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Philadelphia College of Osteopathic Medicine

Department of Psychology

MINDFULNESS: EXTENDING TREATMENT FOR
EARLY ONSET OBSESSIVE
COMPULSIVE DISORDER/ TOURETTES SYNDROME

By Rita L. Baldino

Submitted in Partial Fulfillment of the Requirements of the Degree of

Doctor of Psychology

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**PHILADELPHIA COLLEGE OF OSTEOPATHIC MEDICINE
DEPARTMENT OF PSYCHOLOGY**

Dissertation Approval

This is to certify that the thesis presented to us by Rita Baldino
on the 30th day of October, 2008, in partial fulfillment of the
requirements for the degree of Doctor of Psychology, has been examined and is
acceptable in both scholarship and literary quality.

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Abstract

Mindfulness is a categorical name for a group of techniques borrowed from ancient Buddhist practices that teach individuals to pay attention in the present moment.

Recently, the technique has been applied successfully in several clinical populations to help individuals live with, or accept, some of the difficult-to-treat symptoms of their illnesses. This intervention study takes three specific techniques from the mindfulness literature and introduces them to a young male who had been diagnosed and has received evidence-based treatment for early onset obsessive compulsive disorder, comorbid with Tourette's syndrome.

Fourteen sessions, scheduled over eight weeks, occurred. Three measures of effectiveness were developed to gauge the ability of practicing mindfulness to relieve the individual's depressive symptoms, a common side effect of living with an incurable disorder. The individual took a Beck Depression Inventory, Second Edition before beginning the intervention, then, at two weeks, at four weeks and at eight weeks into the mindfulness practice. In addition, seven goals were created to assess the effectiveness of this intervention; five were based on clinical knowledge of the individual and two were related to the outcome research on mindfulness. The third measure of effectiveness came from the individual's self-report data at the end of each session. Each session was predictable, practicing the same three techniques: (1). the facilitator began with a body scan; (2). the individual and the facilitator then listened to one piece of classical music; and (3). each session ended with conscious breathing.

The results of this protocol are promising. This individual showed a reduction in depressive symptomology while practicing mindfulness meditation, achieved

homeostasis or better on three of the five clinical and two outcome goals, and expressed personal benefit at the end of most sessions.

Continued application with a young population will help to inform the practice of mindfulness with young people and will be able to bring this ancient practice into the twenty-first century classroom.

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Chapter 1

Introduction

Statement of the Problem

During the last quarter of the twentieth century, technological advances have been discovered at exponential rates. These advances have contributed to newer lifestyles and more opportunities for leisure pursuits. In addition, much of this has been happening at a pace faster than previous generations ever considered. Many in the health professions have become witnesses to the fact that that these faster paced lifestyles bring with them concomitant stressors.

Our technological, faster paced society has been good business for the practitioners of the healing arts. Although practitioners are seeing clients increasingly affected by the stressors which have dawned with the twenty-first century, keeping people in therapy indefinitely is not an option. This would not be good for the patients or for the insurance companies who assist in the payment of services.

Technology has not necessarily been a bad thing. This same period of time has witnessed a tremendous growth in evidence- based practices which the healing professionals can access for a client's presenting problem. Treatment protocols are linked more directly to particular disorders with the aim of being effective and time-limited so that individuals can get on with their lives.

Cognitive Behavioral Therapy

One of the premier examples of data-driven therapy comes from the cognitive-behavioral tradition. Licensed psychologists, who are asked to justify their treatment protocols to third-party payers, will refer to the large body of specific techniques that

they can draw upon to help their distressed clients. Indeed, the research base that supports Cognitive Behavioral Therapy (CBT) has begun to match specific techniques with a client's presenting problem (O'Donohue, Fisher & Hayes, 2003).

Although scientific evidence supports the use of CBT for certain anxiety disorders and mood disorders, there exist certain illnesses whose research base does not support complete elimination of the symptomology which causes distress for a particular client. One of these is Obsessive-Compulsive Disorder comorbid with Tourette's syndrome (OCD/TS).

A Paradigm Shift

Recently, a third wave of behavior therapists has been testing a new set of techniques which extend the cognitive-behavioral tradition beyond reduction or elimination of symptomology. Mindfulness is a categorical name for a group of strategies known as second order change or acceptance-based therapeutic techniques (Hayes & Pankey, 2003). Acceptance-based strategies broaden the focus of change to include indirect change. Indirect change may not be directly observed because it deals more closely with an attitudinal shift that occurs from within the client. Both mindfulness, the technique, and acceptance, the result, value cognitive flexibility. These strategies support contextual deepening around the problem, rather than eliminating the problem behaviors (Hayes, Follette & Linehan, 2004).

The techniques identified collectively as mindfulness have been developed into specific protocols, successfully relieving both chronic pain and recurrent major depression (Kabat-Zinn, 1990; Segal, Teasdale, & Williams, 2002). Mindfulness techniques have also been incorporated into existing treatments for individuals with

Borderline Personality Disorder (Linehan, 1993a & 1993b). A fourth new development in the third wave of behavior therapy which uses mindfulness techniques as the primary intervention strategy is Acceptance and Commitment therapy (Hayes, Strosahl & Wilson, 1999).

Mindfulness at its core is a meditation inspired technique, something which has been practiced in the spiritual disciplines for thousands of years. Meditation, which can be learned by almost anyone, holds no judgments for its users and brings with it a long history of healing success from the world's spiritual traditions. The success of these four specific applications tested under controlled conditions is currently undergoing peer-review and holds much promise for twenty-first century scientist-practitioners of the healing arts.

Purpose of the Study

The purpose of this study is to test the effectiveness of three techniques from the mindfulness literature base to extend the healing that has occurred for one individual with early onset OCD/TS. Because there is a lack of any evidence-based protocol that reports to eliminate symptomology of this comorbid anxiety/tic disorder, an application of mindfulness is proposed to extend the protocols that have been delivered by reputable providers of services within one individual's suburban community.

A secondary purpose of this study is to test the efficacy of teaching mindfulness techniques as an adjunctive support to students with disabilities in education.

Mindfulness as a treatment technique is new to the adult population; hence, applications of mindfulness with younger populations are just beginning to inform its possible uses within the school setting (Semple, Reid & Miller, 2005; Wall, 2005).

Specific Hypotheses

- 1) Can three mindfulness techniques assist a young adult who has struggled with early onset OCD/TS for the past twelve years?
- 2) Can individuals with disabilities in Education under the current Act (IDEA) benefit from mindfulness? Specifically, are there other dimensions that need to be considered when mindfulness as the core protocol is taught to an adolescent or young adult?

Chapter 2

Literature Review

Obsessive-compulsive disorder (OCD) represents one separate disorder within the general classification of Anxiety disorders. Tourette's disorder is one of four Tic Disorders that usually present themselves in early childhood or adolescence. Of distinct interest to many professionals in the health and behavioral sciences is the fact that these two disorders often present themselves comorbidly.

This literature review looks at the individual presentation of OCD/TS in the adult population according to the currently accepted diagnostic system. The author then looks at the early onset form of OCD/TS and its diagnostic complexity in children. A third area focuses on the evidenced-based interventions that are used to change the presentation of symptoms for patients suffering with OCD/TS. Last and of greatest importance, how can acceptance-based therapeutic approaches (as opposed to change-based therapeutic approaches) within behavior therapy extend the current treatment protocols for clients that present comorbidly with OCD/Tourette's in the clinician's office?

Obsessive-Compulsive Disorder/Tourette's disorder

Obsessive Compulsive Disorder (OCD) causes an individual to have intrusive thoughts of a frightening or disturbing nature, which in turn may cause the person to do things repetitively. Individuals might perform certain rituals to guard against danger, or to clean one's self or personal areas of home or work again and again (Brain Physics, 2006a). In OCD, it is as though the brain gets stuck on a particular thought or urge and just cannot let go (OCF, 2005).

Tourette's Disorder (often referred to as Tourette's syndrome and abbreviated here as TS) is an inherited disorder characterized by involuntary utterances and body movements. Initially, at the onset of TS, these body movements can appear to be ritualistic in nature. Tourette's syndrome is believed to be a movement disorder caused by a problem with the brain. This problem affects thousands of people of all ethnic backgrounds and causes people to make repetitive movements and sounds which they cannot control (NSW Health, 1996).

The classification system

At the present time, the Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition, Text Revision (DSM-IV-TR, APA, 2000) sets the criteria by which clinicians attempt to diagnose their clients who present with distressful symptoms of a mental and/or emotional nature. This system is categorical in its presentation and the many editors of the text relied on homogeneous symptom groupings when making their final criteria sets. In their own words, "disorders do not always present themselves in categorical fashion (APA, 2000, xxxi)." Even so, this study will begin by examining the characteristics of OCD as a separate disorder within the class of anxiety disorders and TS as one of a class of Tic Disorders. The author will then attempt to distinguish the difference between the compulsions of OCD and the tics within TS. Finally, this section examines the difficulty with comorbid presentation of OCD/TS.

Anxiety disorders: Obsessive compulsive disorder

According to the DSM-IV-TR (APA, 2000), OCD is categorized under the general heading of Anxiety Disorders. As a separate disorder, the essential features of OCD

include either of the following: (1) recurrent obsessions or (2) compulsions that are severe enough to be time consuming or cause marked distress or impairment.

Obsessions are defined by the following four criteria: (1) recurrent and persistent thoughts, impulses or images which cause marked anxiety or distress; (2) the thoughts, impulses or images are not simply excessive worries; (3) the afflicted individual attempts to suppress or neutralize them with some other thought or action; and (4) in adults with OCD, the affected individual recognizes that the impulse or image is a product of his or her own mind. Adults also recognize that these thoughts are intrusive and inappropriate and cause marked distress (APA, 2000).

Compulsions have two defining criteria: (1) repetitive behaviors or mental acts that the person feels driven to perform in response to an obsession or a rule that must be applied rigidly; (2) these behaviors are performed in a effort to reduce distress or prevent some dreaded event; however, the behavior is not connected in a realistic way with what the individual is trying to neutralize (APA, 2000).

In addition to the presence of obsessions or compulsions, the adult individual has recognized that these are excessive or unreasonable, they are time-consuming and interfere significantly with the person's normal routine, either occupational, academic or social activities. Clinicians are reminded to rule out features which occur as a direct result of substance abuse or medication (APA, 2000).

Advancing the understanding of OCD, Leckman, Grice, Boardman & Zhang (1997) were able to identify four symptom dimensions into which adult patients with the disorder can be grouped. These four dimensions include (1) obsessions and checking, (2) symmetry and ordering, (3) cleanliness and washing and (4) hoarding. This categorical

breakdown has helped in studying the specific treatment protocols that are most efficacious with each subtype.

Tic disorders: Tourette's syndrome

Tic Disorders are classified within the section of the DSM-IV-TR (APA, 2000) as disorders usually first diagnosed in infancy, childhood or adolescence. There are four distinct tic disorders: (1). Tourette's Disorder, (2). Chronic Motor or Vocal Tic Disorder, (3). Transient Tic Disorder and (3). Tic Disorder Not Otherwise Specified.

The following generalities apply to all four tic disorders: (1) tics can range from simple to complex and can be motoric or vocal; (2) tics are generally experienced as irresistible and often include a pre-monitory urge (rising tension or somatic sensation in a part of the body that precedes the motor or vocal tic; a feeling of relief or tension reduction follows the expression of a tic); and (3) tics are often emitted in bouts of one or several tics; these bouts can vary in severity over the course of hours or over the course of days. The tics also may vary at school, home or work and can be exacerbated during periods of stress (APA, 2000, p.109).

