

9-2009

The role of motivation to change in the treatment of obsessive-compulsive disorder

Christopher M. Spofford
University of Massachusetts Amherst

Follow this and additional works at: https://scholarworks.umass.edu/open_access_dissertations



Part of the [Clinical Psychology Commons](#)

Recommended Citation

Spofford, Christopher M., "The role of motivation to change in the treatment of obsessive-compulsive disorder" (2009). *Open Access Dissertations*. 132.

https://scholarworks.umass.edu/open_access_dissertations/132

This Open Access Dissertation is brought to you for free and open access by ScholarWorks@UMass Amherst. It has been accepted for inclusion in Open Access Dissertations by an authorized administrator of ScholarWorks@UMass Amherst. For more information, please contact scholarworks@library.umass.edu.

THE ROLE OF MOTIVATION TO CHANGE IN THE TREATMENT OF
OBSESSIVE-COMPULSIVE DISORDER

A Dissertation Presented

By

CHRISTOPHER M. SPOFFORD

Submitted to the Graduate School of the
University of Massachusetts Amherst in partial fulfillment
of the requirements for the degree of

DOCTOR OF PHILOSOPHY

SEPTEMBER 2009

Clinical Psychology

© Copyright by Christopher M. Spofford 2009

All Rights Reserved

THE ROLE OF MOTIVATION TO CHANGE IN THE TREATMENT OF
OBSESSIVE-COMPULSIVE DISORDER

A Dissertation Presented

by

CHRISTOPHER M. SPOFFORD

Approved as to style and content by:

Richard P. Halgin, Chairperson

Michael J. Constantino, Member

Ronnie Janoff-Bulman, Member

Clement A. Seldin, Member

Melinda A. Novak, Department Head
Psychology

ACKNOWLEDGEMENTS

First and foremost, I would like to thank my mentor and committee chair, Richard Halgin. My gratitude to him goes well beyond this project. He has provided me with unwavering support, steadfast guidance, good humor, and an incredible amount of patience throughout my graduate education. His mentorship is a true gift for which I will be forever thankful and I share the accomplishment of this work with him. I would also like to extend my gratitude to my committee members, Michael Constantino, Ronnie Janoff-Bulman, and Clement Seldin for offering their expertise and consultation on this project. I greatly appreciate their kindness, support, and generosity in offering their time. Additionally, I would like to thank JuliAnna Smith for her instrumental assistance in the area of statistics and data analysis. Her expertise and guidance was essential to the completion of this project.

There are many important people I would like to acknowledge for keeping me balanced and focused during the completion of this project. I would like to express my appreciation to my family members, who have not only provided me with unwavering support, but also wisdom and perspective. And to my wife Amber, your love, warmth, and encouragement have been essential ingredients throughout my graduate studies – with you in my life anything feels possible.

Finally, I owe a large debt of gratitude to the patients at McLean Hospital's OCDI who participated in this study. Their courage and strength served as the primary inspiration for my decision to pursue a career in clinical psychology. And their willingness to complete time-consuming measures will undoubtedly further our understanding of how to improve existing OCD treatments.

ABSTRACT

THE ROLE OF MOTIVATION TO CHANGE IN THE TREATMENT OF OBSESSIVE-COMPULSIVE DISORDER

SEPTEMBER 2009

CHRISTOPHER M. SPOFFORD, B.A., UNIVERSITY OF NEW HAMPSHIRE

M.S., UNIVERSITY OF MASSACHUSETTS AMHERST

Ph.D., UNIVERSITY OF MASSACHUSETTS AMHERST

Directed by: Professor Richard P. Halgin

The primary purpose of this study was to examine the role of motivation in the treatment of individuals hospitalized for severe OCD, specifically, the extent to which an individual's motivation for treatment and motivational orientation (intrinsic or extrinsic motivation) predict OCD treatment response. The sample consisted of 142 individuals diagnosed with severe treatment-refractory OCD participating in an intensive treatment program. Patients completed a measure assessing overall motivation and motivational orientation at admission (*TSRQ*), and measures assessing depressive severity (*BDI*) and OCD symptom severity (*Y-BOCS*) at admission and discharge. Hierarchical multiple regression analyses were performed in which admission levels of overall motivation, intrinsic motivation, and extrinsic motivation were examined as predictors of OCD treatment response when controlling for length of treatment and baseline levels of OCD and depressive symptoms. Results indicate that a high initial level of extrinsic motivation was associated with poorer treatment outcome when controlling for other variables. Furthermore, findings suggest intrinsic motivation appears to have an interactive effect

with OCD symptom severity, such that a high level of intrinsic motivation at the outset of treatment may predict positive treatment outcome when OCD symptoms are more severe. Overall initial level of motivation was not found to be a significant predictor of OCD treatment outcome. Treatment implications and suggestions for future research are discussed.

TABLE OF CONTENTS

	Page
ACKNOWLEDGMENTS	iv
ABSTRACT	v
LIST OF TABLES	ix
LIST OF FIGURES	x
CHAPTER	
1. INTRODUCTION	1
Description of OCD	3
Exposure and Response Prevention (ERP)	5
Treatment Motivation.....	6
Self-Determination Theory: Intrinsic and Extrinsic Motivation	9
Motivation, Depression, and OCD	15
Motivation and the Treatment of OCD	17
Why Study Motivation to Change in Individuals with OCD?	21
Research Questions	22
2. METHOD	26
Participants	26
Setting.....	26
Procedure.....	28
Measures.....	29
Data Analyses.....	32
3. RESULTS AND DISCUSSION.....	35
Preliminary Steps	35
Demographic and Descriptive Statistics	36
Bivariate Correlations and Predictors of Outcome Variable.....	40
Research Question One (Q1): Did level of overall motivation predict OCD treatment outcome?	41

Discussion and Interpretation of Results for Question One	44
Research Question Two (Q2): Did level of intrinsic motivation predict OCD treatment outcome?	48
Discussion and Interpretation of Results for Question Two	54
Research Question Three (Q3): Did level of extrinsic motivation predict OCD treatment outcome?	58
Discussion and Interpretation of Results for Question Three	62
Research Question Four (Q4): To what extent did level of motivation predict treatment dropout for patients receiving intensive treatment for obsessive-compulsive disorder?65	
Discussion and Interpretation of Results for Question Four	68
4. CONCLUSIONS, TREATMENT IMPLICATIONS, LIMITATIONS AND FUTURE DIRECTIONS.....	70
Conclusions	70
Treatment Implications	72
Limitations of Study.....	74
Future Directions.....	78
APPENDICES	
A. OCD INSTITUTE ADMISSION DEMOGRAPHIC QUESTIONNAIRE.....	81
B. PARTNERS ETHNICITY QUESTIONNAIRE.....	87
C. YALE-BROWN OBSESSIVE COMPULSIVE SCALE (Y-BOCS).....	88
D. TREATMENT SELF-REGULATION QUESTIONNAIRE (TSRQ).....	94
E. BECK DEPRESSION INVENTORY (BDI)	96
REFERENCES	99

LIST OF TABLES

Table	Page
1. Patients' Demographic Characteristics: Gender, Age, Ethnicity, Education, Employment and Marital Status.....	37
2. Demographic Data Related to Mental Illness	38
3. Descriptive Statistics for Predictor and Outcome Variables.....	39
4. Correlations for Predictor and Outcome Variables.....	41
5. Summary of Hierarchical Multiple Regression Analysis for Level of Overall Motivation for Treatment and Control Variables Predicting OCD Treatment Outcome ..	47
6. Summary of Hierarchical Multiple Regression Analysis for Level of Intrinsic Motivation for Treatment and Control Variables Predicting OCD Treatment Outcome ..	52
7. Summary of Hierarchical Multiple Regression Analysis for Level of Extrinsic Motivation for Treatment and Control Variables Predicting OCD Treatment Outcome ..	61
8. Descriptive Data for Non-Completing Participants	67

LIST OF FIGURES

Figure	Page
1. Interaction Between Level of Intrinsic Motivation and Initial OCD Symptom Severity Predicting Treatment Outcome	54

CHAPTER 1

INTRODUCTION

The psychological treatment of obsessive-compulsive disorder (OCD) has emerged as a story of relative success within the field of mental health. Prior to the 1970s, the prognosis for individuals suffering from OCD was considered poor. The consensus among clinicians was that OCD was an unmanageable condition with an unrelenting course that was largely unresponsive to treatment (Abramowitz, 2006). This bleak prognosis has changed drastically over the past two decades. The development and application of effective cognitive-behavioral interventions, specifically exposure and response prevention (ERP), has led to much higher rates of treatment success and positive outcomes in the management of OCD. ERP is now widely recognized as the “gold standard” for effective OCD treatment and is supported by a considerable amount of empirical outcome research (e.g., Franklin, Abramowitz, Kozak, Levitt, & Foa, 2000).

The efficacy of ERP for OCD has been well documented (e.g., Abramowitz, 1998), with response rates ranging from 63% (Stanley & Turner, 1995) to 90% (Abramowitz, 1997) for individuals who undergo a full course of treatment. However, despite the effectiveness of ERP, many OCD sufferers have not benefited from ERP treatment. Researchers estimate that among those who comply with ERP treatment 10% or more do not respond (Vogel, Bjarn, Stiles, & Gotestam, 2006). Moreover, because of the demanding and difficult nature of the treatment, many individuals refuse to participate in such an intervention. Refusal rates, in which OCD sufferers turn down available ERP treatment, are generally estimated at approximately 25-30% (Franklin &

Foa, 1998; Kozak, Liebowitz, & Foa, 2000). In addition, among those individuals who begin ERP, many demonstrate poor compliance to the prescribed therapy, which is a predictor of overall poor response (Araujo, Ito, & Marks, 1996; Fama & Wilhelm, 2005). Furthermore, many patients drop out of treatment altogether, with estimates as high as 40% (Kozak et al., 2000).

Despite the evidence of treatment resistance and refractoriness for OCD, little research has been conducted to identify the correlates of treatment non-response and dropout. Much of the research on this topic has focused on identifying sub-types of individuals with OCD who are less responsive to behavioral interventions (e.g., Alonso et al., 2001; Ball, Baer & Otto, 1996; Mataix-Cols, Marks, Greist, Kobak & Baer, 2002). Individuals with certain primary symptom presentations have been identified as less amenable to ERP treatment including compulsive hoarding (Abramowitz, Franklin, Schwartz, & Furr, 2003) and symptoms involving sexual/religious obsessions (Mataix-Cols et al., 2002). This information is useful given that OCD is a heterogeneous condition; however, other correlates that are recognized as predictors of success in other forms of therapy and for other conditions have yet to be examined in the treatment of OCD. The role of motivation for treatment as a correlate has not yet been explored. The paucity of research on the relationship between motivation and ERP treatment is surprising given the demanding nature of this type of therapy.

The goal of this study is to examine the relationship between motivation for treatment and OCD treatment response in individuals receiving intensive residential treatment for treatment-refractory OCD. The hope is that the exploration of this relationship will lead to empirically based knowledge that will inform future treatments.

