7-15-2011

Mindfulness Based Relapse Prevention for Clients Dually Diagnosed with Psychosis: A Review of the Literature

Lisa Woodrich
Pacifiック University

Recommended Citation

This Thesis is brought to you for free and open access by the College of Health Professions at CommonKnowledge. It has been accepted for inclusion in School of Graduate Psychology by an authorized administrator of CommonKnowledge. For more information, please contact CommonKnowledge@pacificu.edu.
Mindfulness Based Relapse Prevention for Clients Dually Diagnosed with Psychosis: A Review of the Literature

Abstract
Psychotic disorders have long been associated with inflated rates of co-occurring substance use disorders, termed dual diagnosis. Substance use has devastating effects on symptom severity, healthcare costs, and long term outcomes in this already at risk population. Although there has been great success in developing programs with coordinated care, there has been some delay in cultivating psychosocial interventions that address both disorders in a cohesive manner. Mindfulness Based Relapse Prevention (MBRP) may fill the treatment gap for dually diagnosed clients. The use of mindfulness strategies for psychosis has shown positive effects in the reduction of anxiety, hospitalizations, experiential avoidance, and distress surrounding psychotic symptoms. Similarly, the use of mindfulness is gaining momentum in the treatment of substance use. A fusion of mindfulness techniques and Relapse Prevention, MBRP provides a wide lens from which to view the complexities of concurrent disorders, providing a common skill set. In this thesis, evidence for the use of MBRP for clients who are dually diagnosed with psychotic disorders is reviewed.

Degree Type
Thesis

Rights
Terms of use for work posted in CommonKnowledge.

Comments

Library Use: LIH

This thesis is available at CommonKnowledge: http://commons.pacificu.edu/spp/159
Copyright and terms of use

If you have downloaded this document directly from the web or from CommonKnowledge, see the “Rights” section on the previous page for the terms of use.

If you have received this document through an interlibrary loan/document delivery service, the following terms of use apply:

Copyright in this work is held by the author(s). You may download or print any portion of this document for personal use only, or for any use that is allowed by fair use (Title 17, §107 U.S.C.). Except for personal or fair use, you or your borrowing library may not reproduce, remix, republish, post, transmit, or distribute this document, or any portion thereof, without the permission of the copyright owner. [Note: If this document is licensed under a Creative Commons license (see “Rights” on the previous page) which allows broader usage rights, your use is governed by the terms of that license.]

Inquiries regarding further use of these materials should be addressed to: CommonKnowledge Rights, Pacific University Library, 2043 College Way, Forest Grove, OR 97116, (503) 352-7209. Email inquiries may be directed to: copyright@pacificu.edu

This thesis is available at CommonKnowledge: http://commons.pacificu.edu/spp/159
# TABLE OF CONTENTS

ABSTRACT........................................................................................................... iii

ACKNOWLEDGEMENTS.................................................................................... iv

A DEFINITION OF TERMS..................................................................................1

INTRODUCTION..................................................................................................3

METHODS...........................................................................................................5

RESULTS............................................................................................................5

Psychosis as a Part of the Spectrum................................................................. 5

Mindfulness for Psychosis.................................................................................14

Co-Occurring Disorders....................................................................................23

Mindfulness for Substance Use Disorders.......................................................32

SUMMARY...........................................................................................................39

Unity in Treatment from the Bottom Up.........................................................39

CONCLUSION...................................................................................................41

REFERENCES...................................................................................................42
Psychotic disorders have long been associated with inflated rates of co-occurring substance use disorders, termed dual diagnosis. Substance use has devastating effects on symptom severity, healthcare costs, and long term outcomes in this already at risk population. Although there has been great success in developing programs with coordinated care, there has been some delay in cultivating psychosocial interventions that address both disorders in a cohesive manner. Mindfulness Based Relapse Prevention (MBRP) may fill the treatment gap for dually diagnosed clients. The use of mindfulness strategies for psychosis has shown positive effects in the reduction of anxiety, hospitalizations, experiential avoidance, and distress surrounding psychotic symptoms. Similarly, the use of mindfulness is gaining momentum in the treatment of substance use. A fusion of mindfulness techniques and Relapse Prevention, MBRP provides a wide lens from which to view the complexities of concurrent disorders, providing a common skill set. In this thesis, evidence for the use of MBRP for clients who are dually diagnosed with psychotic disorders is reviewed.

**Keywords:** dual diagnosis, psychosis, substance use, cognitive behavioral therapy, mindfulness, group interventions
ACKNOWLEDGMENTS

I am overwhelmed with gratitude for the people who have supported me throughout this process. I am especially grateful to my chair, Dr. Michael Christopher who always provided just enough pressure to inspire productivity without fueling the flames of anxiety. Thank you for your precision and expertise, and for allowing me the freedom to explore this topic. I have such deep appreciation for friends who have also been immersed in this process, as well as those who have provided a psychology free environment and moments of respite. Lastly, I have unending love and appreciation for my parents Carole Sue and Brian who have always nurtured my sense of curiosity, and who faithfully encouraged me as I forged my own path.
A DEFINITION OF TERMS

Dual Diagnosis

While the term dual diagnosis can be used to describe a range of co-occurring symptom presentations, for the purpose of this review it is limited to a substance use diagnosis occurring alongside an independent axis I psychotic disorder.

Substance Use Disorders

Substance Use Disorders as a category consist of diagnoses of Substance Abuse and Substance Dependence, which can be applied across all classes of substances, excluding caffeine. Substance Abuse diagnoses are appropriate for individuals who demonstrate a maladaptive pattern of substance use leading to clinically significant impairment or distress in fulfillment of role obligations, or recurrent use in situations that are physically hazardous or result in legal, social, or interpersonal problems. While individuals with these criteria incur harmful consequences for their pattern of use, there is not a presence of withdrawal or tolerance. An individual progresses to a diagnosis of Substance Dependence if symptoms of withdrawal or tolerance are present, or if they display a pattern of compulsive use despite attempts to abstain or reduce use (Diagnostic and Statistical Manual of Mental Disorders [DSM-IV-TR]; American Psychiatric Association, 2000). In a study using a large national sample from the United States, 26.6% of respondents reported a lifetime prevalence of substance use or dependence (Kessler et al., 1994).

Psychotic Disorders
As diagnoses like schizophrenia and schizoaffective disorder account for a wide range of symptoms, some researchers argue that current conceptualizations operate from a top-down approach, which is reductionistic and lumps distinct symptoms (hallucinations, delusions, paranoia) into one category rather than fully conceptualizing their distinctive mechanisms and integrated presentations (Bentall, Jackson, & Pilgrim, 1988). For the purposes of this review, the treatment of psychotic disorders will be discussed as a diagnostic category, with the recognition that there is variability between disorders. Within the DSM-IV-TR, schizophrenia and other psychotic disorders are broadly categorized together as differential disorders containing psychotic symptoms as a prominent aspect of their presentation (American Psychiatric Association, 2000). This category includes Schizophrenia, Schizophreniform Disorder, Schizoaffective Disorder, Delusional Disorder, Brief Psychotic Disorder, Shared Psychotic Disorder, Psychotic Disorder Due to a General Medical Condition, Substance Induced Psychotic Disorder, and Psychotic Disorder Not Otherwise Specified. The specific definition of the word psychosis has not been universally accepted and refers to different constellations of positive symptoms even between disorders in this category.

Psychotic disorders as a whole have a lifetime prevalence estimated at 3.06% (Perala et al., 2007). Of this diagnostic category, schizophrenia has the highest rates of prevalence, which has been estimated at 0.5% to 1.5% (DSM-IV; American Psychiatric Association, 2000). Symptoms of Schizophrenia include the presence of positive (psychotic) symptoms to include delusions, hallucinations, disorganized speech, grossly disorganized or catatonic behavior; and negative symptoms (including affective flattening, alogia, or avolition). Typically positive symptoms reflect distortion or excess of normal functions, while negative symptoms show diminishment or loss of normal functions (DSM-IV; American Psychiatric Association, 2000).
For a schizophrenia diagnosis, two of the aforementioned symptoms must be present continuously for at least 6 months, with significant impairment in social or occupational functioning.

INTRODUCTION

The evolving nature of psychology becomes painfully evident when looking at the treatment of psychotic disorders. Conceptualization and treatment for psychosis has undergone dramatic phases of change, and is again at another threshold of innovation. Early treatment of psychosis is marked with inhumane and extreme procedures, along with a sense of threat and mystery surrounding symptoms. In many cultures psychosis has been associated with moral failings or supernatural forces, which has created a sense of fear and stigma towards individuals with these disorders and their families (Phelan, Bromet, & Link 1998). In the 18\textsuperscript{th} century asylums were introduced as a solution to the problem of mental illness, though reformers would later regard these institutions as harsh, overcrowded, and engaging in practices that constituted abuse or neglect (Rosenblatt, 1984).