Tourette's syndrome as a separate disorder has four defining criteria: (1) multiple motor and one or more vocal tics have been present at some time during the illness. The tic must be sudden, rapid and recurrent but the motor and vocal tics did not have to be present at the same time; (2) the tics have occurred many times a day, usually in bouts nearly every day throughout a period of more than one year. There was never a tic-free period of more than three consecutive months; (3) onset was before age eighteen; and (4) this disturbance is not due to the effects of a substance or general medical condition (APA, 2000).

Differential diagnosis: Compulsions vs. tics

One complication that arises initially is distinguishing between the compulsions of OCD and the tics of TS. According to the DSM-IV-TR, tics must be distinguished from compulsions. “A tic is a sudden, rapid, recurrent, nonrhythmic stereotyped movement or vocalization (e.g., eye blinking, tongue protrusion, throat clearing)” (APA, 2000, p.461). The repetitive behaviors or rituals that define compulsions are performed in response to an obsession that the individual is trying to neutralize. Because a tic can look like a repetitive ritual, clarity on the presence of a precipitating obsession is needed to make a differential diagnosis. Originally in the third edition of the Diagnostic and Statistical Manual, the criterion of purpose was used to distinguish compulsions from tics. Compulsions might be used to produce or prevent some future event or situation. Tics, however, were described as purposeless and involuntary (Pitman, Green, Jenike & Mesulam, 1987).

Currently, a tic is distinguished from a compulsion by the presence of a premonitory urge. With a tic, there exists a premonitory urge but compulsive rituals are usually performed until the affected individual experiences that ‘just right’ feeling (George, Trimble, Ring, Sallee & Robertson, 1993; Leckman, Walker, Goodman, Pauls & Cohen, 1994). If tics are present in addition to the repetitive rituals which define compulsive acts, both diagnoses of obsessive-compulsive disorder and a tic disorder can be tentatively considered.

The problem of presentation: OCD and TS

As separate disorders, the criteria for OCD and TS are clearly established. Unfortunately, individuals rarely present in the clinician’s office with such distinct

criteria that enables a quick and accurate diagnosis. In addition, the distress that sends clients into therapeutic settings is often distress for a significant family member (spouse, roommate or parent) rather than for the individual him or herself. Of interest here is the fact that it is not usually considered a disorder in the adult until the affected individual recognizes that the obsessive thoughts are intrusive, inappropriate and cause distress. Many individuals with OCD are not certain that their obsessive-compulsive symptoms are unreasonable or excessive (Foa & Kozak, 1995). When the DSM-IV-TR was published, an individual's ability to recognize that the obsessions or compulsions are excessive or unreasonable was said to occur on a continuum (APA, 2000).

Currently, the complex clinical presentation of OCD is best understood as a spectrum of potentially overlapping syndromes that can (1) coexist in any patient, (2) be continuous with normal obsessive-compulsive phenomena and (3) extend beyond the traditional diagnostic boundaries of OCD (Mataix-Cols, Rosario-Campos & Leckman, 2005). DSM-IV-TR, the gold standard in the diagnostic field of mental disorders, also acknowledges the limitations of the categorical classification system (APA, 2000, p.xxxi).

Another problem with the presentation of OCD is that the symptoms are continuous with normal obsessive-compulsive phenomenon; the thoughts and habits that eventually contribute to the distress of an individual begin by having a very real adaptive function. This adaptive process gone badly is just one perplexing dynamic in OCD (Stein, 2002). In addition to having a very real adaptive function for the OCD client, certain symptomology can be admired in the patient expressing his or her symptoms. Checking and repeating behavior and attention to detail can be admired as valuable qualities in the

conscientious adult or young adolescent. Praise of these behaviors can help to further embed them in the individual, making the client harder to treat at the point when distress is experienced, or when it is the subject of concern by significant others (Mrdjenovich & Bischof, 2003). The line between normal adaptive anxiety and anxiety gone amok, as in the compulsive rituals, is a very fluid line and remains open to interpretation between the clinician and the distressed client. Although parsimony is attractive, this multidimensional perspective better explains the complexity of OCD (Leckman et al., 1997).

Diagnosis of TS is a bit more straightforward. With TS, the characteristic that multiple motor and one or more verbal tics must be present is easier to observe. Also, the symptoms of TS are expected to present themselves before age eighteen. Diagnosis of OCD/TS in its comorbid presentation becomes the difficult part, especially in its early onset subtype. Because evidence-based treatment protocols are designed for specific disorders, accurate diagnosis becomes especially important.

Early onset OCD/TS: Diagnostic complexity

As a clinically heterogeneous disorder, OCD has been difficult to study. Some researchers have attempted subtyping, based on the variety of compulsions (Leckman et al., 1997). Another direction in subtyping has been to ascertain the age of onset of OCD symptomology (Rosario-Campos, Leckman, Mercadente & Shavitt, 2001). Current findings suggest that OCD is a relatively common disorder during childhood and adolescence and its prevalence in children is relatively consistent with its prevalence in the adult population (Presta, Marzitti, Dell'Osso & Pfanner, 2003).

According to Rosario-Campos et al. (2001), preliminary results indicate that age of onset may help determine phenotypic differences in the presentation of OCD. Early onset was associated with higher frequencies of tic-like compulsions, higher frequency of sensory phenomena, and a higher rate of comorbid tic disorders in general. Children with OCD with an early onset of symptoms have been associated with higher presentation in males. This is also the case for adults who present with OCD. Morer, Vinas, Lazaro and Calvo (2006) looked for biological markers to identify early onset OCD as a subtype. Although this team could not confirm specific biological markers, they were able to add support to the research that subtyping age of onset does present with phenotypic differences. The most salient finding for purposes of this study is that early onset OCD was associated with higher frequencies of tic disorders.

Familial issues

Children with early onset also have a higher familial loading for OCD (Fyer, Lipsitz, Mannuzza, Aronowitz & Chapman, 2005). This presents its own problems for diagnosis. Often, families with affected children make accommodations for the OCD through assistance with rituals, making assurances and facilitating avoidance of feared stimuli. Involvement by adults in elaborate rituals is not uncommon (Robinson, 1998). Sometimes the rituals are in the form of compulsive reassurance-seeking from adults (Geffken, Sajid & MacNaughton, 2005). Family members even try to hide or disguise the affected member's symptoms (Presta et al., 2003). These behaviors by families are widely recognized as reinforcing and maintaining OCD symptoms (Waters, Barrett & March, 2001).

The presence of tics in addition to any compulsive rituals further exasperates the families who may try to prevent their children from performing these tics. On the other continuum, sometimes parents are oblivious to the symptoms. Swedo, Rapoport, Leonard, Lenane & Cheslow (1989) noted that children frequently performed their rituals for six months before their parents even became aware of the behavior. In addition to familial loading for OCD and comorbid tic disorders, it is not uncommon to find other psychiatric disorders within families.

Egodystonic vs. egosyntonic experiences

According to the classification system (APA, 2000), adults must recognize that their obsessional thoughts are intrusive, inappropriate and cause marked distress. Children will often present with compulsive rituals than obsessions (Presta et al., 2003). These rituals may actually be egosyntonic for the young child or adolescent, whereas the intrusive thoughts and subsequent rituals are usually egodystonic to the adult sufferer. For children, the DSM-IV-TR criteria that the client recognize his or her obsessional thoughts as distressing, is not necessary (APA, 2000).

Concerns with additional comorbidities

Rarely does the presentation of OCD exist by itself within the young child or adolescent. Tourette's syndrome is found to be comorbid with OCD in great excess compared to the population at large (Pitman et al., 1987; Greist, 1998; Weir, 2000). Many patients with TS also have symptoms of a hyperkinetic disorder along with the OCD (Leckman, 2002). Patients may also experience major depression at some point after onset of OCD. Other anxiety disorders are present with increased prevalence in the OCD patient (Greist, 1998).

Developmental considerations

As a final point, it is important to note that the level of sophistication has yet to be achieved with the research into children's developmental issues considered critical for understanding disorders in children. Knowledge of developmental tasks and normal development were not previously considered in the planned research strategies that informed us of disorders in adults. Consequently, diagnosis of OCD is often overlooked or even misidentified by health professionals; pediatric OCD has just entered the laboratory of research professionals (Robinson, 1998). The etiology and subsequent presentation of OCD in children is in its infancy (Cooper, 2001).

The relevance of assessment

As with any disorder, interventions begin with accurate assessment. Currently there are several different methods used to assess obsessive-compulsive symptoms, including diagnostic interviews, clinician administered inventories, self-report measures, and parent-report measures. The parent-report measures are the most useful in confirming a diagnosis in children.

Neuropsychological performance in children is sometimes considered but this type of extensive testing does not yield enough information to be useful in assessment (Ryan, 1995). Only one distinction has resulted from neuropsychological and neuroimaging studies. It may be that OCD symptoms are the result of over focused attention on the larger tasks at hand, but OCD comorbid with TS participants had difficulty processing the individual segments of a task (Rankins, Bradshaw, & Georgiou-Karistianis, 2005).

Gender issues

Obsessive Compulsive Disorder is a very prevalent disorder. Although OCD is known to strike men and women equally, TS presents itself in males with a higher prevalence (Pauls, Alsobrook, Goodman, Rasmussen & Leckman, 1995; Lochner & Stein, 2001). At the present time, there are no medical tests to confirm the diagnosis, but the presence of motor and vocal tics as an observable phenomenon that are present for more than one year enable the clinician to confirm diagnosis. It is also commonly accepted that obsessive compulsive phenomenon accompany the presence of TS symptomology. There does seem to be phenomenological differences between OCD and OCD comorbid with TS; however, the differences may reflect differential involvement of neurochemical and neuroanatomic pathways (George et al., 1993). Neziroglu and colleagues (1999) have attempted to present guidelines for assessment and treatment parameters for obsessive-compulsive spectrum disorders. Because of the comorbidity that often occurs with OCD and TS, the clinician is advised to treat the presenting symptoms of either disorder, wherever the distress is for the client.

Evidence- based intervention for OCD/TS

“Expert consensus guidelines issued in 1997 ranked the effectiveness of all treatment options on the basis of published data and expert opinion. According to the guidelines, cognitive behavioral therapy should be the first line of treatment” (Jenike, 2004, p.259). Garralda (2002) also reported on the efficacy of cognitive behavioral treatments.

“Cognitive-behavioral therapy (CBT) for OCD is a psychological treatment that utilizes both behavioral and cognitive therapeutic change strategies to achieve reductions in obsessive and compulsive symptoms by modifying the faulty appraisals, specific core beliefs, and dysfunctional neutralization responses that are implicated in the etiology and

persistence of obsessional complaints” (Clark, 2004, p.187). These CBT strategies include a behavioral piece and a cognitive piece: (1) behavioral exposure to feared situations and the prevention of compulsive rituals and (2) cognitive challenge to the maladaptive thoughts. Specific medications and family involvement are also indicated to enhance treatment effects (Jenike, 2004).

The Behavioral interventions

Behavior therapy involving exposure and ritual prevention (ERP) has been established as the cornerstone of effective treatment for OCD (Greist, 1998). The core components of exposure programs are imaginal exposure (repeated recounting of the anxious stimulus) and in vivo exposure (repeated confrontation with the anxious stimulus). Other behavioral specifics would be tailored to the individual clients. Some examples include: breathing training and relaxation training (Foa, Rothbaum & Furr, 2003). For a complete description of how ERP is used with the OCD client, the reader is referred to Kozak & Foa (1997). March & Mullen (1998) have also developed a treatment manual for using CBT with children affected by OCD.