More specifically, by investigating the role of motivation in OCD treatment response we may uncover knowledge leading to more effective therapeutic techniques for treating individuals who do not respond to conventional OCD treatments. In the following sections, I introduce the diagnosis of OCD and describe conventional therapies generally associated with this disorder. Then I discuss the concept of motivation and the role it plays in the process of therapy and behavior change, including a brief consideration of Deci and Ryan's (1985) Self-Determination Theory (SDT) and how this theoretical perspective informs current conceptualizations of OCD treatment response. Finally, I enumerate the four research questions used in the present project to study the role of motivation in OCD treatment response.

Description of OCD

Obsessive-Compulsive Disorder is defined in the *DSM-IV-TR* as an anxiety disorder characterized by the presence of obsessions and/or compulsions (American Psychiatric Association, 2000). OCD is estimated to occur in about 2.5% of the population, and it is the fourth most common psychological disorder after depression, substance abuse, and phobias (Narrow, Rae, Robins, & Regier, 2002). For individuals who do not participate in treatment, the lifetime course of OCD is chronic and deteriorating, with symptoms waxing and waning as a function of general life stress (Abramowitz, 2006).

Obsessions are persistent and intrusive thoughts, ideas, impulses, or doubts that cause the individual considerable distress and anxiety. Obsessions are highly specific to the individual; however, researchers have identified some common themes including

aggression and violence, over-concern with causing harm to others, sex, religion, need for symmetry or completeness, and anxiety regarding serious illnesses (Abramowitz, Franklin, Schwartz, & Furr, 2003). Although most individuals with OCD experience several types of obsessional thoughts, some focus on a particular fear such as contracting AIDS which preoccupies their day-to-day thinking.

Compulsions are the urges to perform behavioral or mental rituals aimed at reducing the discomfort, anxiety, or doubt brought on by obsessive thoughts.

Compulsions tend to be deliberate, yet senseless and excessive with respect to the fear or discomfort which they are intended to neutralize. Similar to obsessions, compulsions tend to be idiosyncratic. Some common compulsive behaviors include repetitive and excessive hand washing, checking (e.g., locks, stoves, electrical devices, etc.), counting, excessive prayer, and repetitive uttering of phrases to neutralize fears or doubt.

Treatment for OCD often targets these compulsions in an attempt to limit the amount that they are relied upon to reduce the individual's level of anxiety.

OCD is unique among the emotional disorders in that the form and content of its symptoms are idiosyncratic and can vary widely from one individual to the next. In fact, two individuals with OCD may present with completely non-overlapping symptoms. Such heterogeneity in symptom presentation necessitates a thorough topography of the patient's symptoms: the types of obsessions and compulsions that are present and the severity of these symptoms (Abramowitz, 2006). To establish a diagnosis of OCD, structured and semi-structured interviews along with self-report instruments are frequently used. One common instrument used to assess the presence and severity of

OCD symptoms is the *Yale-Brown Obsessive Compulsive Scale* or *Y-BOCS* (Goodman, Price, Rasmussen, Mazure, Delgado et al., 1989).

Exposure and Response Prevention (ERP)

Cognitive-behavioral therapy involving exposure and response prevention techniques is now considered to be the gold standard of treatment for OCD (Abramowitz, 2006). The aim of ERP is to allow individuals with OCD to experience repeated situations in which they are confronted with fearful stimuli that trigger obsessions and distress (exposure), while refraining from engaging in rituals or behaviors normally used to decrease this distress (response prevention). ERP treatment is based on basic behavioral learning principles of *extinction* and *habituation*, largely pioneered by Meyer and associates (Meyer, 1966; Meyer & Levy, 1973), in which fears and anxiety tend to lessen and extinguish after repeated exposure to a stimulus. This experience is akin to someone learning to dive into deep water in a swimming pool. At first, the act is aversive and anxiety provoking; however, after repeated exposure and attempts, the individual gains mastery and the act provokes less fear and anxiety.

The exposure portion of ERP therapy can occur in one of two ways. The individual with OCD can be encouraged to confront the fearful stimuli in low-risk situations (in vivo exposure) or the individual can be encouraged to imagine situations that are aversive and fearful (imaginal exposure). For example, a man who is fearful that he may have hit someone with his car may engage in the ritual of repeatedly checking in his rearview mirror and stopping his car after driving over crosswalks. This individual may go as far as to avoid more direct car routes and instead take alternate routes that have

a lower incidence of crosswalks. A therapist employing ERP techniques to treat this individual might encourage the man to drive the more direct route and experience the anxiety that accompanies this behavior.

The response prevention portion of ERP treatment is equally important to the overall success of OCD treatment due to the fact that, if the individual is allowed to perform rituals during the exposure session, then the learning experience is short-circuited. More specifically, the goal of ERP is to help the client realize that feared situations in which they obsess over are often not truly as dangerous as they believe, and that anxiety can subside on its own without the help of compulsive rituals or avoidance. For example, if the man who is fearful of hitting someone with his car while driving over crosswalks is allowed to stop the car and check after driving over crosswalks, then he would not experience the full brunt of the anxiety that is associated with continued driving. In this respect, the client would continue to use this compulsive behavior as an “emotional crutch” to decrease anxiety. Therefore, a therapist working with this individual may encourage or “coach” the client during ERP sessions to resist the urge to pull over the car and compulsively check the street. Thus, successful ERP requires the client to remain in an exposure situation until the obsessional distress decreases on its own, without the client attempting to reduce the distress by withdrawing from the situation or performing compulsive rituals or neutralizing behaviors.

Treatment Motivation

Although there is ample evidence supporting the effectiveness of cognitive-behavioral therapy in treating people with OCD, there is still substantial evidence that

many people with OCD do not benefit fully from this intervention. For example, a sizable percentage of patients fail to comply with their therapeutic regimen, drop out of treatment prematurely, or encounter difficulty in maintaining therapeutic gains (Vogel et al., 2006). The study of motivation is an area of psychology that has particular relevance to the issues of dropout, compliance, and maintenance of change. In fact, lack of motivation is one of the most frequently cited reasons for patient dropout, failure to comply, frequency of relapse, and other negative treatment outcomes for a variety of psychotherapeutic interventions (Pelletier, Tuson, Haddad, 1997; Ryan, Plant, & O'Malley, 1995).

It has been well established that a client's motivation level is a pivotal factor in psychological treatment (Drieschner, Lammers, van der Staak, 2004). As Krause (1966), one of the first researchers to explore this topic, stated, "Because the psychotherapy patient, the counseling patient, or the casework client does not merely receive treatment but must actively participate in it, his motivation to participate is a vital factor in the outcome of treatment" (p. 9). The importance of treatment motivation is reflected in the growing interest and attention from the field of psychology over the past 25 years. Authors of numerous empirical studies and theoretical articles have examined the relationship between treatment outcome and motivation. For the most part, the bulk of this literature has focused on treatment of substance abuse and addiction (e.g., Erickson, Stevens, McKnight, & Figueredo, 1995; Gerdner & Holmberg, 2000; Miller & Rollnick, 2002; Ryan et al., 1995). There has also been some research conducted on treatment motivation as it relates to other psychological difficulties including individuals suffering from eating disorders (Feld, Wooside, Kaplan, Olmsted, & Carter, 2001; Geller, 2002;

Touyz, Thornton, Rieger, George, Beumont, 2003; Vansteenkiste, Soenens, Vandereycken, 2005), and sexual offenders (Tierney & McCabe, 2001, 2002; Vanhoeck, 2001). Furthermore, a tremendous amount of research and theory has focused on the importance of matching treatment interventions to the client's level of motivation (e.g., DiClemente, 1999; Miller & Rollnick, 1991; Prochaska, DiClemente, & Norcross, 1992; Prochaska & Norcross, 2002).

Despite the growing interest in motivation as it pertains to treatment outcome, *motivation* continues to remain an ambiguous concept (Drieschner et al., 2004).

Historically, the phrase *treatment motivation* has been used in a number of contexts in the psychological literature. For individuals who have not yet entered therapy, *treatment motivation* may refer to preliminary treatment-related behaviors such as the act of seeking or entering treatment. However, for individuals who are already participating in therapy, *treatment motivation* may refer to the client's level of engagement and compliance with the prescribed therapy. Some researchers on this topic use the former definition (e.g., Gerdner & Holmberg, 2000; Pelletier, Tuson, Haddad, 1997) while other researchers use the latter (e.g., Isenhardt, 1994). Miller and Rollnick (1991), two leading researchers in the field, define motivation as "the probability that a person will enter into, continue, and adhere to a specific change strategy" (p. 19). For the purpose of this study, Miller and Rollnick's definition of motivation (i.e., initiating and adhering to a change strategy) was used when subsequently referring to the patient's *motivation for treatment*.

Self-Determination Theory: Intrinsic and Extrinsic Motivation

One theoretical perspective on motivation that has received considerable attention from researchers over the last two decades is self-determination theory (SDT) proposed by Deci & Ryan (1985). SDT focuses on the quality or nature of the motivation guiding behavior. Deci and Ryan first proposed SDT in 1985; since that time this theory has undergone considerable investigation and development with numerous empirical studies providing support for the theory. SDT may contribute to an understanding of psychotherapy effectiveness for the following reasons. First, SDT distinguishes between different subtypes of motivation, or motivational orientations, which impact the maintenance and integration of therapeutic change. Second, SDT presents clear hypotheses regarding the therapeutic conditions that can hinder or facilitate a client's motivation to change. Third, SDT outlines specific consequences (i.e., cognitive, affective, and behavioral) associated with different types of motivation. Fourth, SDT addresses the issue of internalization, the process in which therapeutic changes that are reinforced by external sources (e.g., the therapist) become integrated into the individual and become a part of his or her thoughts, beliefs, and self-schema (Pelletier et al., 1997).

When Deci & Ryan (1985) developed SDT, they proposed three basic types of motivation which regulate behavior: *intrinsic motivation*, *extrinsic motivation*, and *amotivation*. Over the course of the past 30 years, Deci and Ryan have elaborated on these concepts. People engage in intrinsically motivated behaviors purely for the satisfaction derived from their performance, such that behaviors are performed voluntarily and in the absence of any material rewards or external constraints. For example, a socially phobic woman who decides independently to enter therapy to gain

mastery over her fear of speaking in public is exhibiting intrinsic motivation. With intrinsic motivation, the assumption is that the individual's actions are fully autonomous, self-determined and self-initiated (Ryan & Deci, 2000). In the realm of social psychology and attribution theory, theorists relate the concept of intrinsic motivation to the attributions people make regarding their perceived *locus of causality* (Ryan & Deci, 2000). Perceived *locus of causality* refers to the degree to which people experience their behavior as self-initiated or self-chosen rather than pressured or coerced by external forces. Therefore, an individual who experiences a more *internal locus of causality* would be expected to be more intrinsically motivated contingent on the context of the situation (Vansteenkiste et al., 2005)

The relationship between intrinsic motivation and positive outcomes has been well documented in a number of research domains including education, sports, employment, and health (see Deci & Ryan, 2002; Deci & Vansteenkiste, 2003; Ryan & Deci, 2000). For example, studies have demonstrated that a higher level of intrinsic motivation is associated with more positive outcomes in health domains including adherence to smoking cessation programs (Williams et al., 2006) and adherence to dietary guidelines for individuals diagnosed with diabetes (Senecal, Nouen, & White, 2000).