In spite of these concerns, institutionalization of the mentally ill became increasingly common, and at the turn of the 19\textsuperscript{th} century, nearly 150,000 patients with psychosis were confined in asylums in the United States alone (Shorter, 1997). There was often a pessimistic view of treatment outcomes, as psychosis was considered to be an early manifestation of dementia. Although there was recognition of the biological origin of the disorder, a lack of technology left a great deal of mystery surrounding symptoms. As such, hospital stays were often long-term, and many patients spent their entire lives in asylums without recovering or being discharged (Sanbrook & Harris, 2003). The word psychosis was established in 1845 as an alternative to the word madness, and in some circles, greater momentum began to build towards
identifying and classifying symptoms (Beer, 1995). By the mid 20th century, hospitalization rates were recorded to have reached 500,000 in the United States, however these numbers began to decrease as evidence-based practices became more readily available (US National Library of Medicine, 2011).

In 1952 the first antipsychotic medications were introduced to the public (Bennett, 1998), which aligned with a movement to deinstitutionalize care and move individuals into community care and home placements. Despite innovations in treatment, leading researchers in the 20th century maintained that psychosis or madness should be distinguished from affective illnesses (Jaspers, 1963). This distinction created a sense of otherness, and essentially classified psychotic disorders as a phenomenon distinct from general psychology. While this sense of otherness is in many ways pervasive in the field, there has been a steady evolution building in the conceptualization and treatment of psychotic disorders.

Treatment of patients with psychosis has shifted dramatically in response to evolving theoretical understandings of these disorders. Asylums equipped with steel restraints and experimental surgeries seem unconceivable today. As researchers and clinicians began to understand psychotic disorders as biological in origin, developments in pharmacology targeted the neurobiological source, treating positive and negative clusters of symptoms. But this was only the first step in the direction of holistic care. The field continues to shift and grow, and is on the brink of yet another revolution in the treatment of psychotic disorders, one that includes the highly prevalent rates of comorbid substance use disorders, termed dual diagnoses. In this thesis, current innovations in the treatment of psychosis and substance use disorders are reviewed independently, showing a natural convergence of mindfulness-based interventions for the treatment of dually diagnosed clients.
METHODS

A total of 196 sources were utilized for this literature review. These included theoretical papers, treatment manuals, meta-analyses, qualitative studies, quantitative studies, book chapters, and discipline-specific reference books including the *Diagnostic and Statistical Manual of Mental Disorders* (DSM-IV-TR; American Psychiatric Association, 2000). Research articles were collected through online databases including PsychINFO and Web of Science. Articles were obtained by entering the following keyword search topics: dual diagnosis, psychosis, schizophrenia, substance use, mindfulness, MBRP, and cognitive behavior therapy. International publications were included, particularly articles from the United Kingdom as a great deal of research about cognitive behavioral therapy for psychosis has originated out of the UK. In addition to written sources, the author attended an intensive training for Mindfulness Based Relapse Prevention (MBRP) conducted by the creators of the intervention, and content from this training informed the following review.

RESULTS

Within the current clinical framework, symptoms of psychotic disorders are managed and medicated, but the broader roles of affect, cognition, and emotion are largely absent in treatment. Through a mode of symptom reduction, clients are often provided adjunctive treatment for social skills and family education (Mueser, Bond, & Drake, 2000), but psychosocial interventions beyond this are commonly overlooked. This gap in psychosocial treatment can be felt, and there are limitations in psychopharmacological interventions when measuring functional improvement (Juckel & Morosini 2008; Lieberman et al., 2005). Up to 50% of individuals who are medication compliant continue to experience ongoing positive and negative symptoms (Conley & Buchanan, 1997). In response to these limitations, the field is again undergoing a theoretical shift in
understanding psychotic disorders, and researchers and psychological professionals have begun to investigate symptoms from beneath the same biopsychosocial lens that has informed standards in the rest of the field.

**Psychosis as a part of the spectrum**

This transition sounds fairly simplistic, but is revolutionary. Positive symptoms are no longer viewed as being outside of the realm of normal psychological functioning and a variety of theories explain the cognitive mechanics involved in psychosis. A majority of researchers assert that cognitive theories are not stand alone explanations of these disorders (Garety, Kuipers, Fowler, Freeman & Bebbington, 2001). Rather they compliment biological explanations of psychosis, and inform gaps in existing paradigms. As neurobiological and cognitive theories are synthesized, richer explanations of psychosis emerge. This fusion is described in a theoretical paper by Garety et al. (2007). A neurodevelopmental model originally asserted by Weinberger (1987) continues to evolve based on improvements in technology and neuroimaging. These models consider that brain lesions or abnormalities sustained early in life produce psychosis during the brains natural maturation process (Jones & Murray, 1991; Gogtay et al., 2011; Weinberger, 1987). However the variability of symptom onset cannot be accounted for by neurological processes alone (Broome et al., 2005). Researchers now suggest that while positive symptoms emerge as the result of dysregulation of the dopaminergic system, this biological process is also influenced by stressors in the environment (Howes et al., 2004; van Winkel, Stefanis & Myin-Germeys 2008; Walker, Curtis, Shaw, & Murray, 2002). As dopamine begins to be fired independently, it creates aberrant experiences. Delusions can be conceptualized as the mind trying to make sense of these anomalous experiences, a process which is informed by individual history and cognitive schemas (Kapur et al., 2005). Adding social, cognitive, and
environmental factors to biological models enriches the formulation, and provides windows for intervention at the psychosocial level (Garety et al., 2007).

Cognitive Schemas

Individuals who are suffering from neurological impairments in attention, working memory, and executive function are more likely to experience stressful experiences in daily life. In fact, some studies suggest that impairments in these domains have the strongest association with experience of distress and quality of life appraisal for individuals with schizophrenia (Ritsner, 2007). These stressful encounters open the door for the development of maladaptive beliefs, which are reinforced in future experience (Beck & Rector, 2005). In addition to the stress associated with impaired functioning, the stigma regarding psychosis also contributes to negative illness appraisal, which impacts delusional distress (Watson et al., 2006). Cognitive theorists continue to explore enduring beliefs that contribute to the clinical presentation of psychosis, and to examine these schemas independently of emotion. A recent study found that defeatist beliefs served as mediators in the relationship between cognitive impairment and negative symptoms and functioning (Grant & Beck, 2009). Similarly, asocial beliefs have been conceptualized as contributing to the social withdrawal seen in negative symptoms of psychosis (Grant & Beck, 2010).

Negative schemas have a cyclical effect. Dysfunctional beliefs often lead to future biases in cognitive processes and attributional styles, as well as heightened vulnerability for anxiety, depression, and paranoia (Fowler et al., 2006; Garety et al., 2007; Smith et al., 2006). Independent of depressed mood, negative self-concept has been found to be associated with more severe psychotic symptoms (Barrowclough et al., 2003). Although resolving maladaptive belief patterns does not directly parallel the treatment process for disorders like anxiety and depression,
adjustments to schemas appear to influence ratings of quality of life for individuals with psychosis (Gaynor et al., 2011; Moritz et al., 2011). Even for clients lacking insight into their delusional patterns, cognitive therapy is thought to be effective in promoting gains towards functional goals (Perivoltiotis, Grant, & Beck, 2009). When treating psychosis from a cognitive behavioral perspective, practitioners may consider the individual’s history at the time of their first episode to inform understanding of their current beliefs and perceptions (Rathod et al., 2010).

**Environmental Factors**

Researchers propose that social adversity encountered early in life may make individuals more vulnerable to psychosis. This association has long been a source of controversy, and researchers have searched to explain findings that trauma victims and certain minority, urban, and migrant populations have higher rates of psychosis (Cantor-Graae & Selten, 2005; Fearon et al., 2006; Kirkbride et al., 2006; McGrath, 2006). This finding may be explained by a two-fold biosocial process. While genes do contribute to rates of psychosis, researchers propose that exposure to prolonged experiences of ‘social defeat’ produces a sensitization in the mesolimbic dopamine system, which is similar to the dopamine reactivity seen in groups at risk for psychosis (Howes et al., 2004; Selten & Cantor-Graae, 2005). Additionally, experiences of marginalization, trauma, and adversity contribute to the development of negative schematic models; which in turn influence rates of anxiety, depression, and appraisal of future events. A study by Marcelis et al. (2004) showed that individuals with psychosis had an altered neurobiological response to metabolic stress that was different than their non-psychotic first degree relatives. The authors propose that this suggests that dysregulation was illness-related
and a reflection of overstimulation with agonist drugs or an effect of repeated environmental stressors (Marcelis, Cavalier, Gielen, Delespaul, & Van Os, 2004).