Unfortunately, the widespread use of ERP is impeded by practical barriers. The procedure, usually delivered intensely at University campuses that specialize in the treatment of anxiety disorders, is also a procedure that requires delivery by a highly skilled therapist. Distance to these sites and/or the ability to commit to an intensive regimen may impede many clients from accessing the treatment. Exposure and Response Prevention procedures can be hard to fit into an individual’s daily life. To enable greater access, Baer & Greist (1997) designed a computer program (BT STEPS) that would make behavior therapy potentially available to anyone with a touch-tone

phone. Current research is examining the effectiveness of an intensive ERP regimen involving fifteen sessions over three weeks vs. twice weekly sessions over a longer time frame (Abramowitz, Foa & Franklin, 2003).

The Cognitive interventions

After assessing the cognitive ability of the distressed client, cognitive restructuring may be an indicated intervention. The main goal of cognitive restructuring is the modification of erroneous beliefs related to the need for compulsive rituals (Foa et al., 2003). One drawback to this procedure with children involves developmental considerations. Children do not usually have the insight to reflect on an erroneous belief at the cognitive level. Cognitive interventions, in the form of psycho education may be indicated for the family rather than for the child.

Medical interventions

One of the more effective medication interventions for OCD includes the serotonin reuptake inhibitors (SSRIs). This class of drugs has proven to be effective for adults but few studies have been done with children. Even so, SSRIs are believed to be safe for short term treatment (Bradbury, 1998). In a tiny minority of patients who are unresponsive to SSRIs and behavior therapy, neurosurgery merits consideration (Greist, 1998).

Family treatment

Because the treatments for OCD have shown definitive progress, researchers have extended their protocols to include families. Components of the family protocol included: (1) psycho education about OCD, (2) differential reinforcement of behavior, (3) reducing parental involvement in the obsessive-compulsive symptoms and (4) increasing

positive family interactions (Waters et al., 2001). Using pre- and post-treatment measures with families, Waters et al. (2001) found the following preliminary data: (1) symptom severity reduced by 60% in all participants; and (2) family involvement in reinforcement and maintenance of the symptoms decreased across time. The addition of the family component contributed to improved outcome and increased treatment compliance.

Natural history of the disorders

Although there currently is no cure for OCD/TS, there is some data on the natural history of the course of the illness. The motor and phonic tics of TS do wax and wane over the course of days or months. Tics may also present as distinctly different over the course of developmental periods. Some patients can even show a striking reduction in tic severity by age nineteen or twenty years (Leckman, 2002). Although this abatement can occur, there is no data to show the disorder ever disappears completely.

World view of OCD/TS

At one time, TS was considered a rare syndrome. It is now known that it is much more common than once thought; 2% to 3% of the world's population has OCD (Hollander, 1997). Obsessive Compulsive Disorder and TS affect people on every continent (Gournay, 2006). There may be phenotypic differences across the entire spectrum of OCD/TS affected individuals, but a wide and varied continuum of presentation occurs across cultural boundaries.

During the natural course of the disorder, affected individuals often struggle with depression (Sasson, Zohar, Chopra, Lustig, Iancu & Hendler, 1997). This effect on the productivity of the South African community prompted Moller (2002) to study the cognitive functioning of sufferers so that these individuals could achieve their full

potential and in turn, the country of South Africa would benefit from this productivity, in spite of the disorder.

Because the disorder "...is found in all cultures, countries and racial groups..." (Robertson, 2000, p.427), the clinician is wise to consider the ethnic identity of the client. In many communities, ritual behavior may be part of the spiritual or religious practices that contribute to the community's cultural heritage. Lemelson (2000) found that in one Indonesian community, Balinese culture strongly shaped the symptomatic expression of OCD/TS. The ability to distinguish between egosyntonic vs. egodystonic rituals would be an important part of case conceptualization with other-cultured clients.

Extending the behavioral tradition

Very few individuals with OCD ever experience a complete remission of symptoms. Often a clinician stops working with the client, or the individual stops working with the clinician, after symptoms have been reduced to tolerable levels (Brain physics, 2006b). Because OCD/TS is well accepted as a life long illness, with long term or even lifelong treatment appearing necessary, those agents that result in better tolerance will prove preferable (Flament & Bisserbe, 1997). In addition, treatments need to be tolerable for families. In his own words, John Berez who suffers with OCD/TS has argued that this „biopsychosocial' condition was functional for him. To do less, given his familial and environmental conditions would be catastrophic (Berez, 1992).

At the current time, interventions such as CBT and medication look towards direct symptom relief as a sign of their effectiveness. The primary mindset both of the clinician and of the client is to „change' the presentation of symptoms. Even family participation

looks toward changing the client or changing the interaction of the families with the client. Admittedly, this is the goal of therapeutic interventions.

A New Paradigm: Mindfulness and acceptance

Recently, clinicians committed to the cognitive behavioral tradition have been testing the efficacy of mindfulness strategies. These strategies extend the behavioral tradition beyond symptom reduction and acknowledge that some disorders cannot be cured. This shift in behavior therapy has created much excitement in the research community. These strategies, collectively called mindfulness techniques are radical additions to behavior therapy because “they challenge the universal applicability of first-order change strategies” (Hayes et al., 2004, p.5). These new behavior therapies examine constructs such as acceptance, the therapeutic relationship, values, spirituality, meditation and in particular, living life in the present moment. Each of these concepts can be looked at individually as separate techniques or they may be looked at collectively as part of a second order change process that occurs between a client and a clinician. When viewed as second- order change strategies, it can be noted that they have been practiced for thousands of years outside the circle of the scientist practitioner psychologist. Given the complexity of presentation of OCD/TS, the lack of evidenced- based treatment for complete elimination of symptoms and the lifetime course of the illness in affected individuals, one of the second-order change strategies seems indicated for sufferers of early onset OCD/TS.

Mindfulness Based Treatments

Mindfulness is a categorical name for a group of specific techniques that has been gaining support within the third wave of behavioral and cognitive therapy (Hayes et al.,

2004). Mindfulness practices attempt to orient clients to the world as they experience it directly. Someone who starts to become mindful embarks on a process of awareness, living his or her life in the present moment.

Therapeutic programs with mindfulness as the core intervention have recently become very popular (Mace, 2007) because of their effectiveness in helping patients with difficult to treat symptomology. Several protocols using mindfulness as the core intervention for treatment resistant disorders have been developed with promising results. Some of these include: (1) Acceptance and Commitment Therapy (ACT), which is a general clinical approach to values based living (Hayes, Strosahl & Wilson, 1999); (2) Dialectical Behavior Therapy (DBT) developed to treat borderline personality disorder (Robins, Schmidt & Linehan, 2004); (3) Mindfulness Based Stress Reduction (MBSR) focuses on clients with chronic pain (Kabat-Zinn, 1990); and (4) Mindfulness-based cognitive therapy (MBCT) which is showing success in preventing relapse for recurrent major depression (Segal et al., 2004). Each of these structured interventions has received empirical support in randomized controlled trials. For purposes of this study, MBCT will be discussed further because of its applicability in treating recurrent major depression, a common side effect for individuals living with early onset OCD/TS (Greist, 1998).

Mindfulness Based Cognitive Therapy

Mindfulness based cognitive therapy is an innovative, eight session program designed to prevent relapse in clients who have recovered from depression. It does so by helping clients cultivate awareness of their own thoughts and bodily sensations through a series of guided meditations. The key skill in using a mindfulness based protocol, including MBCT is to maintain awareness in the present moment.

In order to cultivate awareness of bodily sensations, it becomes important to teach clients to pay attention to the individual parts of the body. This is accomplished by doing a body scan meditation. The body scan exercise is the starting point of mindfulness practice. It is believed that one must become mindful of the body in order to gain greater awareness of oneself in the present moment. This exercise is important because clients affected with OCD/TS can often feel a premonitory urge or tension in some part of the body before manifestation of a ritual or tic. The aim of the body scan exercise is to bring detailed awareness to each part of the body.

During the guided body scan meditation, the facilitator asks clients to become aware of sensations in their legs, feet, toes, arms, fingers, faces and necks. While an individual is being guided through the various parts of his or her body, he or she is also asked to become aware of an in-breath as an in breath and an out-breath as an out breath. All of this is done with reference to nonjudgmental awareness; do not judge, just notice.

Through nonjudgmental awareness, the facilitator also aims to teach participants to disengage from those cognitive processes that may render them vulnerable to future depressive episodes. By becoming mindful of thought patterns and emotions, clients who have experienced depression may be able to recognize the type of rumination that leads the depressed person's thoughts from spinning out of control. This is believed to be one of the mechanisms of change in MBCT (Segal, Williams & Teasdale, 2002). Several studies replicating MBCT indicated an improvement in depression scores (Waller, Carlson & Englar-Carlson, 2006; Kenny & Williams, 2007; Coelho, Canter & Ernst, 2007; Kingston, Dooley, Bates, Lawlor & Malone, 2007).

Rationale for Mindfulness Treatment

Why does mindfulness work? Relational Frame Theory (RFT) has been presented as one underlying theory for the reason why mindfulness is successful. RFT suggests that language entangles clients with thoughts and subsequent physical sensations that may have been feared and/or avoided. Relational Frame Theory, a basic research program about how the mind works, suggests that the mind can be taught to come to a point of stillness in the present moment. This stillness over time has the potential to help patients increase their psychological flexibility (Hayes, Barnes-Holmes & Roche, 2001).

Why might mindfulness work with an OCD/TS client? Because individuals who suffer from OCD/TS struggle with obsessions (thoughts) and often have premonitory urges (physical sensations) before a tic manifests itself, it is believed that mindfulness can help individuals diagnosed with the early-onset form of OCD/TS by increasing their psychological flexibility. The use of mindfulness in OCD has been tried with some success. Breaking an action that has become fused with a previous thought is suggested as the mechanism of change in a preliminary study done with an OCD group (Hamilton, 2008). With OCD clients, mindfulness appears to be a neutralizing technique for the thought/ action fusion which occurs in OCD. This belief supports the principles of RFT. At the present time, mindfulness has not been tried with someone who presents with both OCD and TS.

A second important consideration which makes mindfulness based protocols particularly appealing can be found in the development of the ACT protocol. Acceptance and Commitment therapy begins to lead clients into values- based living. An individual who can begin a process of acceptance can begin living the life he or she chooses to live,

in spite of a disabling condition and regardless of symptomology. Until, and unless, a change-based intervention is developed that can cure individuals of their OCD/TS, these individuals will experience symptoms of the disorder. Hayes & Smith (2005) have described this process of acceptance as moving from suffering to engagement with life. This study hopes to do that for one suburban male.

Chapter 3

Method

Design

This study employed a single subject case design (Kazdin, 2003). Although large studies have been used to examine relationships between dependent and independent variables, experimentation at the level of the individual case has been known to yield the greatest insight into understanding therapeutic change. Thus, the single case design becomes of great value to the scientist-practitioner (Barlow & Henson, 1984) and hopefully, to the individual who will receive a particular intervention.

The research question for this study is: Can three mindfulness techniques help to alleviate one young adult's symptoms of depression? The depressive symptomology was believed to be the direct result of struggling and living with early-onset OCD/TS. Even though therapeutic change and/or removal of symptoms may be the goal of scientifically applied interventions, moving towards acceptance of the subject's OCD/TS symptoms is one of seven client-centered goals in this study. At the present time, no cure has been found for OCD/TS that would totally alleviate all the symptoms of this disorder. Learning to live with remaining symptomology, after years of scientifically applied interventions, remains this client's best hope. The client, who is referred to by the pseudonym Carl, lives at home with his parents and attends the local community college. Possible connections between the client's symptoms and the familial environment were not examined in this study.