Several psychotherapy researchers also emphasize the importance of intrinsic motivation. Miller and Rollnick (1991) developed Motivational Interviewing (MI), a commonly used therapeutic approach for treating people with substance abuse problems. Clinicians using MI focus the intervention on the process of promoting intrinsic motivation. Miller and Rollnick (2002) describe the MI intervention as “a client-

centered, directive method for enhancing intrinsic motivation to change by exploring and resolving ambivalence” (p. 25). MI uses a cluster of principles and therapeutic techniques to increase intrinsic motivation in patients, including techniques such as taking a non-judgmental stance, expressing empathy, exploring ambivalence fully, developing discrepancy, avoiding confrontation, and supporting self-efficacy (Miller, Rollnick, & Conforti, 2002). Similarly, in developing the Transtheoretical Model of Change (TMC), Prochaska and DiClemente (1982) placed emphasis on identifying the individual’s internal (or intrinsic) versus external (or extrinsic) motivations in order to assess stage of change and readiness for change. According to DiClemente (1999), clinicians can help patients reach higher stages of change and increase treatment readiness by helping them increase their internal versus their external motivations to change. Both MI and TMC have had lasting impact on the field of psychotherapy and have become influential theories in various health-related domains (Hettema, Steele & Miller, 2005; Prochaska & Norcross, 2002).

Given the established relationship between intrinsic motivation and positive outcomes in a number of health domains including psychotherapy (Deci & Vansteenkiste, 2003; Pelletier, Tuson, Haddad, 1997), one would expect that this relationship might also exist in the treatment of OCD; namely, individuals who exhibit a higher level of intrinsic motivation would have better treatment outcomes in intensive treatment for OCD. Furthermore, given that ERP, the conventional therapy for OCD, involves continuously confronting aversive stimuli that cause the patient distress, one would expect that intrinsic motivation would be an essential component to compliance and treatment success.

Although *extrinsic motivation* has also been viewed in the literature as a factor in treatment outcome, its role in the outcome process is complex. In contrast to intrinsic motivation, *extrinsic motivation* is a process by which one is motivated by external factors. Deci and Ryan (1985) identified four subtypes of extrinsic motivation, which they classified along a continuum from less self-determined to more self-determined. These four subtypes of extrinsic motivation from lowest to highest level of self-determination are: external regulation, introjected regulation, identified regulation, and integrated regulation.

External regulation refers to behaviors that are controlled by external forces such as material rewards or constraints placed on someone. In other words, the individual does not perform the behavior for its own sake, but rather performs the behavior to receive a reward or avoid punishment (Deci & Ryan, 1985). For example, a client who enters therapy for OCD because his wife has given him an ultimatum to either deal with his OCD symptoms or she will file for divorce is considered to be motivated by external regulation. Another example of external regulation might be a man who engages in compulsive hoarding, and enters therapy after his boss has mandated that he de-clutter his workspace or face termination.

Introjected regulation is a form of extrinsic motivation with a slightly different mechanism. With introjected motivation, the formerly external source of motivation has been internalized such that its actual presence is no longer needed to initiate or maintain a behavior. Instead, behaviors are reinforced through external pressures and emotions such as guilt, anxiety, and responsibility to others. An example of introjected regulation would be a mother who enters treatment for OCD because she feels tremendous guilt about

inadvertently modeling her irrational behavior to her young child. Another example would be a man who enters OCD treatment because he feels his symptoms have caused him to be an ineffective husband and father. In both instances, the behavior is thought to be extrinsically motivated because of internal pressures such as feelings of shame and guilt. Although these emotions arise within the person, these motivational forces are thought to remain external to the person's self, because the person may not fully and freely endorse them (Deci & Ryan, 1995). Therefore, in the abovementioned example, the man seeking therapy for his OCD might not fully "own" the intention to change and may make statements such as, "I am getting treatment so that this doesn't affect my children anymore;" or "My wife has put up with my OCD for too long."

Identified regulation is a behavior that is performed because it is congruent with a person's values or goals (Deci & Ryan, 1985). For example, a woman may seek therapy for OCD because she believes that she is failing to perform up to the level of others in the workplace or the expectations of her boss. In this example, the treatment is still sought for extrinsic reasons (e.g., to achieve expectations); however, it is more internally and self-determined than the previous two forms of extrinsic motivation mentioned.

Integrated regulation refers to behaviors that are performed not only because the individual values their significance but also because it is now consistent with some of the individual's self-schemas and identity. This type of motivation is the most fully self-determined type of extrinsic motivation. An example of a statement from an individual with this motivational orientation might be: "I entered treatment for OCD because I wanted to save my marriage and become a better father, but now I feel that it is important to take care of one's mental health at all times." This statement reveals that, although this

individual's behavior was initially less self-determined, he has now identified with the self-schema of maintaining his psychological health. On the continuum of extrinsic motivation, integrated regulation would be the form of extrinsic motivation considered most similar to intrinsic motivation.

Deci and Ryan (2002) also discuss the construct of *amotivation*. Whereas the concepts of extrinsic motivation and intrinsic motivation describe the quality of motivation, amotivation refers to the phenomenon in which individuals do not perceive a relationship between their actions and the outcomes that follow their actions. This phenomenon is exemplified by someone engaging in an activity with no understanding as to why, or without any sense of real purpose (Pelletier, Tuson, & Haddad, 1997). For example, a man may enter OCD treatment believing that his situation is hopeless and that therapy will undoubtedly prove to be a waste of time and energy. As with extrinsic motivation, researchers have demonstrated that amotivation is associated with poor treatment outcomes including higher rates of dropout and non-compliance (Long, Williams, Midgely, & Hollin, 2000; Pelletier, Tuson, & Haddad, 1997; Senecal et al., 2000).

Deci and Ryan (1985) proposed that motivation is a dynamic concept. Other researchers on motivation have also endorsed this idea (Miller & Rollnick, 2002; Prochaska and DiClemente, 1992). In other words, patients entering therapy may start out with one motivational orientation and move to another type of motivation as the therapy progresses. Miller and Rollnick's (2002) Motivational Interviewing techniques are based on the idea that therapeutic change occurs by "enhancing intrinsic motivation by exploring and resolving ambivalence" (p. 25). Other theorists have taken a slightly

different approach in describing the mechanisms of motivation and change in therapy. Vansteenkiste & Sheldon (2006) postulate that it is unlikely that MI enhances intrinsic motivation, as few patients are intrinsically motivated to begin therapy. Instead, they propose that therapeutic techniques promote a greater identified or integrated motivation for change. From this perspective, therapy is not about enhancing the individual's intrinsic motivation to change, but rather it is about enhancing the client's internalization and identification with the extrinsic change intentions. For example, a client may start OCD treatment at the urging of his wife with the purpose of saving their marriage; however, as the therapy progresses his motivation may shift to a more internalized and self-identified orientation. Although he may have previously regarded treatment as a way to save his marriage, now he may think of therapy as a way to improve his mental health and feel better about himself. This motivational shift may also improve the treatment process, in that the client now approaches therapeutic tasks with a sense of self-endorsement rather than with a sense of pressure or resistance.

Motivation, Depression, and OCD

Individuals suffering from OCD comprise a heterogeneous group. Research has demonstrated that OCD is frequently co-morbid with a variety of Axis I and Axis II psychological disorders, particularly mood and anxiety disorders (e.g., Steketee, Eisen, Dyck, Warshaw, & Rasmussen, 1999; Steketee, Henninger, & Pollard, 2000). At least one-third of individuals with OCD also present with major depression, and many more have clinically significant depressive symptoms (e.g., Rasmussen & Eisen, 1998; Steketee, Chambless, & Tran, 2001). This co-morbidity is significant given that it may

influence the patient's ability to engage in and complete behavioral treatment. In general, studies have demonstrated that patients with multiple, co-morbid conditions present a pattern that is more severe and more difficult to treat than "pure presentations" of disorders (Abramowitz & Foa, 2000; Mineka, Watson, & Clark, 1998; Steketee, Chambless, & Tran, 2000). In fact, the common occurrence of co-morbid depression with OCD presentations has led some researchers to advocate for more comprehensive assessment of depressive symptom severity with tools such as the *Beck Depression Inventory* or *BDI* (Abramowitz, 2006).

The issue of co-morbidity becomes particularly relevant when considering the effects of depression on levels of motivation for OCD treatment. Anhedonia and low levels of motivation have been well documented in the literature regarding depression. Individuals with major depression commonly exhibit symptoms of loss of interest, loss of energy, and loss of motivation (Clark and Watson, 1991; Watson and Clark, 1995). Clinically, such symptoms could interfere with ERP treatment for OCD, particularly given the fact that this treatment requires the difficult task in which patients must face aversive and fear provoking stimuli. For instance, a patient presenting with significant depression may be less hopeful that treatment will be effective and thus be less motivated to comply with the therapist's recommendations. Likewise, the anergia and fatigue associated with depression may impede therapeutic progress despite the best intentions of the patient and therapist (Carmin, Wiegartz, & Wu, 2005). Given the relevance of depressive symptoms to motivation, this study investigated and evaluated the role of depression as it relates to motivation for OCD treatment.

Motivation and the Treatment of OCD

Although most clinicians and researchers recognize the importance of motivation in determining treatment outcome, few empirical studies have examined the role that motivation plays in the OCD treatment process. Initial studies examining the relationship between motivation and treatment outcome for anxiety disorders involved trials with psychotropic medication. Studies investigating treatment response to benzodiazepine medication for panic disorder (Bietman et al., 1994), and generalized anxiety disorder (Wilson, Bell-Dolan, & Bietman, 1997) were the first to examine the role of motivation and readiness to change in anxiety-related disorders. Both these medication studies found that pre-treatment stage of readiness to change was a significant predictor of anxiety reduction, with patients at the pre-action stage of readiness (i.e., those exhibiting less motivation for change) experiencing the least amount of reduction in anxiety symptoms with medication treatment. These preliminary studies on the role of motivation in the treatment of anxiety have led some researchers to advocate motivational enhancement techniques aimed at maximizing efficacy for other empirically supported psychotherapeutic interventions (e.g., Foa, 2000; Miller & Rollnick, 2002; Prochaska, 2000).

Based on the assumption that motivation must play an integral role in successful treatment of anxiety and depression, some clinical researchers have begun to explore the effects of augmenting traditional CBT treatment with Motivational Interviewing techniques (Arkowitz & Westra, 2004; Westra, 2004; Westra & Phoenix, 2003). These initial case studies have reported on the implementation of motivational enhancement techniques with patients who have not responded to traditional CBT treatment. These

case-based alternative interventions were conceptualized using the Stages of Change Model (Prochaska, 2000), in which interventions were matched to the client's specific level of readiness to change.