Similarly, environmental factors are large contributors in symptom maintenance. Levels of criticism or emotional over-involvement by caretakers (also termed expressed emotion) are highly correlated to negative outcomes. A 1998 meta-analysis of expressed emotion found it was significant predictor of relapse in schizophrenia, especially for patients with more chronic forms of the disorder (Butzlaff & Hooley, 1998). Caretaker criticism has been found to contribute to anxiety in psychosis, but not to the levels of psychotic symptoms (Onwumere, Kuipers, Bebbington, & Dunn, 2009). Yet, one must consider the delicate interplay between affect and psychotic symptoms, and ways this cycle may be triggered by stressors in the environment. More supportive environments have been found to correlate to better outcomes, as measured by lower re-hospitalization rates (Chien & Norman, 2009). Researchers have reported that the social, cultural, and developmental contexts of psychotic symptoms seem to be the most related to actual impairment and dysfunction (Stip & Letourneau, 2009). This theory may account for the popularity and efficacy of family therapy, which was found in a recent meta-analysis to be the superior treatment (Huxley, Rendall, & Sederer, 2000). While the results of family therapy have been favorable, some studies have suggested that benefits are not maintained in the absence of ongoing therapy. It appears that ongoing skills and problem solving are essential components of this intervention, and associated gains may be direct reflections of reduced environmental stress. This growing research base supports that symptoms can be impacted from environmental access points, and that providing tools for coping with the environment may lead to more positive outcomes in symptom management.

Reasoning and attributional biases
In a comprehensive model of psychosis, Garety et al. (2001) proposed that in addition to dysfunctional schemas and adverse environments, anomalous experiences are transformed into positive symptoms through the application of reasoning and attributional biases. The reasoning and attributional biases associated with psychosis involve the same processes observed in the general population. A prominent example is confirmatory bias, a process in which individuals maintain strongly held beliefs despite contradictory evidence (Freeman, Pugh, & Garety, 2008). This bias can be observed in delusional persistence, as individuals view information that disconfirms their beliefs with less impartiality (Kuipers et al., 2006). In addition, it has been found that individuals with psychosis often use less evidence in the process of decision making. This reasoning bias has been termed “jumping to conclusions,” and appears to contribute to delusional conviction, belief inflexibility, and the inability to generate alternative explanations (Garety & Hemsley, 1994; Garety et al., 2005). Individuals with persecutory delusions give greater attention to threatening stimuli, which maintains these strongly held beliefs. These biases may become particularly salient in crises, as individuals in acute phases of psychosis report higher levels of catastrophic misinterpretation and beliefs of responsibility (Luzón, Harrop & Nolan, 2009).

As anomalous experiences are unfamiliar and often perceived as foreign to previous modes of functioning, individuals may externalize the stimuli and reason that it is generated from outside of the self. This externalizing appraisal is a key component in psychosis. If an individual is able to acknowledge that the anomalous experience in being generated from the mind as a result of neurological symptoms, it changes the course of psychotic symptom presentation (Garety et al., 2001). Misattributions often lead to views of an experience as
threatening or personally meaningful, which contributes to levels of distress, and in the view of cognitive researchers, shifts the experience into a clinical range.

**Appraisal**

Many cognitive researchers argue that psychotic experiences exist along a continuum, and that these experiences do not meet threshold as symptoms in and of themselves (Claridge, 1997; Strauss, 1969; van Os et al., 1999). To illustrate this spectrum, studies have presented cases of psychotic experiences in non-clinical populations (Brett et al., 2009; Johns et al., 2004). These experiences are in fact normalized in some cultures and subcultures (such as religion), and differences in clinical and non-clinical individuals are strongly associated not with symptoms, but with the levels of distress related to them. Researchers have argued that much of difference between the reported levels of distress rests upon individual and community appraisal of symptoms.

Similarly, Morrison (2001) formulated a cognitive theory of psychosis asserting that positive symptoms can be understood as intrusions, which become problematic due to interpretation of the content, or beliefs about the metacognitive process. Brett et al. (2007) found a relationship between maladaptive metacognitive beliefs in the context of anomalous experiences and the need for care when comparing a clinical sample to individuals in the general population who reported psychotic-like symptoms. Similarly to other cognitive theories of psychosis and appraisal (Chadwick & Birchwood, 1994; Garety et al., 2007; Morrison, 2001), individuals in the clinical sample appraised their experiences as more dangerous and negative, and were more distressed by them. In a replication study, Lovatt et al. (2010) found that need for care was related to specific styles of appraisal, such as personalizing (appraising experiences to have been caused by others) or externalizing (appraising the experience to be generated from
outside the self). As both the clinical and non-clinical sample in this study presented with high rates of trauma, the authors acknowledged that trauma may be related to the development of anomalous experiences. They proposed however that appraisal may better explain the well established relationship between trauma history and the development of psychosis.

In a review of literature involving the cognitive model of auditory hallucinations, Mawson et al. (2009) found that certain appraisals appeared to be linked to higher levels of distress in individuals hearing voices. When the voices were appraised as malevolent, as being high in supremacy, of being of personal acquaintance, and when the individual appraised the voices with an attitude of disapproval and rejection; there appeared to be higher rates of distress. The authors suggested that social schemata may be a mediating variable in this relationship, and a possible target point for future interventions (Mawson, Cohen, & Berry, 2009).

**Affect**

Understanding the strong biological component in psychosis, cognitive behavioral clinicians often create mini-formulations of symptom maintenance (Tai & Turkington, 2009). In these formulations the role of affect is strongly considered, as anxiety and depression are thought to trigger hallucinations (Freeman & Garety, 2003). While in the general population stressful events trigger mood and anxiety symptoms, these triggers have additional significance for individuals with psychotic disorders, as anxiety and negative mood states often cascade into psychotic symptoms. Researchers have found that higher levels of depression and lower self esteem are related to greater severity of auditory hallucinations, with more intensely negative content and greater associated levels of distress (Smith et al., 2006). For individuals who experience auditory hallucinations, the presence of negative emotion is significantly correlated with the belief that voices are real (Garrett & Silva, 2003). Speech output and language
disturbances of schizophrenia are also found to increase with exposure to negative emotion (Minor & Cohen, 2010; Minor et al., 2011, Seghers & Doherty 2009). This phenomenon, termed affective reactivity, has been found to have greater prevalence in individuals with higher rates of depression (Phillips, Voglamier, & Deldin, 2007).

Similar to the mechanisms in anxiety disorders, individuals with psychosis have been found to report higher levels of anxiety sensitivity and obsessional beliefs (Luzon, Harrop & Nolan, 2009). Anxiety is thought to be the closest corollary to many symptoms of psychosis, and has been related to the paranoia observed in persecutory delusions (Freeman et al., 2002). Due to these perceived similarities, prominent anxiety theories have been applied to psychosis in exploratory studies. Seghers and Doherty (2009) found that baseline depression and sensitivity to stress was related to affective reactivity, independent of baseline neurocognitive impairments. While this patient population as a whole has been found to have higher rates of reactivity, there appears to be variable levels of vulnerability to psychotic relapse in response to stress (Docherty, St-Hilaire, Aakre, & Seghers, 2009). These findings inform the stress diathesis model of psychotic symptom formation, and provide yet another access point for relapse prevention.

Avoidance Strategies

Negative symptoms may be understood as contributing to avoidance of feared stimuli, which add to the client’s inability to confront and learn new information to counter their beliefs. The use of avoidance strategies to control internal experiences can often predict functional impairment in the general population (Hayes et al., 1999) and have been found to be related to delusional persistence in psychosis (Freeman & Garety, 2003; Lobban, Barrowclough & Jones 2004). Freeman, Garety, and Kuipers (2001) found that 96% of a sample of individuals with persecutory delusions reported to have utilized safety-behaviors over the preceding month.
Greater use was positively correlated with more distressing delusions (Freeman, Garety, & Kuipers, 2001). While individuals often report utilizing these strategies to reduce symptom-related distress, avoidance has been found to contribute to positive symptom maintenance. Individuals with psychosis who suppress or avoid unwanted thoughts are significantly more likely to experience distressing delusions when exposed to daily stressors (Goldstone, Farhall, & Ong, 2011). Avoidant safety behaviors and punishment-based thought control strategies have been found to be associated with both the frequency of psychotic-like phenomenon and levels of distress (Cambell & Morrison, 2007). Experiential avoidance can be considered as a reaction to the judgment and discomfort of psychotic experiences that pulls the individual further into the reaction and farther away from the self (Chadwick, Taylor, & Abba, 2005).

