**

A well-designed RCT evaluating the effectiveness of WMR for CMHC and COS sites would better illuminate the recovery outcome differences or lack thereof between CMHC and COS sites, as well as detect other differences between sites, e.g., fidelity, retention rates, co-facilitator impact on outcomes, etc. Broadly, future WMR research should address additional factors that contribute to outcome differences in the WMR program.

The impact of co-facilitators on the outcomes of the WMR program is currently unknown. It’s likewise unknown if differing pairs of co-facilitators yield differing WMR outcomes. It’s possible that certain co-facilitators may be particular adept at implementing the WMR program and may uniquely contribute to participants’ outcomes.
WMR outcome research would benefit from teasing apart the impact of co-facilitators on recovery and symptom distress reduction. Research would also benefit from assessing WMR outcome difference across co-facilitators mediated by fidelity. It’s possible that certain co-facilitators maintain greater fidelity to the WMR program leading to greater recovery outcomes.

The role of the participant’s relationship with his or her co-facilitators and with his or her fellow group members and its impact on WMR outcomes is unknown. Better assessing and understanding the impact of relational factors on WMR outcomes and, more broadly, on the recovery process, can contribute to WMR refinements in implementation and/or in co-facilitator training.

WMR measures are currently completed at pre, post, and follow-up intervals. Having participants complete recovery measures more frequently would better illuminate the trajectory of participants in the WMR program and allow for researchers to evaluate the length of the WMR program and its impact on outcome. Understanding when in the WMR program participants show greatest improvement would also help to identify the most beneficial modules included in the WMR program. In addition, identifying the specific WMR modules with the greatest impact would allow researchers to discern the “active ingredients” of the WMR program.

In conclusion, the WMR recovery outcome differences within CMHC and COS sites were greater than the outcome differences between CMHC and COS sites. It is also worth noting that the outcome differences even within CMHC and COS sites were quite small. The results suggest that the WMR program is a robust treatment that can be effectively implemented across diverse settings. Finally, the results demonstrate that
agencies with differing philosophies and, sometimes, differing immediate goals can effectively facilitate the recovery process and reduce symptom distress in the individuals most in need and most often neglected.
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Appendix A

Illness Management and Recovery Program Modules

1) Recovery strategies
   - Sets optimistic tone
   - Helps people define what recovery means to them
   - Helps people identify recovery goals and break them down into small steps

2) Practical facts about mental illness
   - Provides information about schizophrenia, bipolar disorder, and major depression
   - Describes how diagnoses are made, describes the symptoms of illnesses, and provides information about prevalence
   - Gives examples of famous people with a psychiatric disorder

3) The stress-vulnerability model and strategies for treatment
   - Establishes foundation for treatment
   - Describes how psychiatric disorders are biological in nature and how their severity and course can be affected by stress
   - Provides strategies for minimizing the effects of both biological vulnerability (for example, taking medications and avoiding drugs and alcohol) and stress (for example, learning coping strategies and improving social support)

4) Building social support
• Helps people evaluate their satisfaction with their social supports, identify places to meet people, and develop strategies for increasing closeness in personal relationships

• Using social skills training techniques to help clients learn needed skills in the session and practice them in the community

5) Using medication effectively

• Provides information about the role of medications and how they can help people achieve their goals

• Discusses benefits and side effects of medications

• Teaches clients to use strategies for taking medications as part of their daily routine (that is, behavioral tailoring)

6) Drug and alcohol use

• Provides information about commonly used substances and their effects

• Identifies common reasons that people use substances

• Helps people explore the pros and cons of using substances

• Helps people who want to change their substance use to develop a personal sobriety plan

7) Reducing relapses

• Helps people examine their past relapses in order to prevent future ones

• Identifies triggers and early warning signs of relapse

• Helps clients develop their own relapse prevention plan, which they are encouraged to share with staff and significant others
• Helps clients rehearse elements of their relapse prevention plan

8) Coping with stress

• Helps clients identify sources of stress in their lives and learn to recognize their own physical and emotional reactions to stressors
• Teaches strategies for coping with stress, including the relaxation techniques of relaxed breathing, imagining a peaceful scene, and muscle relaxation

9) Coping with problems and symptoms

• Teaches clients a step-by-step problem-solving method
• Helps clients identify and amplify skills they are already using for coping with persistent symptoms, such as hearing voices
• Teaches additional coping skills (for example, using positive self-talk to respond to hearing voices)