Westra and Phoenix (2003) demonstrated the effectiveness of MI as an augmentation to conventional CBT treatment for anxiety. They presented two cases, one of a woman with diagnoses of severe panic disorder and generalized anxiety disorder and the other case involving a man with severe social phobia. In both cases, the patients presented with significant resistance to change and exhibited limited response to initial ERP treatments. Therefore, the treating therapist shifted the focus of therapy to a therapeutic stance which incorporated MI and motivation enhancement techniques. The case formulation, course of therapy, and method of intervention were detailed in this article to illustrate the motivation enhancement techniques used by the therapist. The findings from these initial case studies were mixed, with one individual benefiting substantially from the motivational enhancement augmentation as evidenced by a reduction in anxiety symptom severity, while the other individual experienced significantly less positive response to the MI techniques (Westra and Phoenix, 2003). These case studies represented the first attempts at exploring the value of motivational enhancing techniques in augmenting traditional CBT treatment of people with anxiety-related disorders. Other case studies have demonstrated positive outcomes when augmenting CBT with MI techniques for the treatment of anxiety disorders (Arkowitz & Westra, 2004; Westra, 2004); however, much more research is needed.

Other than the few medication trials, there have been few controlled studies involving randomized controlled designs to explore the role of motivation in anxiety

treatment. To date, much of the preliminary research investigating motivation and its role in psychotherapy for anxiety-related disorders has come in the form of case-based studies (Arkowitz & Westra, 2004; Westra & Phoenix, 2003). Moreover, the few studies investigating motivation have focused on examining the efficacy of augmenting conventional anxiety treatments with MI.

Westra and Dozois (2006) conducted a randomized pilot study of MI for anxiety. In this study, prior to participating in group cognitive-behavioral therapy, 55 individuals with a principal anxiety diagnosis (45% panic disorder, 31% social phobia, and 24% generalized anxiety disorder) were randomly assigned to receive either three pretreatment sessions of MI adapted for anxiety or no pretreatment (NPT). Participants in the MI pretreatment group demonstrated greater CBT homework compliance and reported more control over their anxiety symptoms at the conclusion of treatment as compared to participants in the NPT group. Furthermore, although participants in both groups experienced some level of improvement in anxiety symptomatology, the MI pretreatment group had a significantly higher amount of individuals who were considered CBT responders at the conclusion of treatment compared to the group that did not receive MI pretreatment (Westra & Dozois, 2006). The results of this pilot research provide some evidence that MI may enhance motivation and overall outcome when used to augment CBT.

Maltby and Tolin (2005) examined the effects of MI for OCD patients who had initially refused treatment. In this study, 12 patients who expressed ambivalence about ERP treatment for OCD were randomly assigned to one of two conditions, a readiness intervention group (RI) or a waitlist group (WL). Patients in the treatment condition

were offered a 4-session readiness intervention (RI) which was designed to increase readiness to change, provide information needed to inform decision-making, and decrease fears of the ERP treatment. More specifically, participants in the RI group received four sessions with a therapist who employed motivational interviewing techniques as put forth by Miller & Rollnick (2002). Prior to the intervention, the investigator made it clear to patients that no ERP techniques would be employed during the four sessions, and that subsequent participation in treatment following the RI would be entirely their decision. Furthermore, innovative techniques were used such as having the client watch a videotape of an ERP session, encouraging the client to have a phone conversation with an individual who had undergone this form of treatment, or having the patients create a sample hierarchical list of fears they might address if they were to enter ERP treatment. Results of this study indicated a significant beneficial impact for participants in the RI group as compared to the waitlist condition, with 86% of individuals in the RI condition and 20% of those in the waitlist condition agreeing to enter treatment after the 4-week period (Maltby and Tolin, 2005). This finding has implications for the frequent monitoring of motivation level for this particular subset of OCD sufferers, and provides evidence in support of the value of readiness interventions for individuals who are less motivated and more ambivalent regarding action-oriented therapies such as ERP. However, outcome in this study was measured solely on the qualitative criterion of whether or not the participant committed to ERP treatment. The investigators did not make quantitative ratings of motivation level or motivational orientation (intrinsic or extrinsic motivation). Nevertheless, to date, this is the only study that has empirically examined the concept of motivation or readiness-to-change as it relates to OCD.

These few initial investigations have focused exclusively on the application of MI for anxiety-related issues. No studies to date have investigated levels of motivation for treatment or motivational orientation (intrinsic or extrinsic) as predictors of treatment response for anxiety. Furthermore, no study to date has investigated the change in motivation for treatment over time.

Why Study Motivation to Change in Individuals with OCD?

A substantial gap in the literature exists regarding the relationship between motivation for treatment and OCD treatment outcome. Researchers and clinicians have repeatedly emphasized the importance of treatment motivation in determining successful outcomes, and they point toward a lack of motivation for treatment as a main cause for dropout, resistance, non-compliance, and non-response (e.g., Foa, 2000). Recently, researchers have undertaken treatment studies based on the assumption that motivation plays an important role in treatment response, and they have designed interventions to increase readiness to change and motivation (e.g., Maltby and Tolin, 2005). However, no research to date has specifically explored the relationship between motivation for treatment and response to OCD treatment. More research is needed to explore the extent to which motivation for treatment is indeed a significant predictor of treatment response. In conjunction with present efforts to design interventions to increase motivation, more research is needed to uncover the general mechanisms and pattern of change in motivation throughout treatment for OCD.

Research Questions:

This study is the first to investigate the role of motivation as it relates to the effectiveness of treatment for obsessive-compulsive disorder. Moreover, the majority of psychotherapy research has examined the role of motivation for treatment as a unitary construct or in terms of stages of change. This research approach expanded the view of motivation for treatment to include the often overlooked categories of intrinsic and extrinsic motivation. Researchers have begun to explore the value of augmenting proven therapies for anxiety with motivational enhancement interventions and enhancement techniques (Maltby & Tolin, 2005; Westra & Phoenix, 2003; Westra & Dozois, 2006); however, these researchers have designed these studies with the assumption that motivation plays a key role in influencing treatment response. Based on studies in other health domains, this may well be true. Nevertheless, no studies to date have explored the specific role motivation plays in OCD treatment response. Furthermore, no studies to date have investigated the general pattern of change in motivation for treatment of OCD over time.

This study addressed the following research questions and hypotheses regarding the role of motivation in the treatment of people with OCD. For the content of questions and hypotheses, below is a list of each construct and the operationalized measure of that construct:

- 1) Total level of motivation: Total score on the *Treatment Self Regulation Questionnaire (TSRQ)*.
- 2) Level of intrinsic motivation: Score on the intrinsic subscale of the *TSRQ*.
- 3) Level of extrinsic motivation: Score on the extrinsic subscale of the *TSRQ*.

- 4) Level of OCD symptomatology: Score on the *Yale-Brown Obsessive Compulsive Scale (Y-BOCS)*.
- 5) Level of depressive symptomatology: Score on the *Beck Depression Inventory (BDI)*.
- 6) OCD Treatment outcome: Score on the *Y-BOCS* at discharge.
- 7) Treatment dropout: Leaving the OCDI within two weeks following admission.

Research Question One (Q1). **To what extent did initial overall level of motivation for treatment predict treatment outcome for patients receiving intensive cognitive-behavioral therapy for obsessive-compulsive disorder in a residential treatment setting?**

Directional Hypotheses:

- b) The initial level of motivation for treatment would be negatively correlated with OCD symptom severity at discharge. Namely, higher motivation at admission would be correlated with lower symptom severity at discharge.
- c) The initial level of motivation for treatment would predict treatment outcome when controlling for the length of treatment, baseline levels of OCD symptoms, and baseline levels of depressive symptoms.

Research Question Two (Q2). **To what extent did initial level of intrinsic motivation predict treatment outcome for patients receiving intensive cognitive-behavioral therapy for obsessive-compulsive disorder in a residential treatment setting?**

Directional Hypotheses for Intrinsic Motivation:

- a) The initial level of intrinsic motivation for treatment would be negatively correlated with OCD symptom severity scores at discharge. Namely, higher level of intrinsic motivation at admission would be correlated with lower symptom severity at discharge.
- b) The initial level of intrinsic motivation would predict treatment outcome when controlling for length of treatment, baseline level of OCD symptoms, and baseline level of depressive symptoms.

Research Question Three (Q3). **To what extent did initial level of extrinsic motivation predict treatment outcome for patients receiving intensive cognitive-behavioral therapy for obsessive-compulsive disorder in a residential treatment setting?**

Given that this was the first study of the relationship between extrinsic motivation and OCD treatment outcome, exploratory analyses were conducted to determine the extent to which extrinsic motivation level predicted treatment outcome.

Exploratory Question regarding Extrinsic Motivation

- a) To what extent is treatment outcome correlated with level of extrinsic motivation for OCD treatment?
- b) To what extent was treatment outcome predicted by initial level of extrinsic motivation for treatment when controlling for length of treatment, baseline level of OCD symptoms, and baseline level of depressive symptoms?

Research Question Four (Q4). **To what extent did level of motivation predict treatment dropout for patients receiving intensive cognitive-behavioral treatment for obsessive-compulsive disorder in a residential treatment setting?**

Exploratory Questions:

- a) To what extent was treatment dropout predicted by initial level of overall motivation for OCD treatment?
- b) To what extent was treatment dropout predicted by initial level of intrinsic motivation for OCD treatment?
- c) To what extent was treatment dropout predicted by initial level of extrinsic motivation?

CHAPTER 2

METHOD

Participants

Participants in this study were 142 individuals admitted to the McLean/Massachusetts General Hospital OCD Institute (OCIDI) between January, 2001 and January, 2004. Each participant was assigned a diagnosis of obsessive-compulsive disorder through a process consisting of assessments conducted by a psychiatrist and a behavior therapist with expertise in OCD as well as by the administration of several standardized assessment instruments.

Criteria for admission to the OCIDI included the presence of OCD with associated severe life impairment and inadequate response to prior OCD treatment. Appropriateness for admission was determined by the Intake Coordinator via information gathered through various sources including pre-treatment scores on the *Y-BOCS* and collateral information from referring clinicians and family members. This study will use intent-to-treat methodology in which all patients accepted to the program between January, 2001 and January 2004 who completed admission measures were included, regardless of whether they completed or complied with the program.

Setting

The Massachusetts General Hospital/McLean OCIDI is an intensive residential treatment program (IRT) for individuals suffering from treatment-refractory OCD. It is the oldest of three IRT centers in the United States. Researchers have promoted IRT as an innovative and promising treatment approach for individuals with severe and debilitating

OCD symptoms who have not responded to traditional outpatient CBT treatments (Stewart, Egan Stack, Farrell, Pauls, Jenike, 2005; Willis, Rosqvist, Egan, Baney, Manzo, 1998). IRT has been shown to be an effective treatment in North American samples (Stewart et al., 2005) and European samples (Drummond, 1993; Thornicroft, Colson & Marks, 1991). More than a decade ago emergent research in Britain supported IRT as a viable alternative to neurosurgery and general inpatient psychiatric admission for treatment refractory OCD (Drummond, 1993; Thornicroft et al., 1991). Since that time, several IRT programs similar to the OCDI at McLean Hospital, have been developed in the United States to treat severe treatment-resistant OCD (see Osgood-Hynes, Riemann, Björgvinsson, 2003).