**Treatment Implications**

When reviewing the literature it becomes apparent that levels of distress fluctuate in relation to factors of cognition, affect, and environment; even when positive symptoms remain constant. Based on these theories of symptom maintenance, cognitive behavioral techniques are highly adaptive adjunct treatments to pharmacological interventions, and can provide a framework for monitoring mood states, thought patterns, and the environmental stressors that directly impact symptom severity and distress. Wykes et al. (2007) conducted a meta-analysis to clarify the benefits of CBT for psychosis. When reviewing 34 independent trials the authors detected an overall beneficial effect size of 0.40 for the target symptom. Additionally, significant effects ranging from 0.35 to 0.44 were detected for positive symptoms, negative symptoms, functioning, mood, and social anxiety. Benefits of the treatment appeared to generalize, as improvements between domains were found to be related to improvements in others (Wykes et al., 2007). The application of cognitive behavioral therapy has clear benefits in
the treatment of psychotic disorders, and may be a stepping stone towards more comprehensive models of care.

**Mindfulness for Psychosis**

Cognitive theory spurred an evolution in the conceptualization of psychosis. This energy ignited new waves of research in the field, and continues to propel innovation in treatment. As emerging theory meets clinical practice, interventions often require modifications to adapt to symptoms as they present in the field. When applying traditional CBT to psychosis, there is a clear distinction from disorders like depression and anxiety. Psychosis is often considered to be a chronic condition, and interventions must provide flexible models for coping with biological symptoms that are not ameliorated through medication. Shifts from traditional CBT become more appropriate when working with organic parts of psychotic disorder presentations which are more stable or enduring. In stretching and adapting, many applications of CBT have morphed into frameworks that consider chronic symptomology, and promote a natural sense of curiosity and acceptance of internal processes.

In studies of individuals with psychosis, efforts to suppress or control psychotic symptoms have been found to lead to negative outcomes and increased frequency of unwanted thought content (Salkovskis & Campbell, 1994; Wegner, Schneider, Carter, & White, 1987). It therefore seems counterintuitive to utilize these same techniques in psychological interventions, and researchers have shifted treatment models to instead focus on reducing the distress related to psychotic symptoms (Birchwood, 2003; Chadwick, Birchwood & Trawler, 1996; Steel et al., 2007). Some research suggests that the cultivation of mindfulness skills may mediate treatment response in traditional CBT (Gaudiano, 2005). This may explain the results of a recent mediator
analysis of CBT for psychosis in which the hypothesized mediators (cognitive schemas, insight, and reasoning) were not found to be related to the positive outcomes of the intervention. An alternate mechanism appeared to lead to reduction in depression as well as positive effects observed on social functioning and delusional distress (Garety et al., 2008). As the research base of CBT for psychosis continues to build, interventions adjust to capitalize on the most prominent mechanisms of change, which may be rooted in awareness and acceptance.

Mindfulness based interventions de-emphasize the focus on cognitive change techniques, and cast an emphasis on awareness and acceptance of internal events. While the target is not specifically a reduction in psychotic symptoms, they are often impacted by changes in acceptance and affect. For instance, in a recent study greater acceptance of voices was associated with lower levels of depression, increased confidence in coping with command hallucinations, and greater subjective quality of life (Shawyer et al., 2007). Awareness of symptoms is thought to disrupt the cycle of experiential avoidance which often maintains psychotic symptoms (Chadwick, 2006). Based on these findings, treatment goals shift from symptom reduction and instead gravitate towards increased awareness and acceptance of psychotic sensations. As the treatment is focused on relationship to symptoms rather than the symptoms themselves, clients are encouraged to let psychotic experiences pass by without getting pulled in.

Review of Mindfulness-Based Interventions for Psychosis

ACT for psychosis.

Pilot study.
In 2002, Bach and Hayes published an article describing a novel use of a brief acceptance and commitment therapy (ACT) for psychotic inpatient clients. Their sample consisted of 80 individuals who were randomly assigned to a treatment as usual (TAU) group or an experimental ACT group while receiving acute hospital services. Individuals in the experimental ACT condition received 4 individual sessions that were 40-50 minutes in length. The content of the ACT intervention was drawn from the ACT manual, with metaphors tailored to fit the population including “taking the brain for a walk” and a metaphor about trying not to appear anxious when taking a lie detector test. Results were measured using re-hospitalization data and a scale measuring the frequency of delusions or hallucinations over the previous month. Additionally, distress and believability of symptoms and medication compliance were measured through self report (which was confirmed in 40% of cases by primary care givers, laboratories, or medical records).

Individuals who participated in the experimental ACT group were found to have a 50% reduced rate of hospitalization over a 4-month period. Participants were more likely to report their symptoms than individuals in the TAU group, and were three times more likely to stay out of the hospital if they did so. Data indicated that individuals in the ACT group reported similar symptom frequency and distress, but lower believability of symptoms than the TAU participants. Although the effects appeared to be significant, they did not maintain over time. The authors suggest that this may be due to the brief nature of this intervention, and concluded that future research should focus on extending the intervention and integrating it into existing evidence based packages for psychosis.

*Replication study.*
Building upon the success of the pilot study of ACT for psychosis and controlling for some of the methodological limitations of the 2002 study, Gaudiano and Herbert (2006) conducted a replication study with a population of 40 adults in a university-based hospital. All participants were hospitalized at the time of the study and presented with psychotic symptoms and a diagnosis of a psychotic disorder or another psychiatric diagnosis with psychotic symptoms that required hospitalization. Individuals who agreed to participate in the study were randomly assigned to the ACT group or enhanced treatment as usual (ETAU). To control for the additional client contact in the ACT condition, Gaudiano and Herbert enhanced the treatment as usual group, and the resulting ETAU group consisted of psychopharmacology, case management, and psychotherapy. The ACT group followed the same format as the intervention conducted by Bach and Hayes (2002). Participants received an average of 3 sessions that were 1 hour in length.

Progress was measured using the Brief Psychiatric Rating Scale (BPRS), Clinical Global Impressions Scale (CGI), self-ratings of psychotic symptoms, and the Sheehan Disability Scale (SDS). Measures were taken pre and post intervention, and re-hospitalization data was collected 4-months post intervention. Consistent with the findings of Bach and Hayes, the ACT group showed a 50% reduction in re-hospitalizations compared to the TAU group at 4 month follow-up (28% vs. 45%). Although this finding was of note, it did not reach clinical significance. The authors proposed that this may be a limitation of small sample size. Additionally, individuals in the ACT group showed superior improvement in measures of affective severity, global improvement, distress associated with hallucinations, and social functioning. Individuals in the ACT group showed a reduction in the believability of hallucinations that was not present in the
ETAU group when controlling for changes in the frequency of hallucinations. Change in believability was strongly associated with change in distress (Gaudiano & Herbert, 2006).

To gain further insight into the mechanisms of change, Gaudiano et al. (2010) utilized this 2006 data in a mediation analyses. The results supported that hallucination frequency did not mediate the outcome of distress, and rather this relationship was mediated by the believability of hallucinations. The analysis suggested that 68% of the variance of the effect of treatment on distress outcomes could be explained by hallucination believability post treatment (Gaudiano, Herbert, & Hayes, 2010). This finding supports the theory of change in acceptance based interventions, and the positive potential of teaching cognitive flexibility to cope with positive symptoms.

**Yoga therapy add-on treatment.**

Duraiswamy et al. (2007) proposed that as an add-on therapy, yoga could benefit clients with schizophrenia by improving psychopathology, quality of life, and social functioning. Sixty one clients with a diagnosis of schizophrenia were recruited from in-patient and out-patient services of the National Institute of Mental Health Sciences in Bangalore India. Participants were on stable antipsychotic medication regimens at least 4 weeks prior to the start of the intervention and throughout the 4 month study, and were randomly assigned to a physical training (PT) or yoga therapy (YT) group. The authors utilized the Positive And Negative Syndrome Scale of Schizophrenia (PANSS) to measure outcomes of psychopathology, and social and occupational improvements were measured using the Social and Occupational Functioning Scale (SOFS). Quality of life was measured using the WHO Quality of Life BREF Version, WHOQOL-BREF. Side effects were assessed by the Simpson Angus Scale for Extrapyramidal
Symptoms and the Abnormal Involuntary Movement Scale (AIMS). Assessments were administered pre and post intervention. Both groups showed significant drops in PANNS and SOFS scores post intervention. However, only the YT group had statistically significant improvements in quality of life after controlling for effects of baseline ratings, with moderate to large effect sizes. Differences were also detected in the YT group in areas of the PANNS, including significant reductions in symptom dimensions and total score compared to the PT group. The authors proposed that future research could investigate the benefits of yoga for individuals with schizophrenia to explore effects on cognitive function, stress reduction, and the physical health conditions associated with antipsychotic medication (Duraiswamy et al., 2007).