Participant

Carl had been diagnosed with OCD/TS approximately twelve years ago during his middle elementary school years. Since that time, he has received evidence-based treatments from reputable providers in the Philadelphia area. These have included Exposure and Response Prevention from the University of Pennsylvania Anxiety Disorders Clinic, medication monitoring from a psychiatrist affiliated with the DuPont Hospital for children, case management from Devereux Behavioral Health and educational supports under the Individuals with Disabilities in Education Act.

Carl has periodically expressed concern that he will never get rid of his rituals and tics. True to Carl's thinking, current research indicates that it is not possible to attain complete elimination of symptomology for early onset OCD/TS. Resultant depression has waxed and waned for Carl over the years since his diagnosis.

Materials

The book entitled *Get out of Your Mind and into Your Life* (Hayes & Smith, 2005) was recently developed to place the concepts of ACT/RFT directly into the hands of the public. Chapter 8 of this text addresses the daily practice of „Mindfulness.’ Each session with Carl and the facilitator will include two specific exercises described in this text: „Be where you are (p.107)’ and „Listening to Classical Music (p.113).’ Each session will end with a third mindfulness technique called „Conscious Breathing’ adapted from Hanh (1991, p.108). These three exercises will serve as the core of the intervention. Choosing only three mindfulness techniques will serve to make the sessions structured and predictable. Detailed descriptions of the three techniques are attached as Appendices A, B and C.

Facilitator Training

The facilitator is the individual who will actually carry out the mindfulness sessions with Carl. The facilitator for this study was a doctoral candidate in school psychology who has been practicing individual mindfulness meditation from a spiritual perspective for over twenty years. Included in the facilitator's personal practice have been several periods of group practice. Evidence suggests that the personal practice of mindfulness enhances the effectiveness of a facilitator's transfer of skills to the client including much more empathic responding (Block-Lerner, Adair, Plumb, Rhatigan, & Orsillo, 2007; Wang, 2007)). Empathy between a client and therapist has long been identified as one of the necessary conditions for change during the therapeutic process (Rogers, 1969; Rogers, 1975; Rogers, 1979; Rogers, 1992; Rogers, Cornelius-White & Cornelius-White, 2005).

Measures

Three measures of effectiveness were used to determine if the mindfulness techniques practiced in this study helped alleviate Carl's symptoms of depression. The first of these was the Beck Depression Inventory, Second Edition (BDI-II, 1996). A second measure of effectiveness employed the technique known as Goal Attainment Scaling (Kiresuk & Sherman, 1968; Kiresuk, Smith & Cardillo, 1994). Setting goals can be effective in focusing therapeutic efforts with clients. The facilitator of this study identified seven behaviors that served as a gauge of effectiveness when determining if the mindfulness interventions had an effect on reducing Carl's depressive symptoms and moving him from depression towards engagement with daily life. Although these goals are idiographic in their approach to assessment, they do meet two of Hales, Yudofsky and

Gabbard's (2008) criteria for reasons why treating clinicians do assessment: (1) to assess patient strengths and (2) to monitor treatment. These predetermined goals are attached as Appendix D.

A third measure of effectiveness came from statements made by Carl himself. His self-report data of the meditation experience (doing the mindfulness techniques) was recorded at the end of each session. To facilitate this discussion, four questions were developed to begin a dialogue. These four questions served as guides but were not used to constrain Carl's conversation. The questions are attached as Appendix E.

One criticism that has been levied against change-based therapeutic efforts is that the protocols have an overreliance on narrow measures of symptom reduction. The third wave of behavior therapy began to look at more global measures of effectiveness. Carl's self-report data will be invaluable in deciding if he himself has begun to have more contact with the present moment. In short, what therapeutic benefit does Carl receive from the practice of mindfulness?

Procedures

Carl was asked to take the BDI-II prior to beginning the intervention. Two subsequent administrations occurred at two week intervals during the intervention process (end of week 2 and end of week 4). A fourth administration occurred at the end of the intervention (end of week 8) and a fifth administration occurred approximately four weeks after the end of the intervention. Changes in individual item responses were examined as well as the total scores. The data was analyzed using inferential statistical and descriptive analysis techniques.

In addition, Carl's post-session self-report data was audio taped. This subjective commentary was transcribed and collated into repetitive descriptions of the subject's personal description of the meditation experience.

The seven goal statements, five from clinical data of the client and two which were selected as possible outcome goals from the mindfulness literature, were arrived at collaboratively by the client and facilitator at the end of session fourteen.

Chapter 4

Results

The primary purpose of this study was to test the effectiveness of using three techniques from the mindfulness literature base to extend the healing that has occurred for a young male who has had years of treatment for early onset OCD/TS, without complete elimination of symptomology. Three measures were included to test the effectiveness of this mindfulness based protocol in relieving the client's depressive symptomology and helping him live with the remaining symptoms of early onset OCD/TS, despite years of good, evidenced- based treatment. The measures included: (1) change in the BDI-II, pre-during and post treatment; (2) the attainment of client specific goals designed from clinical knowledge of the individual receiving treatment and (3) self-report data (summative subjective experience) from the client.

This study was designed to include five administrations of the BDI-II. Table 1 displays the client's selections on the 21 BDI-II statements. Choices on the BDI-II ranged from 0 to 3, with 3 reflecting a higher symptomology of the indicated construct.

The second measure of effectiveness included predetermined goals; five of the goals were developed from clinical knowledge of the client and two were selected from possible outcome goals in the mindfulness literature. These goals are identified as Appendix D. Figure 1 represents Carl's attainment of goals, arrived at collaboratively at the end of session 14.

Table 1

Subject's choices on the BDI-II

BDI-II Statement	Pre- Intervention	Two Weeks	Four Weeks	Eight Weeks	Post- Intervention
1. Sadness	+1	0	0	0	0
2. Pessimism	+1	0	0	0	0
3. Past Failure	0	0	0	0	0
4. Loss of Pleasure	0	+1	0	0	+1
5. Guilty Feelings	0	0	+1	0	0
6. Punishment Feelings	0	0	0	0	+1
7. Self-Dislike	+2	0	0	0	0
8. Self-Criticalness	+3	0	0	0	0
9. Suicidal Thoughts	+1	0	0	0	0
10. Crying	+3	0	0	0	0
11. Agitation	0	0	0	0	0
12. Loss of Interest	+1	0	0	0	+1
13. Indecisiveness	0	+3	0	0	0
14. Worthlessness	0	0	0	0	0
15. Loss of energy	0	+1	0	0	0
16. Sleeping Patterns	+3a (more)	+1b (less)	+3a (more)	0	+1a (more)
17. Irritability	0	0	0	0	0
18. Appetite	0	0	+1b (greater)	0	+1b (greater)
19. Concentration	+1	0	0	0	0
20. Fatigue	0	0	0	0	0
21. Loss of interest in Sex	0	+1	0	0	+1
Totals	16	7	3	0	6

Figure 1

Client's attainment of goals

Goal One (A): Concentration (BDI 19)

-2	-1	0	+1	+2
Carl cannot concentrate on any daily tasks	Carl finds it difficult to concentrate on one daily task	Carl can concentrate on one daily task	Carl can concentrate on two or three daily tasks	<u>Carl can concentrate on more than three daily tasks</u>

One (B): Task Completion

0	+1	+2
Carl can complete one daily task	Carl can complete two or three daily tasks	<u>Carl can complete more than three daily tasks</u>

Goal Two: Sleeping patterns (BDI 16)

-2	-1	0	+1	+2
Carl spends much of the daylight hours in his bed	<u>Carl only returns to bed for one nap (maximum=30 minutes)</u>	Carl wakes in the morning and does not return to bed until the late evening	Carl wakes in the morning and completes all scheduled activities	Carl wakes refreshed, completes all activities and begins to prepare for the next day

Goal Three: Self-Perception (BDI 7)

-2	-1	0	+1	+2
Carl expresses disappointment in most aspects of himself	<u>Carl becomes disappointed in no more than one aspect of himself</u>	Carl does not express disappointment in himself	Carl can express pleasure in one aspect of himself	Carl expresses pleasure with two or more aspects of himself

Goal Four: Affect (BDI #1 and #10)

-2	-1	0	+1	+2
Carl feels like crying much of the day but can't	Carl feels sad much of the day	Carl does not think about sad things	Carl expresses happiness at least once during the day	<u>Carl expresses happiness more than once during the day</u>

Goal Five: Focus on the Future (BDI #2)

-2	-1	0	+1	+2
Carl is more discouraged about his future than ever	Carl expresses discouragement about his future	Carl does not express discouragement and can speak positively about one future event	<u>Carl can speak positively about future events and have a conversation about future goals</u>	Carl converses about future goals and looks forward to realizing those future goals

Goal Six: Relaxation vs. agitation

-2	-1	0	+1	+2
Carl feels agitated much of the day	Carl feels agitated some of the day	Carl senses a few moments of feeling relaxed	<u>Carl feels relaxed a few hours a day</u>	Carl feels relaxed most of the day

Goal Seven: Centered (Acceptance)

-2	-1	0	+1	+2
Carl is angry that he has OCD/TS	Carl expresses discomfort with his OCD/TS	Carl does not feel discomfort about having OCD/TS	<u>Carl expresses acceptance of his OCD/TS</u>	Carl accepts happily that he has OCD/TS

The third measure of effectiveness comes from Carl's self-report data. Table 2 identifies verbal comments that Carl repeatedly expressed in the post-session discussion. A more complete text of these comments is included as Appendix F.

Table 2

Client's repetitive descriptions during post-session commentary

<u>Description</u>	<u>Session Number</u>	<u>Quotes</u>
Relaxation	1,3,5,6,8,10,12,13,14	I feel relaxed; this relaxes me
Pleasantness	1,5,6,7,8,10	I like that; it feels good; it was good; it could be cool; I like this
Anxious to calm	2, 3,9,10	I felt anxious; now I'm calm
Connection to the music	2,3,6,11,13	It's peaceful; the music tells a story for me; it was my favorite part; it took me away; I listened consciously
Existential	1,6,8,13,14	I think about the rest of my life; I tried to connect with the spirits; I'm aware of the life in the tress; life can be compared to a leaf floating on a stream

Chapter 5

Discussion, Limitations and Recommendations for Future Research

The results of this effectiveness study are encouraging. For a young male who has received evidenced-based treatment for early onset OCD/TS, who has never experienced full relief of his symptomatology, and who has been experiencing depressive symptoms as a direct result of living with OCD/TS, mindfulness proved to be a promising form of treatment. The results of the study clearly indicate that this individual did benefit from practicing mindfulness.

Summary of the results

On the first measure of effectiveness, the BDI-II, the client's pre-treatment total score was (16). According to Beck, Steer & Brown (1996), total scores in the range of 14-19 suggest a mild level of clinical depression. The client's depressive symptomatology reduced to a score of (7) after two weeks of practicing mindfulness, and to a score of (3) at the end of four weeks. At the end of the eight weeks, the client was not expressing any symptomatology (BDI-II, total score = 0). This progression downwards to a summative total score of (0) represents significant symptom improvement during the course of the intervention.

The client in this study also filled out the BDI-II approximately four weeks after the mindfulness practice with the facilitator had ended. At that time, the client's total score was at (6). Previously diminished symptoms of depression were beginning to surface in the client's life, but the level of symptom expression was much lower than it had been at the outset of the treatment.

The second measure of effectiveness was represented by the seven goals identified as Appendix D. Goals one through five were created, using the constructs in several item choices of the BDI-II and clinical knowledge of the subject of this study. Table 3 represents the comparison between the subject's clinical goals and the BDI-II.