The OCDI provides specialized intensive behavioral, medication and milieu OCD treatment (Stewart et al., 2005). Treatment is provided at both the residential and “day patient” levels of care, with residents receiving around-the-clock interventions beginning with activities of daily living upon awakening in the morning (e.g., showering, grooming, and eating) to assistance with bedtime routines. Treatment is administered by a multidisciplinary team of psychiatrists, behavior therapists, social workers, nurses, and counselors within a highly structured program that enables close monitoring of treatment adherence. Participants in the OCDI treatment program receive two to four hours of intensive CBT daily, and psychopharmacology assessments weekly by OCD expert psychiatrists to monitor medication efficacy and side effects. Typical medications utilized at the OCDI include selective serotonin reuptake inhibitors (SSRIs) such as venlafaxine (Effexor) and clomipramine (Anafranil). Furthermore, all patients have regular meetings with a social worker and attend weekly group psychotherapy sessions

focusing on a variety of topics including symptom specific groups (e.g., scrupulosity, violent obsessions, etc.) or more general groups focusing on overall wellness. The focus of several of these groups is on problem-solving, life-rehabilitation goals, OCD-related goals, and peer support (Osgood-Hynes, Riemann, & Bjorgvinsson, 2003).

The program's main treatment focus is on daily intensive exposure and response prevention (ERP) sessions combined with medication therapy. Behavior therapy is conducted both in-vivo at the OCDI and in office sessions with behavior therapists. In vivo therapy sessions occur outside the context of the therapist's office and can occur in a variety of settings where the client is frequently triggered (e.g., trips to the grocery store, making food for lunch, driving one's car). For the most part, behavior therapy consists of ERP augmented with cognitive therapy. Patients follow individualized exposure and response prevention plans during a 2-hour block of time set aside in the morning for ERP tasks (10 a.m. to 12 p.m.) and then again during a 2-hour afternoon ERP session (2 p.m. to 4 p.m.). Moreover, many treatment plans include the augmentation of behavioral coaching for morning and nighttime routines to assist patients in resisting rituals during their activities of daily living.

Procedure

Participants in this study completed three measures at regularly scheduled intervals during the course of their treatment at the OCDI. The measures assessed a variety of domains including OCD symptom severity, motivation for OCD treatment, and depressive symptom severity. These measures included: (1) a demographic questionnaire including past medical history administered upon intake, (2) *Yale-Brown Obsessive*

Compulsive Scale, (3) *Treatment Self-Regulation Questionnaire*, and the (4) *Beck Depression Inventory*. These measures were administered as a means of monitoring the patient's progress during his or her stay at the OCDI. Patients were initially administered these measures at admission to the program to provide a baseline measurement. They were then administered the measures after two weeks and then monthly thereafter until the point of discharge from the OCDI. For patients with premature discharges (prior to two weeks), the final completed assessment served as the discharge measure for this study.

Measures

Demographics (Appendix A & B). Information on the each participant's age, gender, and ethnicity was collected from archived medical records. Furthermore, information was gathered on the participant's OCD treatment history including past treatments (i.e., medication, CBT, etc.) and level of care (i.e., outpatient and/or inpatient psychiatric admissions).

Yale-Brown Obsessive Compulsive Scale (Y-BOCS; Appendix C). The participant's response to treatment was measured using the *Yale-Brown Obsessive Compulsive Scale (Y-BOCS; Goodman et al., 1989a)*. The *Y-BOCS*, which assesses the overall severity of OCD symptoms, is considered the gold standard of tools in the assessment of OCD symptom severity. The *Y-BOCS* is administered and scored by a trained interviewer. Psychometric studies indicate that the *Y-BOCS* exhibits high convergent validity with the *NIMH Obsessive-Compulsive Scale* ($r = 0.67$) and is

sensitive to change and improvement in OCD, relative to the *Clinical Global Impressions-Obsessive Compulsive Scale* ($r = 0.89$) (Goodman et al., 1989a, b).

The *Y-BOCS* assesses five dimensions independently for obsessions (Items 1-5) and compulsions (Items 6-10): (a) time spent on these behaviors, (b) interference that these behaviors cause, (c) distress that the individual experiences, (d) degree of resistance to the symptoms, and (e) amount of control that the individual has over these behaviors. Each item is rated from 0 (*lowest severity*) to 4 (*highest severity*), and includes item probes and anchor points to guide the rater. The total *Y-BOCS* score is the sum of Items 1 to 10 (range = 0 to 40). The *Y-BOCS* is typically utilized as one of several assessment tools to aid in the diagnostic process and as a measure of symptom severity. The developers of the *Y-BOCS* scale provide the following recommended descriptors for assessing symptom severity: score of 1-7 is considered *sub-clinical*; score of 8-15 is considered *mild*; score of 16-23 is considered *moderate*; score of 24-31 is considered *severe*; score of 32-40 is considered *extreme* (Goodman et al., 1989). The *Y-BOCS* also contains a symptom checklist which measures the current and past experience of 15 categories of obsessions and compulsions.

Treatment Self-Regulation Questionnaire (TSRQ; Appendix D). Individual differences in motivational orientation (intrinsic and extrinsic motivation for treatment) was assessed using the *Treatment Self-Regulation Questionnaire* (Williams et al., 1996). The *TSRQ* measures the extent to which individuals engage in specific health behaviors of their own volition because such behaviors hold personal importance for them, rather than engaging in health behaviors as a response to external pressures. In past research, the *TSRQ* has been modified to address specific health behaviors such as diet, exercise,

smoking cessation and psychotherapy. The *TSRQ* has demonstrated strong construct validity and reliability in psychometric studies (Levesque, Williams, Elliot, Pickering, Bodenhamer & Finley, 2006), and research supports its usefulness as a tool to assess motivation for treatments for a variety of health-related issues and psychological problems (Kennedy, Goggin & Nollen, 2004; Williams et al., 2002; 2004).

Scale items were modified for the purpose of this study to address adherence to OCD treatment specifically. Using a 7-point Likert-type scale participants rated their agreement with 13 items describing the reasons that they continue to participate in treatment for their OCD symptoms (1 = *not at all true*; 7 = *very true*). Intrinsic motivation was determined by mean ratings for the five items on the Autonomous Responses subscale (e.g., “Because I feel like it is the best way to help myself.”). Extrinsic motivation was determined by mean ratings for the eight items on the Controlled Responses subscale (e.g., “Because others would have been angry at me if I didn’t.”).

Beck Depression Inventory (BDI; Appendix E). The *BDI* (Beck et al., 1961) is a 21-item self-report instrument that assesses the presence and severity of symptoms of depression. The *BDI* has been used for over 45 years in the assessment of depression and has been found consistently to be reliable and valid in a variety of populations. Moreover, psychometric studies have indicated that the *BDI* exhibits strong psychometric properties with well-established validity and reliability (Burt & Ishak, 2002). The *BDI* is correlated with clinician ratings of depression with correlations ranging from .62 to .66 (Beck, Steer, & Garbin, 1988). Groth-Marnat (2003) reported moderate correlations between the revised *BDI* and other scales measuring depression such as the *Hamilton*

Psychiatric Rating Scale for Depression (.73) and the *Zung Self Reported Depression Scale* (.76) and the *MMPI Depression Scale* (.76). Furthermore, The *BDI* demonstrates high internal consistency, with alpha coefficients of .86 and .81 for psychiatric and non-psychiatric populations, respectively (Beck, Steer, & Garbin, 1988). The *BDI* also demonstrates significant discriminant validity and is able to discriminate psychiatric patients from non-psychiatric patients (Beck et al., 1988; Groth-Marnat, 2003)

Each item of the *BDI* is rated on a four-point scale from 0 to 3. The total *BDI* score is the sum of items 1 to 21 (range = 0 – 63). The Center for Cognitive Therapy has provided the following guidelines for *BDI* cut-off scores with patients diagnosed as having an affective disorder: none or minimal depression is < 10, mild to moderate depression is 10–18, moderate to severe depression is 19–29, and severe depression is 30–36 (Beck et al., 1988).

Data Analyses

Data were coded from multiple time points for each participant including assessments conducted at: (1) the initial intake, (2) two-week point, (3) monthly points, and (4) discharge date. For those with premature discharges (prior to 2 weeks), the last completed assessment was used in the analysis as the discharge measure (via a last-observation-carried-forward approach). The primary outcome measure for this study was the individual's *Y-BOCS* score at discharge. Treatment response was defined by a *Y-BOCS* score reduction of at least 25%, a measure of clinically meaningful symptom alleviation (Goodman et al., 1993).

Descriptive analyses were conducted for the entire sample to determine the means, distribution, and variability of the data. Multiple regression analyses were conducted to answer the first three research questions to examine the relationship between initial level of overall motivation, initial level of intrinsic motivation and initial level of extrinsic motivation on OCD treatment outcome. The regression analyses were conducted using the techniques of Aiken and West (1991), who recommend centering outcome variables and avoiding artifacts of regression. In each of the regression analyses, length of treatment, initial OCD symptom severity, and initial depressive symptom severity were entered in as control variables. As discussed in the introductory section of this paper, previous research has suggested that these variables contribute to treatment outcomes for individuals receiving treatment for OCD. Therefore, these control variables were included in the construction of the model in order to accurately identify the unique predictive value of the primary variables of interest (i.e., overall, intrinsic, and extrinsic motivation).

Data Analysis Strategy for Q1. Question 1 examined the relationship between initial level of overall motivation for treatment and OCD symptom severity at the conclusion of treatment. To answer this question, a hierarchical multiple regression analysis was performed. The association between level of overall motivation and OCD symptom severity at treatment discharge was tested, controlling for length of treatment, severity of OCD symptoms upon admission to the treatment program, and severity of depressive symptoms upon admission.

Data Analysis Strategy for Q2. Question 2 examined the relationship between initial level of intrinsic motivation for treatment and OCD symptom severity at the

conclusion of treatment. To answer this question, a hierarchical multiple regression analysis was performed. The association between level of intrinsic motivation at admission and OCD symptom severity at treatment discharge was tested, controlling for length of treatment, severity of OCD symptoms upon admission to the treatment program, and severity of depressive symptoms upon admission.

Data Analysis Strategy for Q3. Question 3 examined the relationship between initial level of extrinsic motivation for treatment and OCD symptom severity at the conclusion of treatment. To answer this question, a multiple regression analysis was performed. The association between level of extrinsic motivation at admission and OCD symptom severity at treatment discharge was tested, controlling for length of treatment, severity of OCD symptoms upon admission to the treatment program, and severity of depressive symptoms upon admission.