**Mindfulness group.**

Chadwick et al. (2005) conducted a study of a group mindfulness intervention for individuals experiencing distressing psychosis including paranoid beliefs and hallucinations. Ten participants were selected from a pool of community referrals who reported distressing psychotic experiences lasting for a period of at least 2 years. Participants received six 90-minute mindfulness groups in addition to standard psychiatric care and medication. The focus of the intervention was helping participants establish a mindful relationship with unpleasant voices, images and paranoid thoughts. The group facilitators provided exercises that taught mindfulness of the breath and awareness of the body. Outcome was primarily measured using the Clinical Outcomes in Routine Evaluation (CORE) and Mindfulness Questionnaire. At the end of the six week intervention, participants showed a significant drop in scores on the CORE ($z = -2.655$, $p = .008$). Scores on the Mindfulness Questionnaire varied, but were found to have an overall increase of 42% post intervention. Participant feedback appeared positive, and participants
reflected an understanding of accepting psychotic experience rather than trying to suppress or change it (Chadwick et al., 2005)

**Case studies of mindfulness for distressing voices.**

Taylor et al. (2009) delivered a 12-week mindfulness intervention in two case studies, with the hypothesis that mindfulness training alone would reduce distress and conviction in beliefs associated with distressing voices. Both clients were male and met criteria for paranoid schizophrenia with current auditory hallucinations. Both expressed anxiety related to voices, and different experiences of anger, confusion, and negative mood. Clients completed scales assessing distress and belief in what the voices were saying, which were collected both at the end of weekly sessions and while at home midweek. Level of mindfulness was measured pre and post intervention with The Southampton Mindfulness of Voices Questionnaire (SMVQ). Weekly sessions were reflective of Chadwick’s (2006) approach, and lasted one hour. They were comprised of two short mindfulness practices followed by Socratic inquiry. Participants were provided with audio recordings to practice between sessions. When plotting belief conviction and distress over time, there was no immediate change in outcome, but change became evident within 3 to 4 weeks. Cognition and affect were observed to change at the same time, with fluctuations within participants. Both clients showed an increase on the SMVQ post treatment. The first participant’s score fell within 2 SDs of the mean for outpatient clinical population and the second participant’s score fell 2 SDs above the group mean by the end of the program. Both participants reported feeling less overwhelmed by their experiences and more assured in their ability live with the voices. The authors suggest that these findings support that mindfulness is a cognitive and affective change agent, and may be preferable to traditional CBT strategies in working with distressing auditory hallucinations. This study was limited by lack of
symptom based measures and the inability to generalize finding beyond the two clients involved in the study, but has promising clinical implications.

**Mindfulness training for anxiety in schizophrenia.**

Davis et al. (2007) integrated curricula from MBSR and MBCT to create an 8-week mindfulness program targeting anxiety and stress associated with schizophrenia and developing self-compassion. Their sample consisted of 5 outpatient clients in post-acute phases of schizophrenia or schizoaffective disorder. The authors proposed that MBSR has already been used to treat anxiety in chronic conditions, and could be extended to treat the high levels of anxiety and stress that are associated with disorders like schizophrenia. As the researchers were in the development stage of the intervention, they collected participant self reports and clinician reports as outcome data. Clients and clinicians did not report an increase in the incidence of delusions or hallucinations and on average clients attended 88% of the group sessions. Participant feedback was generally positive, and group members reported the development of new coping skills, increased awareness and acceptance, and improvements in negative symptoms and thought patterns.

**Participant perspectives on mindfulness meditation training.**

Throughout the literature, there have been general concerns that meditation or mindfulness practice could negatively impact individuals with psychosis and lead to increases in symptoms and distress. To assess these concerns, Brown et al. (2010) collected qualitative data from a pilot study of an adapted an 8-week MBSR program targeting anxiety related distress in schizophrenia. The authors’ goal was to assess the feasibility and acceptability of using this approach to assess if the program met the participant’s expectations, and to collect general data
about response to the intervention and impact of mindfulness exercises on positive symptoms. The sample consisted of 15 men with a diagnosis of schizophrenia or schizoaffective disorder, as confirmed by the DSM-IV criteria and administration of the Structured Clinical Interview for the DSM-IV (SCID). A grounded theory approach with multiple outside raters was used to analyze the data. The prominent themes that emerged for positive outcomes included cognitive changes, group support, present focus, relaxation, self awareness/acceptance, and symptom reduction. Few participants identified negative outcomes, and those that were identified appeared to relate to sad memories and feelings, rather than increase in positive symptoms. Participants appeared to have either a neutral response about positive symptoms during meditations (they were no worse than in general) or positive feedback about using mindfulness to stabilize in the presence of positive symptoms. In fact, relief from psychiatric symptoms was identified most often as the largest benefit of the program, followed by relaxation. These findings suggest that mindfulness may be an appropriate intervention for use in this population. Although this study was conducted with a small sample, it establishes important data about the impact of mindfulness-based interventions on participants with psychosis (Brown et al., 2010).

**Defining This Phase of Evolution in Treatment**

The integration of mindfulness based interventions has captured momentum long building in the treatment of psychosis, and is carrying innovation forward. The field has moved far beyond the fear and mystery that once overshadowed the phenomenon of psychosis. It has progressed beyond purely biological models, and continues to broaden understanding of these disorders. While symptom reduction techniques often require a restriction of lens, mindfulness-based interventions remove the lens entirely. They are able to capture a larger array of symptom presentation because the focus of treatment takes place at a broader, metacognitive level. This is
ideal in the treatment of psychosis, as there are tremendous rates of comorbidity associated with these diagnoses.

“Co-Occurring” Disorders

Psychotic disorders have long been associated with heightened rates of comorbidity relative to other DSM primary diagnoses (Green, Canuso, Brenner & Wijcik, 2003; Pincus & Tew, 2004). Rarely does this population present with symptoms that would warrant a single diagnosis, and there is often a complex web of interrelated symptoms to untangle. In a meta-analysis, Buckley, Miller, Leher, and Castle (2008) calculated average prevalence rates based on previous studies of comorbid mood and anxiety disorders in individuals with schizophrenia. They found that 50% of individuals with schizophrenia also presented with clinical depression, 29% with posttraumatic stress disorder, 15% with panic disorder, and 25% with obsessive-compulsive disorder (Buckley et al., 2008). Other studies have presented similar findings, which raise questions about the current conceptualization of psychotic disorders (Cassano et al., 2000). It has been argued that the high degree of symptom overlap shows that current constructs are overly simplistic, and that psychotic disorders may be a “failed” diagnostic category (Bentall, 2006). Other theorists propose that the great variability in positive and negative symptoms suggest that these disorders would be better described as a group of diseases that share common expression but are the result of different etiology (Kirkpatrick, Buchanan, Ross, & Carpenter, 2001). Regardless of the theoretical underpinnings of comorbid disorders in this population, consideration of overlapping symptoms is an important factor in delivering quality care.

Co-Occurring Substance Use Disorders
While untreated mood and anxiety disorders can have profound effects on individuals with psychotic disorders, comorbid disorders related to substance use are particularly impactful. Up to 50% of individuals with a psychotic disorder also meet criteria for a substance use disorder at some point in their lifetime (Barbee et al., 1989; Drake & Wallach, 1989; Mueser et al., 1990; Negrete et al., 1986, Richard et al., 1985). Researchers have found that this heightened vulnerability can be observed both before and after the onset of psychotic symptoms (Hambrecht & Hafner, 1996). Problematic substance use is found to occur at a rate 4.6 times higher than that of the general population (Dixon, 1999). Many theories have been proposed to account for these inflated rates, which address a variety of biopsychosocial factors. While it is assumed that much of the dual vulnerability is related to neurological deficits, there are also common impairments in vocational, social, and educational domains that are common risk factors for developing a substance use disorder (Drake, Wallach, Alverson, & Mueser, 2002). It is therefore suggested that social and environmental deficits may place individuals in this population at greater risk for problematic substance use.

In comparison to the general substance abusing population, individuals with both a psychotic disorder and a substance use disorder are more likely to be males with lower levels of education and a family history of substance use (Barnes et al., 2006; Cantwell, 2003; Kavanagh et al., 2004). Yet, some have suggested that rates of substance use in women with a psychotic disorder are underreported, as they are more likely to receive services for mental health than substance use (Alexander, 1996). Better premorbid functioning has also been found to be associated with higher rates of substance use. This has been explained by social theory, as the capacity to procure drugs and alcohol is related to social ability and overall functioning (Carey, Carey, & Simons, 2003; Dixon, Haas, Weiden, & Frances, 1991; Sevy et al., 2001).
dually diagnosed population, alcohol has been found to have higher rates of use amongst older individuals, while drug users tended to be younger (Salyers & Meuser, 2001). In parallel to the general population, substance use typically remits with age (Dixon, 1999).