Table 3

BDI-II comparison with client developed goals

<u>BDI-II Construct</u>	<u>Client Goals</u>
(#19) Concentration difficulty	(1A) Concentration and (1B) Task Completion
(#16) Changes in sleeping pattern	(2) Sleeping Patterns
(#7) Self-dislike	(3) Self-Perception
(#1) Sadness and (#10) Crying	(4) Affect
(#2) Pessimism	(5) Focus on the future

Goals six and seven were developed from constructs represented as possible outcomes in the mindfulness literature.

According to facilitator/client consensus, arrived at together at the end of session fourteen, Carl achieved homeostasis or better in three of the first five goals. By his own expression, Carl believed that he was able to concentrate and complete most daily tasks. The consensus choice of +2 on this Likert scale represents the highest possible goal attainment for Goals 1A and 1B. Goal four, which was related to Carl's affective state, also reached +2, the highest possible goal attainment. During the post-treatment discussion, Carl expressed it in this way, "Wherever I am, I try to be happy in the moment." Carl identified this expression of happiness as occurring more than once during

the day. Goal five, which was related to Carl's perspective on the future, reached +1. This choice represented a positive state, better than homeostasis.

Goals two and three, sleeping patterns and self-perception, remained in a negative state. Carl and the facilitator believed that -1 was the point at which Carl remained for both of these goals after practicing mindfulness. Carl himself recognized that he often returns to bed for a nap without some external structure to keep him up and focused. This point will be discussed later, as a consideration when working with young people.

With Goal three, self-perception, Carl continues to be disappointed in his ability to communicate verbally. He finds it difficult to communicate clearly to others in personal conversation. This one aspect of himself continues to disappoint Carl (-1 on Goal three). It is hypothesized that this particular ability could be related to an educational deficit and would not be directly ameliorated through the practice of mindfulness. During Carl's educational years, time spent on ritualistic behavior often limited his access to direct skill instruction. Carl did express pleasure in other aspects of himself and thus, +2 could be selected as overall goal achievement, but for purposes of this study, -1 remained the consensus choice because of Carl's desire to relate his displeasure with his verbal communication difficulties to the facilitator at the end of session 14.

Goals six and seven were created in consideration of possible outcomes posited in the mindfulness literature. Although relaxation, goal six, is not expected as a direct result of mindfulness meditation, it has been shown to be an indirect result of this practice. Mindfulness meditation has been shown to decrease distress and increase positive mood state to the same extent as relaxation training (Jain et al., 2007). In this study, relaxing was established as a goal for this client in part because of the clinical knowledge about

this client and in part because of this known side effect of mindfulness meditation. From this point forward, it is acknowledged that relaxation is often a positive side effect of practicing mindfulness, but is not the primary goal desired from the practice of mindfulness. It is noted that the direct goal of mindfulness meditation is to stay in touch with the present moment, especially when difficult thoughts or sensations arise for an individual. For purposes of simplifying the discussion, goals six and seven will be referred to as outcome goals of the practice of mindfulness.

During the course of practicing mindfulness with the facilitator of this study, Carl did express feeling relaxed nine times during the post-session commentaries. Concurrently, Carl expressed the idea that he moved from feeling anxious to feeling calm after four of the sessions. He expressed liking the experience, or in the vernacular of a young person, „it was cool,‘ six times. Collectively then, these comments led to the consensus position of +1 on goal six. Carl felt that learning the mindfulness techniques helped him feel relaxed a few hours a day. Carl experienced this positive side effect from practicing mindfulness meditation.

Mindfulness has also been posited as an effective tool in achieving acceptance of the life one is living at the present moment (goal seven). Indeed *Acceptance and Commitment Therapy* (ACT) was developed with this stated seventh goal in mind. Although Carl could not make the leap to a state of mind in which he happily accepted his disability, he did express the thought that he has had many experiences that he has valued as a result of having early onset OCD/TS. This expression of acceptance led the facilitator and Carl to choose +1 on Goal seven, Carl accepts his OCD/TS.

The third measure of effectiveness was Carl’s repetitive descriptions of the experience

at the end of each session (See Table 3). In this study, the practice of mindfulness produced a state of relaxation for Carl 64% of the time, a state of pleasantness 43% of the time and movement from anxiety to a state of calm 29% of the time.

Significance of the results

This intervention study was developed to test the effectiveness of using three techniques from the mindfulness literature base in relieving the depressive symptoms for one young male who has received evidenced- based treatment for early onset OCD/TS. This individual did benefit from practicing mindfulness with the facilitator of this study. The client's personal benefit was evidenced by (1) depressive symptom reduction based on the scores on the BDI-II; (2) positive goal attainment on three out of five client-centered goals and on both outcome goals posited from the mindfulness literature and (3) the personal reports of the client receiving this treatment. These results represent significant improvement for the client who received this treatment.

A secondary line of inquiry in this study related to identifying dimensions of practicing mindfulness that need to be considered when mindfulness is used with young people served under IDEA in schools. Under IDEA, schools are tasked with assisting individuals with disabilities to have greater access to all aspects of the educational milieu. The subject of this study received a public education with the safeguards of IDEA in place. During Carl's educational tenure, time spent on ritualistic behaviors often limited his receipt of some basic skill instruction. The school district tried to ameliorate these deficits with extended school year services (ESY) and with access to supportive tutoring in the home. Although these services were delivered in the best interests of Carl's skill development, Carl continues to be deficient in verbal communication, a direct skill

identified in the state standards for Language Arts instruction. Recognizing that some students can graduate from high school with a diploma, yet still have skill deficits, represents a significant finding. If students can be brought to a place of stillness through the practice of mindfulness, their access to longer periods of direct skill instruction might occur.

It has been mentioned that Carl often went to bed for a nap when he did not have an external structure to keep him awake and focused on a task. Stopping to call attention to one's breath may serve to focus students when they need to remember one or more tasks that are required of them during their tenure as students. In a recent pilot study, Chan, Han and Mei-chun Cheung (2008) found that focused internalized attention did occur in a group of college age students while practicing mindfulness based meditation. The client in this study also benefited from the practice of mindfulness during the period when facilitator-led sessions were on this client's calendar. This study and the aforementioned pilot study bring attention to the fact that young people need some mechanism to encourage their continuation of mindful attention after a series of mindfulness meditation sessions conducted for experimental purposes has ended. Sustaining clients' focused attention after facilitator-led sessions has ended represents an area requiring further research. The client in this study had tasks to do, but sometimes chose to forego them for a nap, a common choice of adolescents. This point represents a developmental conundrum that would have to be addressed in the practice of mindfulness with young people. It is not hypothesized that mindfulness meditation can address what may be a normal and healthy developmental phase that young people must pass through before they emerge as young adults on the other side of their formalized educational path. It

suffices to note here that young people are receptive to the practice of mindfulness meditation.

Carl also expressed a connection to the music 36% of the time. Many have had the experience of listening to a piece of music that activates a sense of wonder and pleasure. Indeed, recent research has confirmed the fact that there is a very complex relationship that occurs between music and the brain, especially the older mesolimbic brain structures responsible for emotional processing (Perretz & Zatorre, 2003). The creative use of music in psychotherapy also has its own long history of different intervention trends throughout the ages (Griffin, 2005). For this reason, activating the older, emotional brain in the service of helping young people served under IDEA holds promise. Using music as one mindfulness technique could be an important consideration when developing a protocol to use in schools with young people identified under IDEA. Listening to music, also part of the protocol used with young college students in Chan et al.'s (2008) study, has been shown to induce positive emotions; Carl's positive response to the music confirms this finding.

Another significant point to be made about this protocol is that conscious breathing is a portable technique. The client in this study reported using conscious breathing outside of the sessions two times.

Limitations of the study

One construct raised in post-session commentary involved existential concerns. Carl spoke of thinking about the rest of his life or about spiritual matters 36 % of the time. Because this protocol was delivered in a one-to-one setting, the length of each session had a flexible time component. Mindfulness-based cognitive therapy for depression was

developed as a class program, delivered in a group setting. The flexible nature of the treatment sessions in this protocol is a limitation which needs to be addressed in future designs. Carl's post session comments were audio taped for purposes of this study so it was apparent that the facilitator and Carl fell into what will be identified as therapeutic drift (TD). Sessions 2, 6,7,8,10,11 and 13 contained elements that were reflective of therapeutic content. This departure from the protocol occurred 50% of the time which adds a significant chunk of time to the protocol as developed and confounds any cause/effect relationship that might be inferred from the results with respect to the effect of mindfulness with this individual. Departure from the protocol was sacrificed to maintain client/facilitator rapport, believed to be a key to any type of treatment success (Leach, 2005).

The facilitator of this study and the subject had a prior relationship, as educator and student. It is hypothesized that this prior relationship may have contributed to helping the client experience relief from depressive symptomology as a direct result of living with early onset OCD/TS. Although it is not detrimental to helping this client, it complicates the study because it cannot be ascertained whether or not practicing mindfulness contributed to a reduction in depressive symptoms or if it was the result of other factors stemming from the long-established therapeutic alliance.

This study was concerned with alleviating the depressive symptoms for one young male who has received years of good evidenced-based treatment for early onset OCD/TS. Concern with the mechanism of change is important to the ongoing research practices that inform the science of psychology and treatment practices documented for practitioners. In this intervention study, it is not possible to confirm the mechanism of

change. Indeed, TD may account for the success that this individual experienced from the practice of mindfulness, severely limiting the generalizability of using mindfulness as the sole treatment modality in efforts to improve the treatment of others with early onset OCD/TS.

A question that also remains is whether or not someone who has not received as much good evidenced-based treatment would also benefited to the same degree from mindfulness. Carl was tired of the plethora of home-based service providers that moved in and out of his home over the previous twelve years. He also liked the fact that he could go for an extended period of time without case management meetings or medication monitoring visits. It is hypothesized that Carl was ready for an intervention, which at first glance is relatively innocuous. This same intervention, applied as a first treatment for someone struggling with OCD/TS may not yield the same significant improvements.

Also, Carl was at the right age for reduction of symptoms with early onset OCD/TS. At the time of this intervention, Carl had just celebrated his 21st birthday. Leckman (2002) had found several instances during which some patients show a striking reduction in tic severity by their twentieth birthday. If this is the natural course of the disorder, it would be even harder to ascertain cause-effect when trying to make the case for a mindfulness-based protocol to treat depressive symptoms of early onset OCD/TS.

Although the body scan and conscious breathing exercises are often included as part of mindfulness-based protocols, listening to a piece of music is only one activity which can be chosen from many within the literature in an attempt to have clients try to still their minds in the present moment. The client in this study did express a connection to

the music 36% of the time in post-session commentaries, and enjoyed the classical (wordless) piece that was chosen, but did not have a choice in deciding which piece of music would be used to practice his listening in the present moment. Future protocols which call for music as one of the mindfulness techniques might allow for client input. By using a piece to which a client can attach meaning may make it possible to increase further the connection to the music. The client in this study was not consulted when Pachelbel's Cannon was selected. Other mindfulness techniques from within the growing body of mindfulness literature could be selected to complement the body scan and conscious breathing technique, increasing client investment in becoming still in the present moment.

Contributions to the field

This protocol, delivered predominantly in the client's home, represents a good starting point for advancing the treatment options to clients who have received evidence-based treatments for early onset OCD/TS. Clinicians who deliver services in their offices could use this protocol, as written, to help their clients maintain contact in the present moment as the client experiences difficult thoughts. It would also be possible to separate the three techniques and to deliver one or more combinations of the techniques for use with a client experiencing a negative emotion. Although MBCT was developed to be delivered in a class setting, the one-to-one methodology utilized in this intervention study gives to treating clinicians three mindfulness techniques to add to their tool boxes of therapeutic techniques.