Data Analysis Strategy for Q4. Question 4 examined the extent to which level of motivation for OCD treatment as measured by the TSRQ predicted treatment dropout. Given the relatively small number of treatment dropouts (i.e., 5 of 142), descriptive data are presented in lieu of statistical analyses involving prediction (i.e., logistic regression).

CHAPTER 3

RESULTS AND DISCUSSION

Preliminary Steps

Several preliminary steps were conducted before beginning the major phase of data analysis. Data entry was verified for accuracy by checking each response against the hard copies of questionnaires; miscoded entries were corrected. Each scale was then examined for missing data. Next, demographic information (see Table 1 and 2), descriptive statistics (see Table 3), and bivariate correlations of study variables (Table 4) were examined. This information is described in detail in the subsequent subsections. Finally, specific steps were taken prior to running regression analyses, and subsequently on the residuals, to check that all necessary assumptions were met to ensure that the results of the regression analyses would be generalizable beyond this particular sample. Analyses of these assumptions (i.e., normality, linearity, homoscedasticity, independence of the residuals, lack of extreme outliers, and multicollinearity) revealed few violations, and none were extreme. Furthermore, analyses indicated that the residuals were normally distributed; thus, no transformations of the data were necessary for the regression analyses. Statistical analyses were conducted using the Statistical Package for the Social Sciences (SPSS 14.0). For all statistical analyses presented and discussed in this chapter, a two-tailed probability level of $p < .05$ was used as the criterion for statistical significance.

Demographic and Descriptive Statistics

Demographic information for this sample is presented in Table 1. Participants in this study had a mean age of 34.23 years (SD 12.3; range 16 – 68), and the gender representation was 58.5% male. The ethnic makeup of this sample was 85.2% White (N = 121), 1.3% African American/Black (N = 2), 2.1% Hispanic/Latino (N = 3), 2.1% Asian American (N = 3), and 2.1 % Native American (N = 3). The majority of this sample had completed at least a high school education with only 6.3 % of the sample reporting that they had not completed high school. Approximately 28% (N = 39) of the sample reported that they had completed a four-year degree and were college graduates, while approximately 6% (N = 9) had completed an advanced degree (master's degree, doctoral degree, etc.). A substantial portion of this sample (36.6%) reported that they were currently unemployed at the time of admission. Furthermore, only 19% (N = 17) of the participants reported that they were married at the time of admission. This demographic is consistent with other studies involving individuals with severe OCD symptoms.

Table 1

Patients' Demographic Characteristics: Gender, Age, Ethnicity, Education, Employment and Marital Status

	N	%
Gender		
male	83	58.5
female	59	41.5
Age		
0 – 18	5	3.5
19 – 25	33	23.3
26 – 40	58	40.9
41 – 55	28	19.7
56 – 65	5	3.5
65 – 80	3	2.1
not reported	10	7.0
Ethnicity		
Caucasian/White	121	85.2
Hispanic/Latino	3	2.1
Native American	3	2.1
Asian American	3	2.1
African American/Black	2	1.3
Not reported	10	7.2
Education Level		
Did not complete high school	9	6.3
Completed 2-year trade school	7	4.9
High school graduate	46	32.4
Completed 4-year degree (college, etc.)	39	27.6
Completed graduate degree (M.A., Ph.D.)	9	6.3
Not reported	32	22.5
Employment Status		
Employed	57	40.1
Unemployed	52	36.6
Not reported	33	23.3
Marital Status		
Single (never married)	75	52.8
Married	27	19.0
Divorced	10	7.0
Partnered	4	2.8
Separated	3	2.1
Not reported	23	16.3

Information regarding the severity and psychiatric history of this sample is presented in Table 2. On average, individuals reported severe OCD symptoms (mean score on the *Y-BOCS* at admission = 26.6; *SD* = 6.36; range = 8 – 40), and moderate to severe depression (mean score on the *BDI* at admission = 21.27; *SD* = 10.99; range = 8 – 40). The mean age of OCD onset for this sample was 15.9 (*SD* = 9.84; range = 3 – 65). The OCD treatment history in this sample was extensive, with 98.6% having received some form of OCD treatment in the past. The number of past psychiatric admissions ranged between 0 and 12 (mean = 1.61), with 57.7% having had at least one past inpatient psychiatric admission. Thus, this OCD sample was severely impaired despite an extensive treatment history.

Table 2
Demographic Data Related to Mental Illness

Demographic	<i>M</i>	<i>SD</i>	<i>Range</i>
Reported age of OCD onset	15.96	9.84	3 – 65
Age at admission to OCDI	34.23	12.3	16 - 68
Number of past psychiatric admissions	1.61	2.31	0 - 12
Y-BOCS score at admission	26.66	6.36	8 – 40
BDI score at admission	21.27	10.99	0 – 52

Table 3 presents descriptive data for the specific predictor and outcome variables examined in this study (i.e., *Y-BOCS* at admission, *Y-BOCS* at discharge, total *TSRQ* score at admission, total score on the intrinsic motivation subscale, total score on the extrinsic motivation subscale, *BDI* score at admission, and length of treatment in days).

Mean *Y-BOCS* scores were 26.66 (SD = 6.36) at admission to the program and 17.12 (SD = 6.93) at discharge, reflecting a substantial mean *Y-BOCS* decrease of 9.51 points or 35.78%. This improvement in symptom scores represents a clinically significant OCD treatment response (as defined by Jacobsen & Truax, 1991). Mean depression scores, as measured by the *BDI*, improved substantially from depressed (M = 21.27; SD = 10.99) to a subthreshold level (M = 13.02; SD = 12.05), indicating a clinically significant decrease on the *BDI* scale of 8.25 points or 38.79%. On average, the level of intrinsic motivation reported by the patients in this study (M = 3.73; SD = 1.32) were significantly higher than the level of extrinsic motivation (M = 2.64; SD = .90). The average length of treatment for patients in this sample was 52.92 days (SD = 31.01).

Table 3

Descriptive Statistics for Predictor and Outcome Variables (N = 142)

Variables	M	SD	Range	Absolute mean decrease	% decrease in symptoms
Y-BOCS score					
at admission	26.66	6.36	8 – 40		
at discharge	17.12	6.93	1 - 33	9.51*	35.78*
BDI score					
at admission	21.27	10.99	0 – 52		
at discharge	13.02	12.05	0 - 57	8.25*	38.79*
Total TSRQ score at admission	41.33	8.57	21 –		
Mean intrinsic motivation	3.73	1.32	63		
Mean extrinsic motivation	2.64	.90	1 – 5 1 – 5		
Length of treatment in days	52.92	31.01	1 - 152		

Note. * Clinically significant decrease in symptoms as defined by Jacobsen and Truax, 1991.

Bivariate Correlations for Predictors and Outcome Variable

Preliminary analysis examined the relationship between predictors and outcome variables. Bivariate correlations for the study variables are presented in Table 4. Results in Table 4 indicate significant positive correlations between OCD treatment outcome (i.e., *Y-BOCS* score at discharge) and several predictor variables. Consistent with previous research conducted on OCD treatment outcome (Franklin et al., 2000; Keeley, Storch, Merlo, & Geffken, 2008), higher OCD symptom severity at admission, as measured by the *Y-BOCS*, was positive correlated with higher OCD symptom severity at discharge ($r = .412, p < .001$). Furthermore, higher depressive symptom severity at admission, as measured by the *BDI*, was positively correlated with higher OCD symptom severity at discharge ($r = .324, p < .001$). Results also indicate that initial level of overall motivation and level of extrinsic motivation, as measured by the *TSRQ*, were positively correlated with OCD symptom severity at discharge. This is to say, that a higher level overall motivation scores was significantly related to higher OCD symptom severity scores at discharge ($r = .239, p < .01$). Moreover, higher scores on the extrinsic motivation subscale were significantly related to higher OCD symptom severity scores at discharge ($r = .275, p < .001$). No significant correlation was found between OCD treatment outcome and level of intrinsic motivation ($r = .043, p = .613$) or length of treatment ($r = .17, p = .100$).

Table 4
Correlations for Predictor and Outcome Variables (N = 142)

Variables	1	2	3	4	5	6	7
1. Y-BOCS at admission	–	.412***	.288***	.069	.296***	.514***	.139 ^t
2. Y-BOCS at discharge		–	.239**	.043	.275***	.324***	.139 ^t
3. TSRQ score			–	.394***	.814***	.203*	.162 ^t
4. Intrinsic motivation				–	.125	.013	.053
5. Extrinsic motivation					–	.130	.184*
6. BDI at admission						–	.061
7. Length of Treatment							–

Note. * $p < .05$. ** $p < .01$. *** $p < .001$. ^t $p < .10$

Research Question One (Q1): Did level of overall motivation predict OCD treatment outcome?

This research question assessed the extent to which level of overall motivation for treatment predicted treatment outcome for patients receiving intensive cognitive-behavioral therapy for OCD. To examine this question, a hierarchical linear regression was conducted. The dependent variable was a measure of OCD symptom severity at the conclusion of treatment (*Y-BOCS*). Results of this hierarchical regression analysis are presented in Table 5.

In Step 1, baseline OCD symptom severity (i.e., *Y-BOCS* at admission) and length of treatment were entered as covariates. Past research has identified baseline symptom severity and length of treatment as significant predictors of treatment outcome (Franklin

et al., 2000; Keeley, Storch, Merlo, & Geffken, 2008); therefore, these variables were included in the model as control variables, allowing a test of the effect of the predictor of interest (i.e., level of overall motivation) over and above those predictors identified in previous research. In support of previous research, results of Step 1 of the model indicated that baseline OCD symptom level significantly contributed to the prediction of treatment outcome in this sample ($\beta = .298, p < .01$), with higher OCD symptom severity at admission associated with higher OCD symptom severity at discharge. However, contrary to previous research findings, length of treatment was not a significant predictor of treatment outcome in this sample ($\beta = .068, p = .366$). Results of Step 1 of the model indicated that baseline OCD symptom severity and length of treatment accounted for approximately 17.7% of the variation in OCD treatment outcome ($R^2 = .177, p < .001$). In Step 2, baseline depressive symptom severity (i.e., *BDI* at admission) was entered as a predictor. The decision to include depression as a predictor in the overall model was based on previous research demonstrating a relationship between higher rates of depression and poorer treatment outcomes (Abramowitz, 2004; Abramowitz et al., 2000; Franklin et al., 2000; Steketee, Chambless, & Tran, 2000). Depressive symptom severity was entered independently in the model to examine its effect over and above variables that have been identified as predictors in previous research (i.e., baseline OCD symptom severity and length of treatment). Furthermore, depressive symptom severity was entered prior to the primary variable of interest (i.e., level of overall motivation) in order to examine the unique impact of depressive symptoms on treatment outcome. In Step 2, the addition of depressive symptom severity to the model did not significantly improve prediction of treatment outcome ($\beta = .140, p = .088$). This lack of a significant

relationship is contrary to past research which identified severity of depressive symptoms as a predictor of OCD treatment outcome.