When tracking the developmental course of psychotic disorders, substance use is often associated with earlier onset of psychotic symptoms (Kovasznay et al., 1997, Mauri et al., 2006). These findings support theories that substance use, particularly the use of marijuana and amphetamines, may trigger the development or expression of underlying psychotic disorders (Cuffel, Heithoff, & Lawson, 1993; Degenhardt & Hall, 2001). This association has been fairly controversial, and researchers have tried to clarify the relationship. A research team in New Zealand found that while the majority of cannabis users do not develop schizophrenia, adolescents who possessed a faulty allele were more vulnerable (Caspi et al., 2005). There is a tremendous amount of debate about the relationship between substance use and the development of primary psychotic disorders, and behavioral and biological research efforts continue to explore whether the relationship is causal or bidirectional (Gregg, Barrowclough & Haddock, 2007).

**Dual Diagnosis**

Although studies suggest that the reasons for substance use in individuals with psychotic disorders are similar to those reported in the general population (Dixon et al., 2001), there are components of use and outcomes that are fundamentally different. It has been suggested that a dysregulation of dopamine may predispose patients with schizophrenia to abuse drugs (Chambers, Bickel & Potenza, 2007; O’Daly, Guillin & Tsakakis, 2005). While the types of substances used in this population appear to be reflective of community trends (Dixon, 1991), the
effects of substances are observed to be somewhat different (Mueser et al., 1995; Dixon et al., 1990). While current research does not support that substance use is an attempt to suppress psychotic symptoms (Brunette, Mueser, Xiie, & Drake, 1997; Dervaux, 2001; Gregg, Barrowclough & Haddock, 2007; Mueser et al., 1992; Regier et al., 1990), there does seem to be a relationship between substance use and attempts to alleviate dysphoria and cope with psychotic symptoms (Addington & Duchak, 1997; Baker et al., 2002 Dixon et al., 1991; Fowler et al., 1998; Goswarni et al., 2004; Green et al., 2004; Schofield et al., 2006; Test et al., 1989; Warner et al., 1994).

It would then appear that dually diagnosed individuals are not attempting to suppress positive symptoms through substance use per se, but rather trying to cope with the distress they experience regarding symptoms of their disorder. This distinction opens up new considerations for treatment. While certain interventions target symptom reduction, others target the metacognitive process surrounding the disorder. While this is a relatively new area of research, initial findings suggest that negative appraisal of symptoms is related to risky behaviors, including suicide and increased alcohol intake (Fialko, Freeman & Bebbington, 2006). This is consistent with CBT models, which assert that judgment about positive symptoms leads to avoidant behaviors, such as social withdrawal and self harm (Tai & Turkington, 2009). Acceptance and Commitment Therapy (ACT) describes a similar process as cognitive fusion, and asserts that when individuals fuse with their thoughts it often results in avoidance or withdrawal (Hayes & Strosahl, 2004; Hayes et al., 1999). Substance use can be inserted into this model as a method of avoiding distress associated with positive symptoms, and dual diagnosis individuals often report using substances to cope with negative affect (Spencer et al., 2002). Based on these
distinctions, conceptualizing substance use in this population may be a different process from that of the general population, and interventions must be modified accordingly.

The rate of comorbid substance use is higher in inpatient settings, as clients are more likely to receive care when they present with two or more conditions (Mueser et al., 1995). However, despite the high prevalence of comorbid substance use observed in mental health settings, it has been found that dually diagnosed individuals are highly unlikely to receive treatment for both disorders (Epstein, Barker, Vorburger & Murtha, 2004). Integrated care is tremendously important, as substance use has a significant impact upon symptom severity and outcomes. Individuals with psychotic disorders who are using substances are found to have a greater number of psychotic symptoms (Negrete et al., 1986), more frequent rates and earlier psychotic relapse, and higher associated rates of re-hospitalization (Drake & Wallach, 1989; Hall et al., 1977, Schwartz & Goldfinger, 1981). The addition of a substance use disorder amplifies vulnerability in an already at-risk population, and increases rates of victimization, as well as HIV and AIDS infection (Brunette, Mueser, & Drake, 2004). Substance use has also been related to higher rates of treatment and medication noncompliance, which can be a mediator of psychotic symptoms (Drake 1989; Miner et al., 1997). Psychopharmacological interventions are first-line treatment for individuals with a psychotic disorder, and medication noncompliance has been found to be eight times more likely for individuals who are diagnosed with a comorbid substance abuse disorder (Owen et al., 1996).

The impact of substance use disorders is significant for individuals with a dual diagnosis, and it also has a strong impact on the community. Contact with the legal system has been found to be increased with the addition of substance use (Abram & Teplin, 1991; Barry et al., 1996), as well as rates of violence and suicide (Barry et al., 1996; Drake et al., 1989; Dassori et al., 1990;
Fulwiler et al., 1997). Individuals with dual diagnoses present with increased rates of homelessness and housing instability (Drake et al., 1991), medical problems (Brown, 1997; Felker et al., 1996), and greater associated costs due to hospitalizations and crisis-oriented care (Drake et al., 1991; Kivlahan et al., 1991; Shaner et al., 1995). Focusing solely on a psychotic disorder at the expense of drug and alcohol treatment can result in compromised care and devastating long-term consequences.

**Dual Diagnosis Treatment**

Knowing these statistics and outcomes, it seems intuitive that integrated treatment would be the standard of care. The fact that clients rarely receive concurrent treatment is therefore surprising, and raises important questions about this lack of services. In the 1980s, integrative models of intervention were identified as being essential in the treatment of dually-diagnosed clients (Drake, O’Neal, & Wallach, 2008). Such models have allowed organizations to manage care of both diagnoses under one roof. Although integration has improved the overall system of care, there are no criteria as to what services should be provided in these settings. No empirically supported treatments for dual diagnoses exist, and so practitioners are left to meld interventions without supportive guidelines (Drake et al., 2006). Historically, patients with comorbid substance use disorders have been excluded from research, and so only recently have research efforts addressed the dually diagnosed. Within this research, there has been considerable difficulty bridging the gap between standard drug abuse treatment and psychosocial interventions for psychotic disorders. These approaches are in many ways juxtaposed, as the supportive methods used to reduce anxiety in addressing psychotic symptoms seem to contrast the often confrontational approaches utilized in substance abuse programming (Hellerstein & Meehan, 1987; Kleber, 1988).
Practitioners can now draw from evidenced-based treatments, as the literature has begun to expand for experimental dual diagnosis interventions. Thus far, the most promising results have been found for individual treatments comprised of motivational interviewing (MI) and cognitive behavioral therapy (CBT; Baker, Bucci, Lewin, Kay-Lambkin, Constable, & Carr, 2006; Barrowclough, Haddock, & Tarrier, 2001; Haddock, Barrowclough, & Tarrier, 2003). The results of these interventions have been celebrated, and yet many professionals voice that individual treatment is unrealistic for the current treatment climate. While the developers of these interventions propose that the costs of individual treatment is balanced out by reduced utilization of acute services (Barrowclough, Haddock, & Tarrier, 2001), the majority of services are delivered in community mental health settings, where group interventions are often the most practical and cost-efficient approach. This system of delivery has lead to a growing demand for manualized group dual-diagnosis interventions (Cleary et al., 2008). In addition to the cost-effectiveness of group interventions, these approaches have the benefit of providing a sense of group belonging and creating a venue for sharing information related to harm-reduction strategies (James et al., 2004).

Research with dual diagnosis populations has involved significant challenges including high attrition rates, small sample sizes, and flawed methodology (Cleary, Hunt, Matheson, Siegfried, & Walter, 2008). Despite these limitations, researchers have begun to test group treatment methods for dually diagnosed clients, and effective components are becoming clearer.

**Review of Dual Diagnosis Group Interventions**

James et al. (2004) evaluated the effectiveness of a manualized group intervention based upon stages of change and harm reduction for dual diagnosis clients. A total of 63 participants (55 male, 18 female; mean age = 27.7 years) were recruited from three major community mental
health services in Western Australia. An Axis I diagnosis of a non-organic psychotic disorder and current use of alcohol or illicit drugs were the study eligibility criteria. All participants received standard community mental health services, including outpatient therapy and case management. Individuals were randomly assigned to either the control group or an experimental group. The control group received a 1-hour session of education about general drug use, consequences of use for people with a psychotic illness, and harm-minimization strategies. The experimental group attended a dual diagnosis program that consisted of weekly group sessions tailored to each participant’s stage of change and reasons for drug use. The group leader utilized peer support, motivational enhancement, harm minimization, and relapse prevention strategies. Scores on the Brief Psychotic Rating Scale (BPRS; Overall & Gorham, 1962) and self-reported Brief Symptom Inventory (BSI; Derogatis, 1983) showed that the experimental group had greater improvement at 3-month follow-up in psychopathology, drug abuse, need for medication, and hospital utilization as compared to the control group.