In addition, this client was quite receptive to practicing mindfulness with his former „educator.’ Special educators who work directly with children who struggle with

disabilities in education could deliver any one of the three techniques used in this study to help those children on their caseloads deal with some of the distressing moments which may arise in their school settings. A person does not need specialized training to talk someone through the body scan meditation in an effort to help a student get in touch with bodily sensations when discomfort arises. Also, conscious breathing, once learned, can take place any time and any place. Once learned, this portable treatment can be a very effective way to bring a student back to the present moment. The client in this study relayed the fact that he did use conscious breathing between facilitator-led sessions during the course of the intervention.

Future directions

The main purpose of this study was to help alleviate the depressive symptoms experienced by one young male who has received years of evidence-based treatment for early onset OCD/TS. To that end, this particular study was successful.

In addition, the researcher of this study was also interested in dimensions that need to be considered when mindfulness as the core protocol is taught to an adolescent or young adult. The client in this study was receptive to all three techniques used in this protocol: (1) the body scan meditation; (2) listening to classical music and (3) Conscious breathing. Although it has been mentioned that the body scan and conscious breathing are often a part of mindfulness-based protocols, the client in this study was not part of the decision making process when the particular piece of music was selected as the third technique. Future protocols could easily be developed with client input, especially in the selection of a wordless piece of music. Indeed, it is hypothesized that if a client already has an

emotional connection to a particular musical selection, the effects of the mindfulness meditation might be enhanced.

When the facilitator of this study returned to the client's home to collect the final data on the BDI-II, it is notable that the client reported that depressive symptoms had started to return. During the post session data collection, Carl reported that he was not practicing mindfulness on his own. How to maintain a personal commitment to the practice of mindfulness after facilitator- led sessions have ended represents an area for future study. It is possible that the client's participation in selecting the mindfulness techniques, or at least in selecting the piece of music before the sessions begin, might enhance the client's willingness to continue practicing mindfulness on his or her own volition.

Another area for further study would be in the area of goal setting as a measure of effectiveness. When this protocol was developed, the main interest was in using mindfulness techniques to alleviate the depressive symptoms for one young male. Using the constructs within the BDI-II, a Likert scale was developed to ascertain additional movement around these constructs. Although goal setting has often been used in the evaluation of mental health treatment, organizational researchers believe that goal setting is one of the most effective methods in motivating employees (Kiresuk et al., 1994). The client in this study did not participate in setting the goals described in Appendix D. They were created primarily for assessment purposes from the clinical knowledge held by the researchers. Client participation in goal setting merits further consideration (Davis, 1988).

When the final BDI-II was filled out by the client in this study, he had already returned to his community college setting and was struggling with some research

assignments that were required by his English teacher. This protocol called for 14 sessions over an eight week time span. The entire protocol took place during the summer months when the client in this study did not have any academic requirements to accomplish. The fact that depressive symptoms started to return as he faced more school commitments may be highly significant. Although scheduling fourteen sessions during the customary school year (September through June) could represent more difficulty, it would be important to test the effectiveness of the use of mindfulness meditation during the school year, especially when distressful thoughts and/or feelings arise during the course of a young person's school obligations. A future study, carried out during the school year would be indicated to test the effectiveness of keeping oneself in homeostasis in the face of significant academic obligations.

This protocol was delivered predominantly in the client's home. Future research is indicated that informs the parameters under which the practice of mindfulness occurs best within a school setting. Semple, Lee and Miller (2006) have begun to test the effectiveness of teaching mindfulness to young people and Wall (2005) has been testing the effectiveness of mindfulness- based protocols, delivered within the formal educational setting. Further research is indicated if mindfulness as the core intervention were delivered in schools to adolescents receiving services under IDEA in schools.

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Appendix A

Be Where You Are Script (Body Scan)

Close your eyes. Slowly, bring your awareness to the tips of your fingers. Feel your fingers. Rub your fingertips together. Can you feel the small indentations on your fingertips? Take your time and try to feel them. Are they rough from lots of work or smooth and silky? How does it feel to rub them together? Take a moment to notice the feelings.

Now rest your fingers where they were before. What are they touching? What does that feel like? Is it soft or hard? Does it have any distinguishing features? Does it have any markings or is it smooth? Take the time to completely absorb the way the object feels to your fingertips.

Now bring your attention to your hands and arms. What do they feel like? Are they relaxed but heavy? Are they tense? Either way is okay. There is no need to judge; simply observe the feelings in your hands and arms. Are there any aches or pains? Take note of these but do not fixate on them. Simply note the pain and move on.

Move your attention down to your toes. Wiggle them around a little. Are they in shoes or socks? Are they free to move about? Squish your toes back and forth, feeling whatever is beneath them. How does it feel? Can you tell what it is just by the feeling? Would you be able to tell only by touch? Just notice the sensations as you bring awareness to your feet.

How is your head positioned? Is it aligned with your spine, or is it drooping, resting on your chest? Without trying to change the position of your head, simply note where it

is positioned. There is no right way for your head to be. Just let it be where it is. Now think about the sensations in your head. Is your head relaxed?

What about your face? How does your face feel? There are all kinds of sensations to explore in your face. Think about your brow. Is it smooth and flat or is it crinkled with stress? Again, don't try to change it, just notice it. Now, bring your awareness to your nose. Can you breathe freely or are you plugged up? Take a few breaths in and out through your nose. How does that feel? Can you feel cool air flowing into your lungs or is the air warm? Pay attention to the feeling for a moment. Now think about your mouth. How is your mouth positioned? Is it pursed? Is it open? Is it closed? What about the inside of your mouth? Is it wet or dry? Can you feel saliva coat the inside of your mouth and throat? Explore all of the sensations throughout your face. Perhaps you can feel oil on your skin. Perhaps your skin is dry. Perhaps there is no feeling at all. Just note it without judgment. Try to relax in the sensation.

Now bring your attention to your chest and belly. Place one hand on your chest and one hand on your belly. Can you feel yourself breathing? What is that like? Are you breathing fast or slow? Are your breaths going into your abdomen or into your chest? Breathe in through your nose and out through your mouth. How does that feel? Now invert the pattern. Breathe in through your mouth and out through your nose. Compare the feeling. Spend some time with your breath. Now place your hands wherever they were before.

Now think of your whole body. Can you feel the backside of your body? Be mindful of the way your body is positioned. There is no need to move, just observe.

Think about the room you are in. Where are you positioned in the room? Do you have a sense of where the door is? What about the ceiling? Can you feel your body in the context of this larger space?

When you are ready, open your eyes and take a look around the room. You can move if you wish. Do you notice where the various pieces of furniture are? What do they look like? Spend as much time as you like investigating the different aspects of the furniture. Remember not to judge, just notice. Relax in this position.

(After approximately five minutes, the facilitator will proceed to Appendix B.)

Appendix B

Listening to Classical Music

Shortly, we will listen to Pachelbel's Canon in D. While listening, you can concentrate on several things at the same time, or simply allow all of your experience to become wrapped up in the flowing movement of the song. (The above comments are repeated during every session.)

(During the first session, the following comments will be stated with the song playing gently in the background. The song will be replayed a second time during the first session, without comment from the facilitator. In sessions two through fourteen, the facilitator will not comment on how to listen to the song, and the song will only be played once after the body scan.)

Facilitator's comments:

Once you have warmed up to the music, bring your attention to one particular sound or set of instruments. Try to distinguish between the different sounds of the various instruments. Can you separate the different sounds? Do you notice the different types of brass instruments?

Can you hear horns? Do you hear the trumpet? Are you mindful of the French horn? Try to name the different instruments as you listen to them. Note the different types of sounds. Notice the low pitch getting higher. Try to notice the blending of instruments.

Do you notice anything happening as you shift your focus back and forth between the different instruments? Do you start to focus on the sound of only one instrument?

Experiment with this by shifting your focus back and forth between the different sounds.

Now try and hold two sets of sound in your mind at one time. Mindfully notice and label the sounds. At what point are you aware of only one sound? At what point are you aware of multiple sounds?

When you are done experimenting with hearing single sounds, bring the entire piece of music into focus. Be mindful of all the instruments playing at the same time. Do you find yourself noticing certain sounds more than others? Can you hear all the different instruments while listening to the piece of music as a whole? What happens when you listen to all the brass instruments together? Does it change into a different, bigger sound? Try to identify the point when single sounds are subsumed by the total piece of music. Mindfully watch the way you interact with the sound.

(At the end of the first playing of the song, the facilitator will make these comments):
Were you mindful of any thoughts, feelings, urges or sensations as you were mindful of the different instrumentation. As we listen to the piece again, try to be conscious of any feelings or sensations that you experience.

(When the piece ends, the facilitator will wait approximately five minutes and proceed to Appendix C.)

Appendix C

Conscious Breathing

(Each session with Carl will end with conscious breathing.)

After the music has ended, the facilitator will say, “breathe in and repeat after me: I know that I am breathing in.” As you breathe out, say “I know that I am breathing out.” Recognize your in-breath as an in-breath and your out-breath as an out-breath.

(After a few breaths, the facilitator does not use the whole sentence; the facilitator just uses the two words, “In” and “Out.” The rest of the script is said verbally during all fourteen sessions.) This will help you keep your mind on your breath. As you practice, your breath will become peaceful and gentle, and your mind and body will become peaceful and gentle.

Breathing in and out is very important. The breath is a link between your body and your mind. Sometimes our mind is thinking one thing and our body is doing another. When this happens, our mind and our body are not unified. By concentrating on our breathing “In” and “Out,” we bring body and mind back together. This helps us to become whole again. Breathe in. Breathe out.

(After approximately five minutes, the intervention will end.)

Appendix D

Assessment of client progress toward treatment goals

Goal One (A): Concentration (BDI 19)

-2	-1	0	+1	+2
Carl cannot concentrate on any daily tasks	Carl finds it difficult to concentrate on one daily task	Carl can concentrate on one daily task	Carl can concentrate on two or three daily tasks	Carl can concentrate on more than three daily tasks

One (B): Task Completion

0	+1	+2
Carl can complete one daily task	Carl can complete two or three daily tasks	Carl can complete more than three daily tasks

Goal Two: Sleeping patterns (BDI 16)

-2	-1	0	+1	+2
Carl spends much of the daylight hours in his bed	Carl only returns to bed for one nap (maximum= 30 minutes)	Carl wakes in the morning and does not return to bed until the late evening	Carl wakes in the morning and completes all scheduled activities	Carl wakes refreshed, completes all activities and begins to prepare for the next day

Goal Three: Self-Perception (BDI 7)

-2	-1	0	+1	+2
Carl expresses disappointment in most aspects of himself	Carl becomes disappointed in no more than one aspect of himself	Carl does not express disappointment in himself	Carl can express pleasure in one aspect of himself	Carl expresses pleasure with two or more aspects of himself

Goal Four: Affect (BDI #1 and #10)

-2	-1	0	+1	+2
Carl feels like crying much of the day but can't	Carl feels sad much of the day	Carl does not think about sad things	Carl expresses happiness at least once during the day	Carl expresses happiness more than once during the day

Goal Five: Focus on the Future (BDI #2)

-2	-1	0	+1	+2
Carl is more discouraged about his future than ever	Carl expresses discouragement about his future	Carl does not express discouragement and can speak positively about one future event	Carl can speak positively about future events and have a conversation about future goals	Carl converses about future goals and looks forward to realizing those future goals

Goal Six: Relaxation vs. agitation

-2	-1	0	+1	+2
Carl feels agitated much of the day	Carl feels agitated some of the day	Carl senses a few moments of feeling relaxed	Carl feels relaxed a few hours a day	Carl feels relaxed most of the day

Goal Seven: Centered (Acceptance)

-2	-1	0	+1	+2
Carl is angry that he has OCD/TS	Carl expresses discomfort with his OCD/TS	Carl does not feel discomfort about having OCD/TS	Carl expresses acceptance of his OCD/TS	Carl accepts happily that he has OCD/TS

Appendix E

Post-Session Questions (Completed after each session)

1. How did the Body Scan feel for you?
2. Were you able to hear the different instruments in the song? ...How about the different pitches at various points in the song?
3. Was the breathing exercise effective in helping you „be in the present moment“?
4. How would you summarize this experience for yourself?