Finally, in Step 3 level of overall motivation for treatment, as measured by the *TSRQ* score at admission, was entered into the model to answer Research Question 1. Results failed to indicate that initial level of overall motivation for treatment was a significant predictor of OCD symptom severity at the conclusion of treatment ($\beta = .118$ $p = .161$) when controlling for length of treatment, baseline severity of OCD symptoms upon admission, and baseline severity of depressive symptoms. Therefore, the data do not support the hypothesis that higher level of overall motivation for treatment at admission would be significantly correlated with lower symptom severity at discharge.

Given that it is possible that motivation may have a differing effect contingent upon level of symptom severity, an additional step was taken to examine whether the effect of level of overall motivation was dependent on the level of severity of symptoms at admission. In other words: Would motivation have the same impact on treatment outcome for an individual with high initial symptom severity at the outset of therapy as it would for an individual with low initial symptom severity? To this end, interaction terms between level of overall motivation and initial depressive severity, and level of overall motivation and initial OCD severity, were added to the model in subsequent steps to examine the possibility of interaction effects and their predictive contribution to the variance of this model. Neither of the interactions was significant, and their inclusion did not significantly improve the explanatory power of the model.

Discussion and Interpretation of Results for Question One:

Results of this study do not support the hypothesis that higher level of overall motivation for treatment at admission would be predictive of OCD treatment response. These results are contrary to previous findings in health-related domains where a considerable amount of research has demonstrated that level of overall motivation at the outset of treatment is a significant predictor of treatment response (Feld et al., 2001; Geller, 2002; Touyz et al., 2003; Vansteenkiste et al., 2005; Williams et al., 2006). The results of the present study are surprising given the amount of emphasis in the literature placed on the role of motivation in the treatment of anxiety disorders including OCD. As noted in the introduction, several theorists and researchers have asserted that a level of motivation is an essential component in the OCD treatment process (e.g., Arkowitz, Westra, Miller, & Rollnick, 2008; Foa, 2000), leading some clinicians to advocate for assessing level of overall motivation at the outset of treatment. Despite this assumption, some recent studies, including the present study, have failed to demonstrate that overall level of motivation at admission is a predictor of OCD treatment response (Pinto, Pinto, Neziroglu, & Yaryura-Tobias, 2007; Vogel, Hansen, Stiles, & Gotestam, 2006).

As suggested by the present results, level of overall motivation at admission may not predict OCD treatment outcome. However, these findings should be interpreted with caution when drawing conclusions about the role of motivation in OCD treatment response. It is important to note that the present study investigated level of overall motivation at the *outset of treatment* and did not examine motivation during the course of treatment. The decision to measure level of motivation at the *outset of treatment* was based on previous research conducted in health-related domains (i.e., diabetes, smoking

cessation, weight control, etc.) where level of motivation was assessed at admission in most studies. The findings of the present investigation are consistent with a study conducted by Vogel and colleagues (2006), which explored predictors of OCD treatment response including treatment motivation, treatment expectancy, and treatment alliance. In that study, treatment expectancy and high level of motivation to change were not significantly related to post-treatment outcome; however, a positive therapeutic alliance (measured at mid-treatment) was significantly predictive of post-treatment *Y-BOCS* score. Similarly, in a study conducted by Pinto and colleagues (2007), motivation scores at admission were not predictive of treatment response for individuals receiving an open-label 10-week trial of fluvoxamine. Of note, as with the present study design, both of the abovementioned studies assessed overall level of motivation at the *outset of treatment*, and no measurement of motivation was made during the course of treatment.

It may be the case that motivation plays a different role in the OCD treatment process than it does in interventions for health-related problems. That is to say, although level of motivation at admission to a program may be a significant predictor of response for individuals entering a smoking cessation or weight loss program, the role of motivation in OCD treatment may be more complex. Indeed, many of the individuals in the present study reported a high level of overall motivation at the outset of treatment. However, given the highly aversive and demanding nature of this treatment, level of motivation may have fluctuated substantially over the course of treatment depending on the behavioral tasks required. For example, some patients may have begun therapy with the best of intentions for changing their behavior; however, when faced with particularly difficult exposure tasks they may have experienced a sharp increase in ambivalence

accompanied by a lowering of overall level of motivation. Therefore, it may be the case that level of overall motivation at the outset of treatment does not predict OCD treatment outcome, but rather the ability to maintain a high level of motivation over the course of treatment is predictive of outcome. More research is needed to investigate the fluctuating course of motivation during the OCD treatment process and its effect on outcome.

Table 5

Summary of Hierarchical Multiple Regression Analysis for Level of Overall Motivation for Treatment and Control Variables Predicting OCD Treatment Outcome (N = 142)

Variable	Step 1			Step 2			Step 3		
	<i>B</i>	<i>SE B</i>	β	<i>B</i>	<i>SE B</i>	β	<i>B</i>	<i>SE B</i>	β
Y-BOCS at admission	.437	.085	.401***	.351	.098	.322** *	.322	.100	.296***
Length of Treatment	.019	.017	.083	.019	.017	.085	.016	.017	.070
BDI score at admission				.097	.056	.153 ^f	.091	.056	.145
TSRQ score at admission							.092	.065	.113
TSRQ x BDI									
TSRQ x YBOCS									
R^2		.177***			.194***			.206**	
Change in R^2					.017			1.988	

Note: Y-BOCS at admission, BDI score at admission and overall motivation were centered at their means.

Note. * $p < .05$. ** $p < .01$. *** $p < .001$. ^f $p < .10$

Table 5
Continued.

Variable	Step 4			Step 5		
	<i>B</i>	<i>SE B</i>	β	<i>B</i>	<i>SE B</i>	β
Y-BOCS at admission	.327	.100	.301** *	.324	.101	.298** *
Length of Treatment	.015	.017	.068	.015	.017	.068
BDI score at admission	.088	.057	.140	.089	.057	.140
TSRQ score at admission	.093	.065	.115	.095	.066	.118
TSRQ x BDI	-.003	.006	-.042	-.002	.006	-.033
TSRQ x YBOCS				-.003	.010	-.023
R^2		.207***			.208***	
Change in R^2		.002			.000	

Note: Y-BOCS at admission, BDI score at admission and overall motivation were centered at means.

Note. * $p < .05$. ** $p < .01$. *** $p < .001$. ^t $p < .10$

Research Question Two (Q2): Did level of intrinsic motivation predict OCD treatment outcome?

This research question assessed the extent to which level of intrinsic motivation for treatment predicted treatment outcome for patients receiving intensive cognitive-behavioral therapy for OCD. Despite the lack of evidence supporting level of overall motivation predicting treatment outcome in Research Question 1, some research findings indicate that the specific quality or type of motivation (i.e., intrinsic or extrinsic motivation) may have distinct predictive power (Harter & Jackson, 1992; Pelletier, Tuson, Haddad, 1997). To examine this question, a hierarchical linear regression was performed. The dependent variable was a measure of OCD symptom severity at the

conclusion of treatment (*Y-BOCS*). Results of this hierarchical regression analysis are presented in Table 6.

Similar to the first analysis, in Step 1 baseline OCD symptom severity (i.e., *Y-BOCS* at admission) and length of treatment were entered as covariates. The first two steps were identical to those run in the previous model. These variables were included in the model as control variables, allowing for a test of the effect of the predictor of interest (i.e., level of intrinsic motivation) over and above those predictors identified in previous research. In support of previous research and consistent with our finding from Question 1, results of Step 1 of the model indicated that baseline OCD symptom level significantly contributed to the prediction of treatment outcome in this sample ($\beta = .301, p < .01$), with higher OCD symptom severity at admission being associated with higher OCD symptom severity at discharge. However, similar to the results of the analysis for Research Question 1, and contrary to previous research findings, length of treatment was not a significant predictor of treatment outcome in this sample ($\beta = .098, p = .197$).

In Step 2, baseline depressive symptom severity (i.e., *BDI* at admission) was entered as a predictor. Depressive symptom severity was entered independently in the model to examine its effect over and above variables that have been identified as predictors in previous research (i.e., baseline OCD symptom severity and length of treatment). Furthermore, depressive symptom severity was entered prior to the primary variable of interest (i.e., level of intrinsic motivation) to examine the unique impact of depressive symptoms on treatment outcome. In Step 2, the addition of depressive symptom severity to the model did not significantly improve prediction of treatment outcome ($\beta = .105, p = .233$). This lack of a significant relationship is contrary to past

research which has identified severity of depressive symptoms as a significant predictor of OCD treatment outcome. However, it is consistent with findings for Research Question 1.

In Step 3, the variable of interest, level of intrinsic motivation, was entered into the model to specifically address Research Question 2. Results failed to indicate that level of intrinsic motivation for treatment was a significant predictor of OCD symptom severity at the conclusion of treatment ($\beta = .021$ $p = .788$) when controlling for length of treatment, baseline severity of OCD symptoms upon admission, and baseline severity of depressive symptoms. Therefore, no evidence was found to support the hypothesis that a higher level of intrinsic motivation for treatment at admission is a significant predictor of treatment outcome.

Additionally, as with the analysis for Question 1, given that it is possible that level of intrinsic motivation may have a differing effect contingent upon level of symptom severity, steps were taken to examine whether the effect of intrinsic motivation was dependent on the level of severity of symptoms at admission. To investigate this question, interaction terms between level of intrinsic motivation and initial depressive severity, and level of intrinsic motivation and initial OCD severity, were added to the model in subsequent steps to examine the possibility of interaction effects and their predictive contribution to the variance of this model. In Step 4 the interaction between level of intrinsic motivation and depressive severity (i.e., Int X BDI) was entered as a predictor. Results indicate that this interaction term was not a significant predictor of treatment outcome, and did not significantly improve the explanatory power of the model.

Finally, in Step 5 the interaction between level of intrinsic motivation and OCD symptom severity (i.e., Int X Y-BOCS) was entered as a final predictor. Interestingly, results indicated that the interaction between level of intrinsic motivation and OCD symptom severity at admission was a significant predictor of treatment outcome ($\beta = -.235, p < .01$) in this model. Moreover, the inclusion of this interaction term significantly improved the prediction model (Change in $R^2 = .044, p < .01$). The sample multiple correlation coefficient for this model was .51, indicating that the full regression model accounted for approximately 26% of the total variance in OCD treatment outcome ($R^2 = .261, p < .001$).

Figure 1 illustrates how the effect of level of intrinsic motivation on treatment outcome varies depending on initial OCD symptom severity (*Y-BOCS* score at admission). As shown in Figure 1, the outcomes of patients with a low level of intrinsic motivation differ according to their level of symptom severity at the outset of treatment. Those patients having high initial OCD symptom severity and low level of intrinsic motivation at the outset of treatment had poorer treatment outcomes (higher *Y-BOCS* scores at discharge) than did fellow patients with high initial symptom severity who also had a high level of intrinsic motivation. For individuals entering treatment with a high level of severity of symptoms at treatment outset, a high level of intrinsic motivation is related to better outcome.