MI techniques have been frequently utilized in group interventions for dual diagnosis clients, but no specific group adaptation was manualized until a study by Santa Ana, Wulfert, and Nietert (2007). Due to the need for group-based interventions for community mental health settings, the authors created Group Motivational Interviewing (GMI). They tested its efficacy on a sample of 101 inpatient clients (66 male, 38 female; mean age = 37.5 years) diagnosed with at least one current substance use disorder and a nonsubstance-related major Axis I disorder. All participants received standard inpatient care and were randomly assigned to one of two structured 120-min group sessions: either the GMI group or the therapist attention activity control group (TAAC). Motivational interviewing techniques were applied to the group sessions, and empathy, reflections, and individual autonomy were emphasized. The GMI group
built a culture in which clients were encouraged to share personal views about treatment and to discuss ambivalence. The authors found that members of the GMI group attended aftercare sessions at a higher rate than did the control group. Although there was not a significant difference in illicit substance abstinence rates between groups at 1-month follow up, of the participants who did report drug use, those in the GMI group averaged fewer drug use days than the control group. Similar trends were noted at 3-month follow up.

Bellack, Bennett, Gearon, Brown, and Yang (2006) created an intervention for dual-diagnosis clients that utilized MI with additional incentives and structure, which they called the Behavioral Treatment for Substance Abuse and Persistent Mental Illness (BTSAS) program. A highly structured social learning intervention, BTSAS included motivational interviewing and social skills training with urine analysis contingency. Bellack et al. examined the efficacy of the BTSAS among a sample of 120 stabilized outpatients (76 male, 44 female, mean age = 42.7 years). All individuals met DSM-IV-TR criteria for drug dependence and had severe and persistent mental illness (SPMI). Participants were randomly assigned to either the BTSAS group or a control group representative of standard treatment at a university-based clinic that consisted of supportive treatment and didactic education about the effects of drugs. Both treatments were administered twice weekly in small groups by trained healthcare professionals. Urinalysis was utilized at each session to monitor progress. The authors found that BTSAS participants had a higher rate of retention and attended more sessions than did those in the control group. The BTSAS group also had a higher proportion of clean urine tests during a 6-month period relative to the control group, and significantly more participants in the BTSAS group than in the control group had at least one 4-week and 8-week block of continuous abstinence. The BSTAS group showed small increases in reports of quality of life relative to the
control group and participants reported having more money for food and essential items than individuals in the control group. The cost of services was offset by the cut in medical resources used by BTSAS participants post treatment.

The Next Step

Although promising research is emerging for the treatment of dual diagnosis clients, this is an area with tremendous opportunity for growth. There is still a great need for novel treatments for this population, especially ones which integrate a common skill set. Mindfulness and acceptance based approaches are ideal candidates, as new evidence suggests that these approaches are independently effective with both psychosis and substance use disorders.

Mindfulness for Substance Use Disorders

Relapse Prevention

Just as mindfulness is on the cutting edge of research for psychosis, support is also beginning to emerge regarding the use of mindfulness-based interventions for substance use disorders. Mindfulness practices are highly conducive with research coming out of the addictions field over the past 20 years, and are now the direct focus in the newest wave of treatment. They are a natural fit to Relapse Prevention (RP: Marlatt & Gordon, 1985), a standard component of aftercare treatment for substance use, and are an integral part of the newest RP intervention. Emerging from the cognitive behavioral model of addiction, RP has been found to be a highly effective model for preventing or limiting episodes of relapse for addictive behaviors and is one of the most widely disseminated adjunct treatments (Marlatt & Gordon, 1985; Parks & Marlatt, 1999; Irvin, Bowers, Dunn, & Wang, 1999).

Initially proposed by Marlatt and colleagues (Marlatt & Gordon, 1985), the cognitive behavioral model of drug and alcohol relapse is based on progressive responses to high-risk
situations. This model asserts that the use of effective coping strategies in high-risk situations enhances a sense of self-efficacy and decreases the likelihood of relapse. In contrast, self-efficacy declines when ineffective strategies are used, which changes individual perception of outcome expectancies and makes relapse more likely. A key component of RP is the “abstinence violation effect,” which posits that attributions made about a lapse into drug or alcohol use have a strong impact on the likelihood of continued use and a full relapse into previous behavior (Marlatt, 1985). If an individual views the lapse as something out of their control or a sign of personal failure, they are more likely to relapse into a pattern of previous use. However, if the lapse is viewed as a small error or a learning opportunity, the individual is more likely to return to previous goals of abstinence. This emphasis on appraisal parallels the language of acceptance and mindfulness-based interventions. While outcome studies of RP have not shown increased rates of abstinence following substance use treatment, it has been found that RP significantly reduces the frequency and intensity of relapse episodes, essentially helping individuals to pull out of a relapse sooner (Marlatt & Donovan, 2005).

RP interventions provide behavioral skills training along with cognitive interventions, which are implemented in the face of high-risk situations. These situations are identified early in treatment, and clients are encouraged to be aware of environmental, physiological, interpersonal, and intrapersonal stimuli that may trigger relapse behaviors. Common coping strategies include “urge-surfing,” which is a process of weakening addictive conditioning during experiences of cognitive urge or craving through non-action. This process was initially based on Buddhist principles of right conduct, and utilizes cognitive strategies as well as behavioral relaxation techniques. Self-efficacy is built through repeated non-action in the face of urges, resulting in
shifts in outcome expectancies (Witkiewitz et al., 2005). RP is suggested as a follow-up to first-line treatments for drug and alcohol use, and is a common feature of aftercare programs.

**The addition of mindfulness**

In many ways mindfulness training is a natural extension of RP treatment, and deepens the mechanisms of change in this intervention. Meditation was included in the first publication of RP as a cognitive coping strategy, meant to provide lifestyle balance and stress management (Marlatt & Gordon, 1985). However over time it became apparent to RP creators that the benefits of meditation could be expanded beyond this initial capacity. Mindfulness meditation is a metacognitive skill set which enhances the self-monitoring used in CBT. Although the precise agent of change is not certain, a possible mechanism is the explicit focus on the present moment. Often in addictive processes, individuals focus on the anticipation of future use, or become caught in the shame and guilt associated with previous use. The focus on the present moment compliments RP objectives of letting go of past substance use behavior and the expectancy associated with craving and use.

Mindfulness techniques add a unique element of non-judgment and acceptance to the thought monitoring process, which can be especially beneficial to substance users and clients with other diagnoses that carry stigma. It has been proposed that the de-centering effects of mindfulness may also impact association between the self and identity of substance use, which is often prominent in recovery from an addictive behavior. It may also de-center the relationship between negative affect and thoughts about the self which trigger relapse. Paired with greater awareness of reactive behavior, de-identification improves the likelihood of building self-efficacy and positive outcome expectancies.
At the heart of the intervention, mindfulness is proposed as a way to alter automaticity, and can be applied to substance users by creating a greater awareness of internal experiences including physical sensations and mood. Noticing these cues may disrupt the automatic process of seeking out and consuming substances. Mindfulness practice is suggested as an effective coping tool to detect and cope with high-risk situations, and with practice individuals may be more able to process situational cues and become aware of reactive behaviors (Marlatt & Ostafin, 2006). When in a high-risk situation, mindfulness practice provides a state of metacognitive awareness, and creates a wider lens to view the situation and make choices based on long term outcomes and goals (Bowen, Chawla, & Marlatt, 2011). As the creators of RP became aware of the immense possibilities of mindfulness practice in the treatment of substance use, mindfulness-based relapse prevention (MBRP) emerged.

**MBRP Program**

MBRP is an 8-week aftercare program for addictive behavior which offers cognitive behavioral RP skills alongside experiential training in mindfulness meditation. The group format and content were largely inspired by mindfulness based stress reduction (MBSR; Kabat-Zinn, 1990) and mindfulness based cognitive therapy (MBCT; Segal, Williams, & Teasdale, 2002), but were adapted to address topics specific to addictive processes. As participants are cultivating a mindfulness practice, the sessions build upon themes from previous weeks, and are therefore suggested as a closed rather than rolling group. The program is designed to create moment-to-moment awareness through direct experience. After engaging in a mindfulness exercise, dual facilitators guide the group through Socratic inquiry. A large focus of the group is increasing awareness of reactive or habitual behaviors, and developing a new relationship with these experiences based on compassion and acceptance.
The 8-week program includes the topics of automatic pilot and relapse, awareness of triggers and craving, mindfulness in daily life, mindfulness in high-risk situations, acceptance and skillful action, seeing thoughts as thoughts, self-care and lifestyle balance, and social support and continuing practice. Home practice is assigned each week, and participants are supported in building practice in the first few weeks through audio-recorded guided meditations which include a body scan, breath meditation, mountain meditation, SOBER breathing space, urge surfing, sitting meditation, movement, silence with bells, and loving kindness meditation (Bowen, Chawla, & Marlatt, 2011).