Appendix F

Post Session Commentary

Session One:

Carl began answering the comments posed at the beginning of the Body Scan (BS). After a few moments into the BS, he asked if I wanted him to answer me out loud. I gave him permission to keep the answers in his head or to speak them out loud. He responded that he would keep his answers to himself. Towards the end of the BS, Carl again responded out loud with a few one word answers. (Verbal Responding seemed to occur naturally in response to the posed questions in the BS).

Pachelbel's Canon (PC):

Some comments after listening to the song the first time included:

- a.) It definitely affects the way I feel.
- b.) When I focused on some sounds, I got a little more excited.
- c.) It raises your level of excitement.

In Session One, PC was played twice. The second time was without commentary.

Carl was interested in knowing ‚how’ to listen to the song. I explained that the beauty of mindfulness as a form of mediation is that there is no right or wrong way to do something. You just try to be aware of the music or the experience in the present moment.

At the end of the second playing, Carl responds with, ‚Awesome. I love how the instruments play off of each other. I tried to listen to one instrument and then another and then how the instruments all played off of each other.’

Conscious Breathing (CB):

The breathing felt good. As I kept doing it, I found which way I liked better. It felt better when I breathe in through my nose, and then I restricted the flow through my mouth. But it felt really relaxed. I wasn't trying to think of any other stuff, but just focus on my breathing. For a while I did think about who I am at this point in my life and what I want to do with the rest of my life.

In response to the Post session questions:

The BS was really different. I don't think I ever did anything like that before. I've done deep breathing before but I've never done the BS. It was different. It was cool. You could also advance upon that. I like how it is. Feel how it is but don't judge. Some things are not good or bad. They are just the way they are. I like that. Don't judge.

Session Two

(Prior to beginning this session, Carl shares a negative verbal interaction with his father concerning a course he wants him to take at the community college. This dialogue lasts about 20 minutes.)

As we began the BS, Carl again does some verbal responding, naturally, to the experience, as he answers the statements in question form.

a.) „It feels better when I breathe in through my nose and out through my mouth.’ Carl also expresses awareness of his body in the context of the larger space.

PC: Kind of loud. Do you think it was kind of loud? The whole music comes together and brings out sensations. (Carl was interested in the type of instruments playing in the piece.) He commented that parts sounded like a violin. It takes away anxiety. And by the way, I am feeling better. (We discuss the benefits of practicing mindfulness and how it helps us leave the past behind us because we cannot change the past.)

CB: It's a way to get away. It calms me down.

BS: Definitely brings my awareness to myself. I'm a bit jumpy today because I had an energy drink today. I was inside all day. I feel like I need to run.

Summary: I would have to say (long pause), it was a healing. Things were rough today....I'm not blaming anybody but things were rough today. It made me feel not so good at times. Now, I'm coming to awareness about myself. It's just me and you and the dog. We got all this positive energy.

Carl has not practiced since our last session but responds that he has tried to be conscious of the things around him. He always tries to be conscious of the things inside himself and outside of himself. He also says that he has tried to listen to music because it calms him. He says that he likes all music, including this classical piece. "I like this piece." (I relate that some therapists use this piece in sessions with anxiety issues.)

(Honey-Honey-Honey story as a way to turn almost anything into a musical rhythm or beat.....Your body wants to be rhythmic.)

Carl tells me about the meditation class he attended with his mother and the teacher's use of the eternal umm to which he was exposed. The eternal um was used as background music at a yoga class. We speak about uniting for a common purpose. Carl wants to share this with me and offers to bring it to the next session. In addition, he relates that his father came in the room yelling at one point before he became aware that the um was playing in the background. We discuss how maybe dad takes his own frustrations out on Carl at times.

We end the session with Carl's re-telling the art vs. an electrical course for next semester.

Session three:

Did you practice mindfulness since our last session? Carl used the deep breathing at work when he found himself feeling stresses. He took three deep breaths (In and Out) and relates that he felt better.

Can you remember what happened just before you felt the anxious feeling? Not really....just my allergies.....I just tried to connect myself to myself.

Carl retells some details about landscaping and time frames for his agenda tomorrow. We talk about physical work for a few more minutes.

(BS): Carl asks if he should close his eyes. (The initial BS sequence does not have this instruction, but it does mention later in the sequence that the participant should close his or her eyes. I add, „Close your eyes’ to the set of comments that make up the BS.) Carl expresses being very relaxed to the point of being able to fall asleep.

(CB): Carl fell asleep after 15 minutes of CB. The experience of tonight’s session was not discussed.

Session Four:

Did you practice mindfulness? Last night, I sat outside with my mom and brother and tried to be mindful of where I was. I tried to close my eyes and listen to what was around me. I listened to the birds.

As we begin the BS, Carl’s younger brother (16 years old) walks in and asks if we want a light on. Carl tells him to “get out of here.”

(PC) When I try to play the song, the electrical socket does not work. Before determining this, a few minutes pass. Carl thinks the CD is not inserted.

We then try the tape player in another socket and proceed.

In response to the music: It was peaceful. The other times, it started out peaceful and remained peaceful. This time, it started out peaceful and then got upbeat. Maybe because we're in a different spot right now. (This session was in Carl's living room but the first three were in the facilitator's office.)

In this session (four), Carl and I discuss the comfort which comes from knowing what to expect. There are no surprises to the mindfulness sequence because we have done it the same way for four sessions now.

(BS): Carl thinks you could expand on the BS. It can be much more than just realizing where you are and try to separate yourself from where you are. Carl thinks it important to forget where you are and open your senses to becoming one with the environment around you. I define the difference between transcendental meditation and the mindfulness meditation that we are doing. Mindfulness meditation tries to help you get in touch with the present moment instead of disappearing into the environment.

Carl is aware of thirst and drinks water near the end of the BS.

Carl discusses some of the activities of young people today, getting lost in technology such as phones and computers.

Session Five:

In response to the question, did you find yourself doing any CB during the week, Carl answers, „Somewhat. I do it at lunch. I try to rejuvenate myself by taking a look around. I try to enjoy the day before I have to go back. It feels good. I try to get in touch with everything around me. I just try to relax.

It's not like what we do here but it's similar. It's still trying to get in touch with everything around you. It's being aware. I could apply the music to my landscaping.

You could look at music as a whole but then you listen to all the musical instruments.

And I could do that outside too when I'm landscaping. I could focus on the outdoors as a whole but then I could focus in on the minute things. I could look at the little bits of mulch, the bugs in the mulch or the petals on the flowers or a blade of grass. So when I'm outside, I kind of get to do all that. This serves as practice and can serve as an analogy for other things in life. I can apply it to my job.

(BS): The BS is what it is. It feels good.

(CB): Sometimes I stop what I'm doing when I'm working and take a few deep breaths. It helps me maintain a rhythm.

(Overall): We speak about becoming a more centered human being. Carl responds, "I would like that."

Session Six:

Carl and his father and I discuss the experiment in the kitchen before beginning. Carl gets visibly agitated by this. He tells me that he is tired of his father trying to analyze everything. Carl begins by cracking his knuckles

(BS): At the end of the BS but before we move onto the song, Carl verbalizes, "I do feel more relaxed." Carl expresses the idea that he feels his fingers more intently. He is also aware of wearing his steel toed work boots tonight.

Carl responds verbally to the questions posed during the BS.

(PC): Carl beats his knees in rhythm to the song. This is the first time he adds this visible drumming to his listening. Carl expresses his thoughts that the music begins to tell a story for him.

(Overall): Since my mind feels clearer after doing this meditation, I thought I'd be able to pick up your wavelength, your signal. (Carl wants to try to read my mind with a card trick. We talk about reading people's feelings and becoming adept at understanding connections between people. Carl talks about spirituality and being in tune with self and others.)

Quotes I share:

My journey is my journey. Your journey is your journey. Sometimes our roads are parallel to each other and sometimes our roads go in different directions. Then the roads sometimes come together.

I share the analogy of the One Body of Christ. You may be the hand and I may be the foot. We are all different parts of one body in Christ, one human family.

(BS): It was good.

(PC): The music kind of took me away tonight, but to a good place.

(Overall): Since there are no words to the music, I've got to make up a story. It's pretty much my life, what will I do, or what was I doing.

Session Seven:

(Since being out last session) I went for a walk in the woods the other day, behind my grand mom's house and I found myself trying to use mindfulness then. I tried to connect myself to the forest and listen to all the sounds. Just staying there, I had a lot going through my head that day. I tried to breathe in and breathe out and bask in the moment. I tried to listen to the birds chirp. The sun was coming through the treetops and there was a little stream. I saw some bugs. And as I walked a little further, I saw a deer looking at me and we were just looking at each other for a little while. It was kind of cool. I moved

a little bit, but then it trotted away. So then I just kind of rounded the forest and went back to my grand mom's house. (Story of losing keys in the park). (AL and Lisa discussing a problem at Lisa's job with her supervisor)

I have wanted to walk in these woods for a long time. It was kind of cool to experience the woods this way and connect with the deer.

(Carl talks about his grandparents' health and grand mom's medicine)

Because of Al and Lisa's heated discussion, I bring up the poem "IF" by Rudyard Kipling. I plan to share it with Carl in a subsequent session. Carl shares the thought that he is thankful for his parents.

(BS): Carl expresses his thoughts about how his fingers are rough. He also answers how his hands are touching his pants. He is aware of aches and pains in his hands and arms.

"This time, my favorite part of the BS was the face. I could picture my face and I kind of separated myself from my body. I could look at myself as different from my body. (I repeat the section of the BS which calls attention the parts of the face.) It was cool, too, that this time I had no shoes on. Every other time I had shoes on We discuss how it was hard not to be a part of the discussion in the kitchen.

Carl is eating skittles during the BS.

(PC): Carl expresses an urge to look at Chloe (their dog) after hearing her bell. I present Carl with the idea of not scratching an itch; rather, trying to resist it. Carl recounts a story about his grandfather being in the marines and being trained not to slap a mosquito on his arm during maneuvers. Carl relates the idea that he understands that you have to make peace with the mosquito. Just notice it and accept it.

Does Carl have premonitory urges? If you have the urge to tic, you can give into it or make peace with it. Carl understands that you can advance upon this discussion. You try to focus your mind on something else or you can make peace with the mosquito. The mosquito or the itch is not going to kill you.

(Carl talks about pain in terms of people who cut themselves. We discuss masochism and sadism, the law, childhood issues and consenting adults). Carl hypothesizes that sadists and masochists have different pain tolerances and react differently to levels of pain.

Carl showed visible eye twitches tonight.