10) Getting your needs met in the mental health system

• Provides an overview of the mental health system, including services and programs commonly offered by community health centers (for example, social skills training groups and vocational services)
• Explains the financial benefits (for example, Social Security Disability Income) and insurance benefits (for example, Medicare and Medicaid) to which clients may be entitled
• Provides strategies for advocating for oneself in the mental health system

In the most recent, third edition of the IMR program, an 11th module, living a healthier lifestyle, was included (McGuire et al., 2014).
## Appendix B

### Illness Management and Recovery Scale

1. Progress towards personal goals: in the past 3 months, s/he has come up with...

<table>
<thead>
<tr>
<th>No personal goals</th>
<th>A personal goal, but has not done anything to finish the goal</th>
<th>A personal goal and made a little way toward finishing it</th>
<th>A personal goal and has gotten pretty far in finishing the goal</th>
<th>A personal goal and has finished it</th>
</tr>
</thead>
</table>

2. **Knowledge**: How much do you feel your client knows about symptoms, treatment, coping strategies (coping methods), and medication?

<table>
<thead>
<tr>
<th>Not very much</th>
<th>A little</th>
<th>Some</th>
<th>Quite a bit</th>
<th>A great deal</th>
</tr>
</thead>
</table>

3. **Involvement of family and friends in my mental health treatment**: How much are people like family, friends, boyfriends/girlfriends, and other people who are important to your client (outside the mental health agency) involved in his/her mental health treatment?

<table>
<thead>
<tr>
<th>Not at all</th>
<th>Only when there is a serious problem</th>
<th>Sometimes, like when things are starting to go badly</th>
<th>Much of the time</th>
<th>A lot of the time and they really help with his/her mental health</th>
</tr>
</thead>
</table>

4. **Contact with people outside of my family**: In a normal week, how many times does s/he talk to someone outside of his/her family (like a friend, co-worker, classmate, roommate, etc.)

<table>
<thead>
<tr>
<th>0 times/week</th>
<th>1-2 times/week</th>
<th>3-4 times/week</th>
<th>6-7 times/week</th>
<th>8 or more times/week</th>
</tr>
</thead>
</table>

5. **Time in Structured Roles**: How much time does s/he spend working, volunteering, being a student, being a parent, taking care of someone else or someone else’s house or apartment? That is, how much time does s/he spend in doing activities for or with another person that are expected of him/her? (This would not include self-care or personal home maintenance.)

<table>
<thead>
<tr>
<th>2 hours or less/week</th>
<th>3-5 hours/week</th>
<th>6-15 hours/week</th>
<th>16-20 hours/week</th>
<th>More than 20 hours/week</th>
</tr>
</thead>
</table>

6. **Symptom distress**: How much do symptoms bother him/her?

<table>
<thead>
<tr>
<th>Symptoms really bother him/her a lot</th>
<th>Symptoms bother him/her quite a bit</th>
<th>Symptoms bother him/her somewhat</th>
<th>Symptoms bother him/her very little</th>
<th>Symptoms don’t bother him/her at all</th>
</tr>
</thead>
</table>

7. **Impairment of functioning**: How much do symptoms get in the way of him/her doing things that s/he would like to do or need to do?

<table>
<thead>
<tr>
<th>Symptoms really get in his/her way a lot</th>
<th>Symptoms get in his/her way quite a bit</th>
<th>Symptoms get in his/her way somewhat</th>
<th>Symptoms get in his/her way very little</th>
<th>Symptoms don’t get in his/her way at all</th>
</tr>
</thead>
</table>

8. **Relapse Prevention Planning**: Which of the following would best describe what s/he knows and has done in order not to have a relapse?

<table>
<thead>
<tr>
<th>Doesn’t know how to prevent relapses</th>
<th>Knows a little, but hasn’t made a relapse prevention plan</th>
<th>Knows 1 or 2 things to do, but doesn’t have a written plan</th>
<th>Knows several things to do, but doesn’t have a written plan</th>
<th>Has a written plan and has shared it with others</th>
</tr>
</thead>
</table>

9. **Relapse of Symptoms**: When is the last time s/he had a relapse of symptoms (that is, when his/her symptoms have gotten much worse)?

<table>
<thead>
<tr>
<th>Within the last month</th>
<th>In the past 2 to 3 months</th>
<th>In the past 4 to 6 months</th>
<th>In the past 7 to 12 months</th>
<th>Hasn’t had a relapse in the past year</th>
</tr>
</thead>
</table>
10. Psychiatric Hospitalizations: When is the last time s/he has been hospitalized for mental health or substance abuse reasons?