While mindfulness is fostered through exercises and individual practice, another key component of learning is the modeling provided by group facilitators. There is tremendous potential in Socratic inquiry to demonstrate an attitude of gentle curiosity and non-judgment. Facilitators help to guide discussion to direct experience, rather than the judgment, story, or evaluation of that experience. This is a language and skill set that is uncommon in our culture, and so must be intentionally cultivated by the facilitator before running a group. This skill set is cultivated through mindfulness meditation, and therefore facilitators should have their own individual practice. A foundation in mindfulness will be reflected through modeling, but can also be utilized to understand the experience of participants, which can often be one of frustration and overwhelm in response to becoming aware of the workings of the mind during meditation. The expectation of personal practice makes mindfulness-based interventions distinct from traditional psychological interventions, and places a stronger demand on professionals who are interested in running these groups. This investment however, appears to have tremendous potential, and initial findings suggest that mindfulness could be a powerful addition to traditional interventions for addictive behaviors.
MBRP Pilot Study

Bowen et al. (2009) conducted an initial efficacy study of MBRP with a sample of 168 adult participants recruited from a private nonprofit agency providing care for alcohol and drug use disorders. To be eligible for the study, participants were required to have completed inpatient or outpatient treatment within the previous 2 weeks. Participants were screened based on exclusion criteria of psychosis, dementia, imminent suicide risk, significant withdrawal risk, or need for more intensive treatment. Reflective of agency demographics, the sample contained high levels of clients who were homeless (19% outpatient and 75% of inpatient) and had a history of involvement with the criminal justice system. Eligible participants were randomly assigned to either the experimental MBRP condition or a treatment as usual (TAU) condition. TAU consisted of standard outpatient treatment provided within the agency, which used the 12-step model along with process oriented care and psycho-educational groups. The MBRP group met weekly for 2-hour group sessions, which were based on the MBRP treatment protocol and led by 2 master’s level therapists. At the end of the 8-week intervention MBRP participants resumed treatment as usual. Measurements were taken at baseline, post-intervention, and again at 2 and 4-month follow-up. Attrition rates did not differ significantly between groups, and differences in treatment contact were controlled for by using treatment hours as a covariate in primary statistical analyses.

Upon completion of the intervention, 85% of participants in the MBRP group reported continued use of meditation, and 54% reported continued practice 4-months post intervention. There were significant findings for the primary outcomes of the intervention. Results indicated that participants in the MBRP group showed an average decrease of 86% in alcohol and drug use for each 2-month increase in linear time, as measured by The Timeline Followback (TLFB)
MBRP for Dual Diagnosis  

measure. These were superior to the TAU results post-intervention and at 2-month follow up. MBRP participants also showed significant reduction in craving over time compared to the TAU group, as measured by the Penn Alcohol Craving Scale (PACS; Flannery, Volpicelli, Pettinati, 1999). Additionally, participants in the MBRP group had statistically significant increases in acceptance compared to the TAU group, as was reflected in changes in the Acceptance and Action Questionnaire (AAQ; Hayes et al., 2004). While decreasing in the TAU group, facets of the Five Factor Mindfulness Questionnaire (FFMQ; Baer, Smith, Hopkins, Krietmeyer, & Toney; 2006) related to awareness-based-action increased in the MBRP group.

At 2-month follow-up there appeared to be significant gains in primary treatment effects in the MBRP group compared to TAU, however these effects began to plateau at 4-month follow up. The authors proposed that this finding may be the result of a study design flaw, as the MBRP participants re-entered TAU at the conclusion of the 8-week MBRP intervention. Techniques of thought suppression in the TAU group may have been counteractive to the skills introduced by MBRP. This would likely change the active component of treatment, as reduction of thought suppression has been found to mediate the effects of mindfulness training on substance use (Bowen, Witkiewitz, Dillworth, & Marlatt, 2007). In light of this finding, the authors proposed that a maintenance program or community resource supporting mindfulness practice may extend treatment benefits (Bowen et al., 2009). This point requires clarification in future research.

In addition to the surface benefits of the program upon craving and substance use, the content of MBRP also has tremendous potential for treating concurrent mood disorders. As the program draws from components of MBCT, there are strong effects on detection of negative mood states. A recent mediator moderator analysis indicated that depression was correlated with craving and substance use, and this relationship was eliminated after participation in the MBRP
group (Witkiewitz & Bowen, 2010). This study highlights the possibility of mindfulness training
to influence the relationship between negative cognitive and emotional states and subjective
experiences of craving. This may be particularly relevant in working with dually diagnosed
clients with psychotic disorders, as the rate and intensity of positive symptoms are also highly
correlated with mood states (Freeman & Garety, 2003; Smith et al., 2006).

SUMMARY

Unity in Treatment from the Bottom Up

Clients with psychosis have historical been reduced to being a sum of their parts. As a
profession, psychology has evolved far beyond the initial mystery and fear that once framed the
treatment of psychosis, and it is time to find a unity in treatment from the bottom up rather than
the top down. Researchers have come to recognize the neurological basis of psychosis, but also
to understand these symptoms as a part of the larger spectrum of mental health. As the field
continues to evolve, it becomes the next natural step to address heightened rates of comorbid
substance use in this population to inform treatment development.

While substance use treatment and mental health interventions have often been described
as juxtaposed, the newest wave of mindfulness-based approaches transcends this barrier.
Because these treatment models take a step back from symptoms and instead treat the client’s
relationship to symptoms, there is a common skill set that can be applied equally across
comorbid conditions. When broadening the lens of understanding dual diagnoses, overarching
themes for treatment become clearer. Both substance use and psychotic disorders have been
categorized as chronic and relapsing conditions (Connors, Maisto, & Zywiak, 1996; Leshner,
1999). This factor may make them more amenable to the benefits of mindfulness-based
interventions, as chronic conditions were the initial focus that brought mindfulness to the West (Kabat-Zinn, 1990; Segal, Williams, & Teasdale, 2002). Similar approaches are ideal for substance use and psychotic disorders, as relapse prevention for both has been largely based upon monitoring mood and environmental stressors that can trigger relapse. Through mindfulness training, clients may come to better understand the transient nature of craving, mood, and positive symptoms. Through heightened awareness of internal stimuli, sensations can be noticed as they arise with a sense of acceptance and compassion. As both disorders carry heavy stigma in our culture, mindfulness adds the component of non-judgment, which may allow clients to de-center from a sense of judgment and over identification with symptoms.

To this point dual diagnosis clients have been largely excluded from research, as studies looking into one disorder generally contain exclusion criteria for the other. In constructing interventions for clients with psychotic disorders this is no longer acceptable, as nearly 50% of the population present with a co-occurring substance use disorder at some point in their lifetime. Considering the devastating effects of substance use disorders on symptom severity, healthcare costs, and long term outcomes (Dixon, 1999), it is essential that this population be represented in the research, and provided with holistic care. The next logical phase in the evolution of treatment for psychotic disorders is the design of treatment interventions for dual diagnosis clients. MBRP is an ideal candidate for modification with this population, and may be extended to provide specific skills for coping with the positive symptoms of psychosis.

CONCLUSION

The blending of cognitive behavioral therapy and mindfulness-based interventions could be a powerful next step in creating integrated care for individuals dually diagnosed with
psychotic disorders. Future studies should focus on determining the impact of a modified MBRP intervention upon dimensions of substance use and craving, mindfulness and acceptance, and symptoms of psychosis and related distress in dually diagnosed populations. CBT for schizophrenia and other psychotic disorders are becoming standard practice in many public healthcare settings, and it is possible within the framework of CBT to find manualized treatments that fit more tightly to the needs of dual diagnosis residents. This progress could greatly improve the lives of those who are suffering from dual disorders, and positively impact the community and utilization of public healthcare dollars.
References


Murray, R. M. (2006). Incidence of schizophrenia and other psychoses in ethnic minority groups: Results from the MRC AESOP study. *Psychological Medicine, 36*, 1541-1550. doi: 10.1017/S0033291706008774


training in schizophrenia. *Behaviour Research and Therapy, 49*(3), 151-157. doi: 10.1016/j.brat.2010.11.010