Session Eight:

We could probably do this other places. I would like to do this in a house that we have never been in before. I know this building that we could do it in. That would be cool. Or we could go outside. That would be cool. I try to picture the room I was in from memory. I say, wherever you go, there you are. Carl talks about connecting with the physical world and the other worlds around you. I talk about the ability to connect with the self and Carl mentions that he wants to connect with everything around him. He begins to talk about connecting with other spirits around him. What we are doing is just a small part of life. This is just an intro that could be brought to more extremes. We discuss being open to the energy around us. Carl accepts the fact that there are other worlds around us, but there are people out there who do not accept it or believe it. Carl agrees that some people do not believe or accept this hypothesis. He questions the immediate world around him more than other people do. We speak about how time changes what people believe (African slaves, the Indians, living in nature vs. houses, animal slavery, babies and wisdom).

Carl diverges into a discussion of reincarnation. He believes that he will reincarnate into something that will teach him whatever he still needs to learn to become a pure soul. I speak about generational healing so that each next generation will help heal the next.

(BS): Carl is most aware of the indentations in his fingertips. He also expresses awareness of where the furniture is in response to those questions in the BS.

“I definitely was more relaxed, but now that we are done, I’m wound up.” Carl expresses the thought that he likes feeling energized because he is always tired.

Session Nine:

Carl appears distracted. He tells me he wants to end the session as soon as possible so he can shower and visit a neighbor.

(CB) I tried to stay still and calm myself down. I said to myself, I’m here right now even though I was anxious to get my things done. I sat there and tried not to scratch an itch on my head. It felt like an itch at first, but then I forgot about it.

(I present the itch as an analogy for the tense or anxious feelings that we might experience in a day or a life.)

(BS) Today was the first day I had no shoes on but socks.

(CB) Carl repeats the breathing words after me.

This was our first session that lasted only 40 minutes.

Session Ten:

Carl asks if any of the sessions will „deviate’ from the pattern we are doing. He expresses the idea that the sessions have „gotten kind of slow.’ (BS) Carl begins the session feeling tense. Afterwards, I ask him, „What tenses you?’ He says that he tries to

remain relaxed. Carl dozed a bit during the BS. He says that he was trying to stay awake. He acknowledges that this helps him stay in the moment.

During the BS, he expresses the idea that he is aware of the saliva coating the inside of his mouth.

(CB) Lately, when I had trouble trying to go to sleep, I would just lay there and focus on my breathing. I would focus on my breath and try not to move my body at all. That was pretty cool and I kind of thought about it through doing this.

This is the end of the fourth week and Carl is asked to fill out the third BDI-II. He expresses to me that he doesn't really like filling out these forms. I tell him it's okay, but that they are a measure of the effectiveness of the meditation for the purposes of this study. He agrees to do it anyway. This prompts him to tell me that he has so much going on in his life.

“Things change for the better. You live and learn.”

We also re-visit “If” by Rudyard Kipling in response to the night Carl's parents were having a heated discussion in the kitchen.

Summary: Carl expresses his thought that my voice talking to him relaxes him. “This relaxes me.”

Session Eleven:

Carl calls me at 5:00 P.M. to ask me if we are meditating. According to the protocol, we have moved to once/week in week five. When I arrive, he wants to meditate outdoors on the patio. Some of the words in the BS are changed to accommodate this new space

(PC) Carl expresses the idea that the music is his favorite part tonight. He likes it best because we are meditating outside. Carl expounds on how you could listen to all the

sounds in nature and compares it to the different instruments in the music. I also think that it's good we had our eyes closed because our senses could distract us. We talk about how many of us have one sense that is better than another. Carl and I experiment with listening to the different birds.

He tells me which parts of PC are his favorite parts and I play the song a second time so he could more directly identify the crescendos which he likes. I also repeat the part of the directions which asks that you try to distinguish between the different sounds of the various instruments. Carl likes this reminder of trying to bring attention to the different sounds that each instrument makes.

(BS) "I like this a lot better. There is so much outside. There is the wind, the different feelings on my skin. I like this a lot better."

We end with a discussion of CB and how we live on automatic pilot. Many of us talk on the cell phone and drive the car at the same time. Carl adds that when we are going through some hardship, it is best to go back to our roots, back to where we came from, go back to breathing which connects our mind and our body. This helps us bring ourselves together. I express the idea that meditation is a technique that can bring you back to who you truly are and that Carl does not have to define himself by his OCD/TS or his consequent depression. Our sessions together are training sessions for Carl to bring himself back to the present moment.

At the end of this session, I begin a closure dialogue to remind Carl of our commitment to meditate together for 14 sessions. These sessions together could then serve as a resource for Carl to begin his own meditation practice.

Carl expresses the thought that these sessions are a good start for him. We talk about needing a group to meditate with to maintain the formal practice that we have started together. Carl concurs that he would not have initiated this on his own but is grateful for having had the experience. He compares this with his sometime attendance at this mother's yoga group. This has given him a taste of meditation. We talk about different style of meditation.

(This session serves as good qualitative considerations for Carl's appreciation of the mindfulness techniques.)

(CB) Carl expresses that he likes breathing outside better than inside because it is colder and fresher. He also likes his job in lawn care because he gets to be outside all the time. We end with a discussion of his attendance at the community college and how much longer he would be attending. Carl digresses to a discussion about fireflies and the chemicals which create the light that they emit (chemo luminescence).

Carl's father comes in and has a very positive interaction with his son at the end of our session. Carl had grown his hair long and donated the locks to "Locks of Love." This discussion ensues. Carl eventually joins his family in the living room after a very animated session. I leave out the back door.

Session Twelve:

Carl wants to see his buddy up the street tonight so he wants a short session. He also asks if he has to close his eyes tonight to begin the BS. I remind him that there are no judgments in this process and no one way to do mindfulness activities.

(BS) During the BS, Carl is visibly shaking his leg. He also displays sleepiness, evidenced by head nodding during tonight's session. He also mentions that he was

fighting to stay awake. Carl expresses his thoughts that the various pieces of furniture look like kids to him.

(CB) Again, he was fighting to stay awake.

At the end of our practice, I ask him if he was very relaxed or just sleeping. Carl responds that it was a little of both.

Summary. Carl expresses the idea that his mind was drifting, somewhat like a dream. He admits that it was harder to be in the present moment. We discuss how hard it is to work outdoors in the humid weather we had today. I comment that his difficulty to pay attention could be due to tiredness.

Session Thirteen

We begin the session on Carl's back patio outside. Carl begins by talking about the routine his life is in for the summer. He does landscaping almost every day and is a patient transporter at the local hospital on Thursday and Sunday evenings. He is not thinking about school in the fall. He then shows me a small red maple tree that he planted in a pot because a lady at his last landscaping job wanted to pull it. Carl expresses the idea that he did not want the small tree to die. He plans to transplant it to a larger pot as soon as it seems to be stronger. We talk about planting this tree and the care it might need to survive the next winter cycle.

(BS) Carl expresses the thought that he is very relaxed tonight as we begin the body scan. He rubs his arms as we begin. He also rubs the arms of the outdoor plastic chairs he is sitting in. In his bare feet, he notices that he is touching cement out on the patio. He observes that his face is furry because he has not shaved.

This session is outdoors so a few words are changed at the end of the BS to reflect this new space (i.e. ceiling to sky).

(PC) At the end of PC, Carl expresses his thoughts that he consciously tries to listen to the low sounds of the song, but that it was hard. I offer to play the song a second time and to try to separate the sounds as we listen to PC together. We both have a hard time separating the sounds and Carl acknowledges that his mind drifts into listening to the song as one whole, with the low and high sounds together.

We talk briefly about the way music can affect people differently, especially instrumental music that does not have words to influence the listener.

(The sky has a reddish color to it and Carl notices that, pointing it out to me.)

Tonight, Carl was exhibiting one of his TS tics (arm) during the song. He did not seem to be conscious of it as I observed the jagged jutting forward at chest level. He discussed the song and as he was trying to tell me about separating the low sounds from the others, this arm tic surfaced. It took a few extra seconds, but he was eventually able to tell me that you might miss the whole meaning of the song if you try to take it apart.

(Ending) The facilitator reminds Carl that this is our thirteenth session and is asked if this type of meditation will be something he would continue to do on his own. His response acknowledges the feeling that he enjoys sitting and trying to become conscious of the things that are all around him in the present moment. We look at the tree line view before us and take note of the variations in color that exist. The sky has lost some of its reddish tint and Carl reflects on this change that has occurred in just the past few minutes.

We discuss how summer is a good time to sit back and take stock of your trees. We continue to look at the tree-line and say nothing. This is broken by strong wind. Carl

expresses his idea that he sometimes feels the life in trees. I compare this to the story of Pocahontas and Indians who are in touch with the land, using only what they need to live. This diverges into environmental awareness. We need trees because they give us oxygen and they need us for our carbon dioxide. Carl wonders if trees feel pain. I talk about cutting tree branches and placing black tar over the cut to help the tree heal. Carl shares with me how his landscaping boss taught him to cut branches from trees and/or bushes.

Session Fourteen:

Carl relates that he was down at the beach over the past week and while he was in the water, he did a lot of CB. Just being on the beach was relaxing to him, especially when he was out in the ocean. When I was in the ocean, I looked out on the horizon and took a deep breath in; then I took a deep breath out.

(This session serves as a summary session of the entire experience).

When asked if he had ever known about mindfulness (meditation) techniques before, Carl says that he didn't know about BS before, but he had heard of trying to be more aware sensations in your body.

I kind of knew about deep breathing before and I would do it once in awhile. After doing this with you, I found out that there are many types of meditation. We discuss that the name of the deep breathing we did was called Conscious Breathing. His past experience was called deep breathing and included an awareness of breathing in the good and breathing out the bad. I note that using the words good and bad have a judgment attached to it. I would not encourage the use of judgment words because the bad carbon dioxide we breathe out is really good for the trees.

At the end of the session as he is filling out his fourth BDI-II, Carl reminds me that he has just come off a week's vacation at the shore and feels great. While he has not liked doing this form in the past, tonight's experience is not bothering him as much. I quickly look at his choices which are all at zero. He expresses much happiness at his experience at the shore this week. We discuss vacation vs. meditation. Carl expresses his idea that meditation contributed some because it had to. His view is that all of life's experiences are applied to the way you live, but again that his vacation was great.

I end this discussion with some feedback on Carl's scores on the four administrations of the BDI-II.

We finish with a discussion of the therapeutic purposes of meditation. We then proceed to form a consensus on the pre-selected goals that were created as one gauge of the effectiveness of this protocol. This session serves as an explanatory session of the process. I reiterate what happens from here, how I was measuring the effectiveness of doing mindfulness for someone with early onset OCD/TS, and what the publishing process is like with respect to the pseudonym Carl. As we talk about closure and the effects of therapy, Carl wonders why it is important to maintain progress. I tell him that therapy is usually meant to give someone tools to improve his or her situation. We talk about the effect that early onset OCD/TS has had on Carl's life.

The final comments revolve around a television program that Carl watched. The speaker compares life to a leaf, floating down a stream. The leaf just floats around the rocks and moves in a fluid motion down the stream. (A second metaphor is shared, one that talks about martial arts.)

Post-Intervention Session

Carl was glad to get together again, admitting that he had not been practicing the mindfulness techniques learned during the summer. Since we met last, he has gone to a drumming session. He expresses a desire to try different forms of relaxation therapies. When I first arrived, Carl is cutting wood for the fireplace and he tells me that this kind of physical activity clears his mind. He misses the summer sessions and is struggling with the requirements of academia since he returned to his Fall semester at college. We practice deep breathing for a few moments and Carl expresses gratitude to be reminded of our mindfulness sessions. I encourage him to continue at least conscious breathing on his own as he moves forward with the rest of his semester. Carl fills out the BDI-II for a fifth time and we end our commitment for the purposes of this study.