<p>| | | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Within the last month</td>
<td>In the past 2 to 3 months</td>
<td>In the past 4 to 6 months</td>
<td>In the past 7 to 12 months</td>
</tr>
</tbody>
</table>

11. Coping: How well do feel your client is coping with his/her mental or emotional illness from day to day?

<table>
<thead>
<tr>
<th></th>
<th>Not well at all</th>
<th>Not very well</th>
<th>Alright</th>
<th>Well</th>
<th>Very well</th>
</tr>
</thead>
</table>

12. Involvement with self-help activities: How involved is s/he in consumer run services, peer support groups, Alcoholics Anonymous, drop-in centers, WRAP (Wellness Recovery Action Plan), or other similar self-help programs?

<table>
<thead>
<tr>
<th></th>
<th>Doesn’t know about any self-help activities</th>
<th>Knows about some self-help activities, but isn’t interested</th>
<th>Interested in self-help activities, but hasn’t participated in the past year</th>
<th>Participates in self-help activities occasionally</th>
<th>Participates in self-help activities regularly</th>
</tr>
</thead>
</table>

13. Using Medication Effectively: (Don’t answer this question if his/her doctor has not prescribed medication). How often does s/he take his/her medication as prescribed?

<table>
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<tr>
<th></th>
<th>Never</th>
<th>Occasionally</th>
<th>About half the time</th>
<th>Most of the time</th>
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</tr>
</thead>
</table>

Check here if the client is not prescribed psychiatric medications.

14. Impairment of functioning through alcohol use: Drinking can interfere with functioning when it contributes to conflict in relationships, or to financial, housing and legal concerns, to difficulty showing up at appointments or focusing during them, or to increases of symptoms. Over the past 3 months, did alcohol use get in the way of his/her functioning?

<table>
<thead>
<tr>
<th></th>
<th>Alcohol use really gets in his/her way a lot</th>
<th>Alcohol use gets in his/her way quite a bit</th>
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<th>Alcohol use gets in his/her way very little</th>
<th>Alcohol use is not a factor in his/her functioning</th>
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15. Impairment of functioning through drug use: Using street drugs, and misusing prescription or over-the-counter medication can interfere with functioning when it contributes to conflict in relationships, or to financial, housing and legal concerns, to difficulty showing up at appointments or focusing during them, or to increases of symptoms. Over the past 3 months, did drug use get in the way of his/her functioning?

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<th>Drug use gets in his/her way somewhat</th>
<th>Drug use gets in his/her way very little</th>
<th>Drug use is not a factor in his/her functioning</th>
</tr>
</thead>
</table>

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Appendix C

Wellness Management and Recovery Program Modules

1) Mental health recovery
   - Developing a personal definition of recovery
   - Wellness Wheel and goal setting

2) Wellness
   - Discussion of caring for yourself
   - Holistic wellness, including physical, mental, spiritual and social health

3) An understanding of mental health
   - Psychoeducation
   - Substance use and mental health
   - Coping with stigma

4) Role of medication in recovery and wellness
   - Beliefs and feelings about medication
   - Importance of medication adherence

5) Learning to manage symptoms and side effects
   - Identifying ways to cope with mental health symptoms
   - Medication side effects

6) Effective communication
   - Assertive communication
   - Identifying helpful and unhelpful ways of communication

7) Communication with providers
• Individual skills to help effectively communicate with mental health professionals

8) Coordinating your care
• Empowering individuals to take a more active role in their care
• Becoming an advocate
• Crisis planning

9) Building social support and involving others
• Explore importance of social support in recovery process

10) Planning for wellness
• Relapse reduction
• Problem-solving

*Note. Adapted from Bullock and colleagues (2013).*
Appendix D

Mental Health Recovery Measure (MHRM)

(Young & Bullock, 2003)

Your First Name: ___________________________ Last Four Numbers of Your SSN: __________

The goal of this questionnaire is to find out how you view your own current recovery process. The mental health recovery process is complex and is different for each individual. There are no right or wrong answers. Please read each statement carefully, with regard to your own current recovery process, and indicate how much you agree or disagree with each item by filling in the appropriate circle.

SD = Strongly Disagree    D = Disagree    NS = Not Sure    A = Agree    SA = Strongly Agree

<p>| | | | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>I work hard towards my mental health recovery.</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
</tr>
<tr>
<td>2.</td>
<td>Even though there are hard days, things are improving for me.</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
</tr>
<tr>
<td>3.</td>
<td>I ask for help when I am not feeling well.</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
</tr>
<tr>
<td>4.</td>
<td>I take risks to move forward with my recovery.</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
</tr>
<tr>
<td>5.</td>
<td>I believe in myself.</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
</tr>
<tr>
<td>6.</td>
<td>I have control over my mental health problems.</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
</tr>
<tr>
<td>7.</td>
<td>I am in control of my life.</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
</tr>
<tr>
<td>8.</td>
<td>I socialize and make friends.</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
</tr>
<tr>
<td>9.</td>
<td>Every day is a new opportunity for learning.</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
</tr>
<tr>
<td>10.</td>
<td>I still grow and change in positive ways despite my mental health problems.</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
</tr>
<tr>
<td>11.</td>
<td>Even though I may still have problems, I value myself as a person of worth.</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
</tr>
<tr>
<td>12.</td>
<td>I understand myself and have a good sense of who I am.</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
</tr>
<tr>
<td>13.</td>
<td>I eat nutritious meals everyday.</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
</tr>
<tr>
<td>14.</td>
<td>I go out and participate in enjoyable activities every week.</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
</tr>
<tr>
<td>15.</td>
<td>I make the effort to get to know other people.</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
</tr>
</tbody>
</table>
16. I am comfortable with my use of prescribed medications.  O O O O O O

17. I feel good about myself.  O O O O O O

18. The way I think about things helps me to achieve my goals.  O O O O O O

19. My life is pretty normal.  O O O O O O

20. I feel at peace with myself.  O O O O O O

21. I maintain a positive attitude for weeks at a time.  O O O O O O

22. My quality of life will get better in the future.  O O O O O O

23. Every day that I get up, I do something productive.  O O O O O O

24. I am making progress towards my goals.  O O O O O O

25. When I am feeling low, my religious faith or spirituality helps me feel better.  O O O O O O

26. My religious faith or spirituality supports my recovery.  O O O O O O

27. I advocate for the rights of myself and others with mental health problems.  O O O O O O

28. I engage in work or other activities that enrich myself and the world around me.  O O O O O O

29. I cope effectively with stigma associated with having a mental health problem.  O O O O O O

30. I have enough money to spend on extra things or activities that enrich my life.  O O O O O O

*Thank you for completing this measure.*

The MHRM® was developed with the help of mental health consumers by researchers at the University of Toledo, Department of Psychology. This research was supported through a grant from the Ohio Department of Mental Health, Office of Program Evaluation and Research. For further information, please contact Wesley A. Bullock, Ph.D. at (419) 530-2721 or email: wesley.bullock@utoledo.edu.
Appendix E

WMR Client Self-Rating Scale

ID Number: ___________________________       Date: ______

*Please take a few minutes to fill out this survey. We are interested in the way things are for you, so there is no right or wrong answer. If you are not sure about a question, just answer it as best as you can.*

*Just circle the number of the answer that fits you best.*

1. **Progress towards personal goals:** In the past 3 months, I have come up with…

<table>
<thead>
<tr>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>No personal goals.</td>
<td>A personal goal, but have not done anything to finish my goal.</td>
<td>A personal goal and made it a little way toward finishing it.</td>
<td>A personal goal and have gotten pretty far in finishing my goal.</td>
<td>A personal goal and have finished it.</td>
</tr>
</tbody>
</table>

2. **Knowledge:** How much do you feel like you know about symptoms, treatment, coping strategies (coping methods), and medication?

<table>
<thead>
<tr>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not very much.</td>
<td>A little.</td>
<td>Some</td>
<td>Quite a bit.</td>
<td>A great deal</td>
</tr>
</tbody>
</table>

3. **Involvement of family and friends in my mental health treatment:** How much are family members, friends, boyfriend/girlfriend, and other people who are important to you (outside your mental health agency) involved in your mental health treatment?

<table>
<thead>
<tr>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not at all</td>
<td>Only when there is a serious problem</td>
<td>Sometimes, like when things are starting to go badly</td>
<td>Much of the time</td>
<td>A lot of the time and they really help me with my mental health</td>
</tr>
</tbody>
</table>
4. Contact with people outside of my family: In a normal week, how many times do you talk to someone outside of your family (like a friend, co-worker, classmate, roommate, etc.)

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0 times/week</td>
<td>1-2 times/week</td>
<td>3-4 times/week</td>
<td>6-7 times/week</td>
<td>8 or more times/week</td>
</tr>
</tbody>
</table>

5. Time in Structured Roles: How much time do you spend working, volunteering, being a student, being a parent, taking care of someone else or someone else’s house or apartment? That is, how much time do you spend in doing activities for or with another person that are expected of you? (This would not include self-care or personal home maintenance.)

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2 hours or less/week</td>
<td>3-5 hours/week</td>
<td>6 to 15 hours/week</td>
<td>16-30 hours/week</td>
<td>More than 30 hours/week</td>
</tr>
</tbody>
</table>

6. Symptom distress: How much do your symptoms bother you?

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>My symptoms really bother me a lot.</td>
<td>My symptoms bother me quite a bit.</td>
<td>My symptoms bother me somewhat.</td>
<td>My symptoms bother me very little.</td>
<td>My symptoms don’t bother me at all.</td>
</tr>
</tbody>
</table>

7. Impairment of functioning: How much do your symptoms get in the way of you doing things that you would like to or need to do?

<table>
<thead>
<tr>
<th></th>
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<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>My symptoms really get in my way a lot.</td>
<td>My symptoms get in my way quite a bit.</td>
<td>My symptoms get in my way somewhat.</td>
<td>My symptoms get in my way very little.</td>
<td>My symptoms don’t get in my way at all.</td>
</tr>
</tbody>
</table>
8. Relapse Prevention Planning: Which of the following would best describe what you know and what you have done in order not to have a relapse?

<table>
<thead>
<tr>
<th></th>
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<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>I don’t know how to prevent relapses.</td>
<td>I know a little, but I haven’t made a relapse prevention plan.</td>
<td>I know 1 or 2 things I can do, but I don’t have a written plan.</td>
<td>I have several things that I can do, but I don’t have a written plan.</td>
<td>I have a written plan that I have shared with others.</td>
</tr>
</tbody>
</table>

9. Relapse of Symptoms: When is the last time you had a relapse of symptoms (that is, when your symptoms have gotten much worse)?

<table>
<thead>
<tr>
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<th>4</th>
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</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Within the last month</td>
<td>In the past 2 to 3 months</td>
<td>In the past 4 to 6 months</td>
<td>In the past 7 to 12 months</td>
<td>I haven’t had a relapse in the past year</td>
</tr>
</tbody>
</table>

10. Psychiatric Hospitalizations: When is the last time you have been hospitalized for mental health or substance abuse reasons?

<table>
<thead>
<tr>
<th></th>
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<tr>
<td></td>
<td>Within the last month</td>
<td>In the past 2 to 3 months</td>
<td>In the past 4 to 6 months</td>
<td>In the past 7 to 12 months</td>
<td>I haven’t been hospitalized in the past year</td>
</tr>
</tbody>
</table>

11. Coping: How well do feel like you are coping with your mental or emotional illness from day to day?

<table>
<thead>
<tr>
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<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Not well at all</td>
<td>Not very well</td>
<td>Alright</td>
<td>Well</td>
<td>Very well</td>
</tr>
</tbody>
</table>
12. Involvement with self-help activities: How involved are you in consumer run services, peer support groups, Alcoholics Anonymous, drop-in centers, WRAP (Wellness Recovery Action Plan), or other similar self-help programs?

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</thead>
<tbody>
<tr>
<td>I don’t know about any self-help activities.</td>
<td>I know about some self-help activities, but I’m not interested</td>
<td>I’m interested in self-help activities, but I have not participated in the past year</td>
<td>I participate in self-help activities occasionally.</td>
<td>I participate in self-help activities regularly.</td>
<td></td>
</tr>
</tbody>
</table>

13. Using Medication Effectively: (Don’t answer this question if your doctor has not prescribed medication for you). How often do you take your medication as prescribed?

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<th>5</th>
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</thead>
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<td>Never</td>
<td>Occasionally</td>
<td>About half the time.</td>
<td>Most of the time.</td>
<td>Every day.</td>
<td></td>
</tr>
</tbody>
</table>

14. Functioning affected by alcohol use. Drinking can interfere with functioning when it contributes to conflict in relationships, or to money, housing and legal concerns, to difficulty showing up at appointments or paying attention during them, or to increased symptoms. Over the past 3 months, how much did drinking get in the way of your functioning?

<table>
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<td>Alcohol use is not a factor in my functioning</td>
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15. **Functioning affected by drug use.** Using street drugs, and misusing prescription or over-the-counter medication can interfere with functioning when it contributes to conflict in relationships, or to money, housing and legal concerns, to difficulty showing up at appointments or paying attention during them, or to increased symptoms. Over the past 3 months, how much did drug use get in the way of your functioning?

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