Table 6

Summary of Hierarchical Multiple Regression Analysis for Level of Intrinsic Motivation for Treatment and Control Variables Predicting OCD Treatment Outcome (N = 142)

Variable	Step 1			Step 2			Step 3		
	<i>B</i>	<i>SE B</i>	β	<i>B</i>	<i>SE B</i>	β	<i>B</i>	<i>SE B</i>	β
Y-BOCS at admission	.437	.085	.401** *	.351	.098	.322** *	.349	.098	.321***
Length of Treatment	.019	.017	.083	.019	.017	.085	.019	.017	.084
BDI score at admission				.097	.056	.153 ^t	.097	.056	.154 ^t
Intrinsic motivation							.075	.403	.014
Int x BDI									
Int x Y-BOCS									
R^2		.177***			.194***			.194***	
Change in R^2					.017 ^t			.000	

Note: Y-BOCS at admission, BDI score at admission and intrinsic motivation were centered at their means.

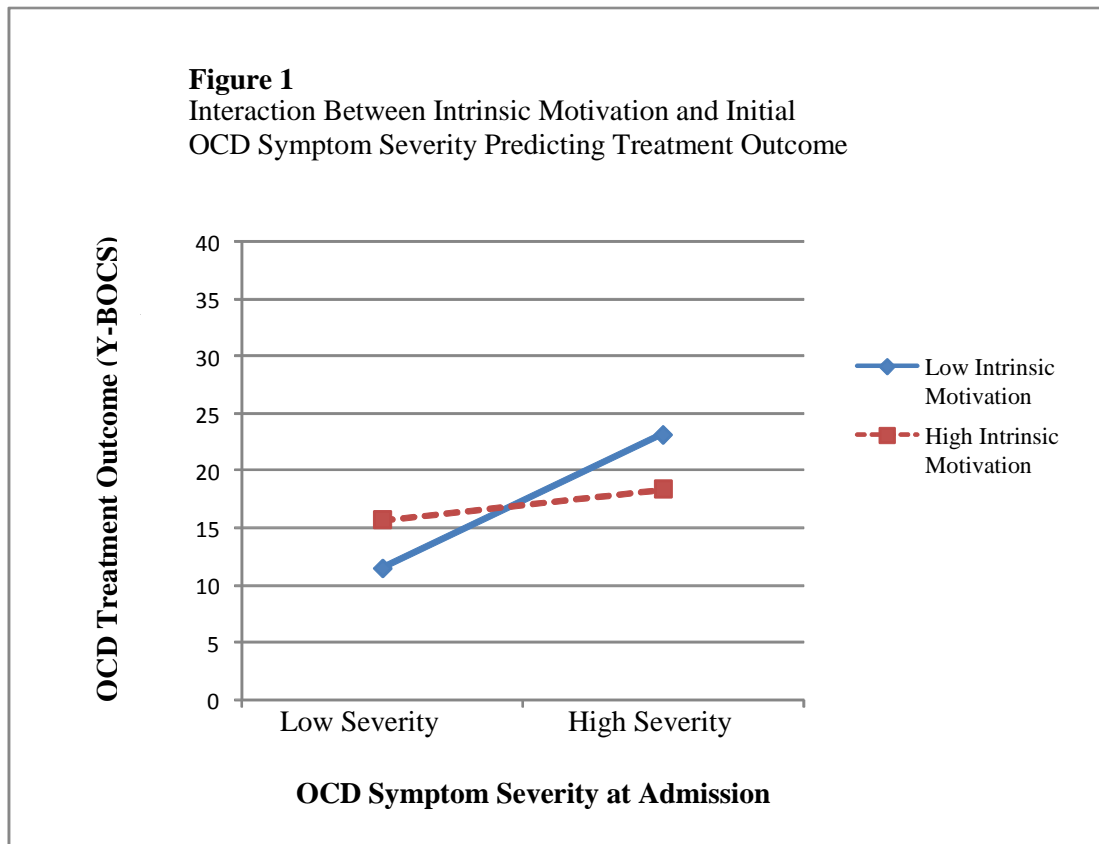
Note. * $p < .05$. ** $p < .01$. *** $p < .001$. ^t $p < .10$

Table 6
Continued.

Variable	Step 4			Step 5		
	<i>B</i>	<i>SE B</i>	β	<i>B</i>	<i>SE B</i>	β
Y-BOCS at admission	.342	.097	.314** *	.328	.095	.301** *
Length of Treatment	.015	.017	.069	.022	.017	.098
BDI score at admission	.083	.056	.131	.066	.055	.105
Intrinsic motivation	.107	.399	.021	-.104	.396	-.020
Int x BDI	-.072	.036	-.153 ^t	-.031	.038	-.066
Int x Y-BOCS				-.156	.055	-.235**
R^2		.217***			.261***	
Change in R^2		.022 ^t			.044**	

Note: Y-BOCS at admission, BDI score at admission and intrinsic motivation were centered at their means.

Note. * $p < .05$. ** $p < .01$. *** $p < .001$. ^t $p < .10$



Discussion and Interpretation of Results for Question Two:

The second research question addressed the extent to which level of intrinsic motivation for treatment predicted treatment outcome for patients receiving intensive cognitive-behavioral therapy for OCD. Researchers have postulated that it is not only the level of motivation that is important in treatment outcome, but also the specific quality or motivational orientation (i.e., intrinsic or extrinsic motivation) that may have distinct predictive power (Deci & Ryan, 2000; Harter & Jackson, 1992; Pelletier, Tuson, Haddad, 1997). In particular, in the realm of health-related research, intrinsic motivation for engaging in treatment has been shown to lead to better outcome for a variety of problems including diabetes (G.C. Williams, Freedman, & Deci, 1998), morbid obesity (Williams,

Grow, Freedman, Ryan, & Deci, 1996), opiate addiction (Zeldman, Ryan, & Fiscella, 2004), alcohol dependence (Ryan, Plant, O'Mally, 1995), and cigarette smoking (Williams, Gagne, Ryan, & Deci, 2001). More recently, Zuroff and colleagues (2007) extended this research from the health-related domain to the treatment of mental illness. Ninety-five depressed outpatients were randomly assigned to receive 16 sessions of manualized interpersonal therapy, cognitive behavioral therapy, or pharmacotherapy with clinical management. Self-report and interviewer-based measures of depression severity were collected at pre-treatment and post-treatment. Level of intrinsic motivation, therapeutic alliance, and perceived therapist autonomy support were assessed at session three. Intrinsic motivation was the strongest predictor of remission and lower post-treatment depressive symptoms in all three brief treatments for depression. Based on this research, the hypothesis was made that a higher level of intrinsic motivation for OCD treatment at admission would be a significant predictor of treatment outcome when controlling for the length of treatment, baseline levels of OCD symptoms, and baseline levels of depressive symptoms.

Results of the present study are generally consistent with past research highlighting the importance of intrinsic motivation as a predictor of treatment outcome. However, the present findings indicate that the relationship between intrinsic motivation and OCD treatment outcome may be more complex than seen in previous studies in the health-related domains. Results of this study suggest that the relationship between level of intrinsic motivation and OCD treatment outcome is dependent upon the level of severity of OCD symptoms at the outset for treatment. More specifically, patients entering treatment with high OCD symptom severity and a low level of intrinsic

motivation had poorer treatment outcomes, whereas those patients with high symptom severity who also reported a high level of intrinsic motivation had better treatment outcomes. This finding supports past research investigating the specific mechanisms by which intrinsic motivation promotes change. Studies in non-psychotherapy contexts suggest that patients with higher levels of intrinsic motivation may adhere more closely to the prescribed treatment, may carry out therapeutic procedures more carefully and persistently, and may persevere in treatment even when it becomes difficult or discouraging (Markland, Ryan, Tobin, & Rollnick, 2005).

Results of the present study suggest that level of intrinsic becomes increasingly important when OCD symptoms are more severe and thus more likely to interfere with most areas of daily functioning. The findings of this study are consistent with a recent study conducted by Nakagami and colleagues (2008) which examined the nature of the relationship between intrinsic motivation and measures of neurocognition and psychosocial functioning for individuals diagnosed with schizophrenia. Evidence from Nakagami's study suggests that intrinsic motivation is a significant factor for understanding psychosocial functioning and may be critical to strategies for helping patients with schizophrenia attain improved levels of functioning.

Interestingly, results of the present study indicate that intrinsic motivation may play a different role for those individuals with lower symptom severity when compared to those with higher symptom severity. For individuals with lower symptom severity at the beginning of treatment, a higher level of intrinsic motivation may lead to slightly worse treatment outcomes in an intensive setting. Although this finding may seem counterintuitive at first glance, one explanation for this finding may relate to the type of

treatment administered in this study. Patients in this study participated in a highly intensive, structured, and all-encompassing form of treatment in which they were continuously challenged to confront their symptoms by staff members throughout the day. The treatment was designed to address patients' symptoms in all phases of their day-to-day lives. It is possible that for those individuals entering treatment with lower symptom severity and a higher level of intrinsic motivation, this type of setting may actually have been less beneficial and less appropriate for their treatment needs.

The findings of the present study lend support to the importance of matching treatment interventions to both the symptom severity of the patient and to his or her level of intrinsic motivation. In other words, patients with a higher severity of OCD symptoms who are intrinsically motivated may benefit from more intensive and structured treatment settings (e.g., the OCDI). Alternatively, highly intrinsically motivated individuals with lower symptom severity may benefit more from treatments that capitalize on their existing sense of autonomy (e.g., weekly outpatient treatment) and better match their level of treatment needs. This finding is also consistent with the literature associated with Self-Determination Theory (Deci & Ryan, 1995; 2002). According to Deci and Ryan (1995), there are three basic human needs which motivate individuals to change or initiate a behavior. One of the needs that Deci and Ryan describe as being most important is the *need for autonomy*, or the need to experience one's actions as autonomous choices and without external influence. Self-Determination Theory (Deci & Ryan, 2000) posits that those with a higher level of intrinsic motivation experience their choices as more autonomous. It may be the case that the intensive treatment program offered at the OCDI is not well designed for individuals with lower symptom severity and

a higher level of intrinsic motivation. For these individuals, higher intrinsic motivation at admission may be indicative of a more intact and healthy sense of autonomy. Therefore, a highly intensive setting with constant behavioral interventions may not be appropriate, and may take away from one's sense of autonomy.

Research Question Three (Q3): Did level of extrinsic motivation predict OCD treatment outcome?

This research question assessed the extent to which level of extrinsic motivation for treatment predicted treatment outcome for patients receiving intensive cognitive-behavioral therapy for OCD. To examine this question, a hierarchical linear regression was performed. The dependent variable was a measure of OCD symptom severity at the conclusion of treatment (*Y-BOCS*). Results of this hierarchical regression analysis are presented in Table 7.

Similar to previous analyses, in Step 1 baseline OCD symptom severity (i.e., *Y-BOCS* at admission) and length of treatment were entered as covariates. These variables were included in the model as control variables, allowing for a test of the effect of the predictor of interest (i.e., level of extrinsic motivation) over and above those predictors identified in previous research. In support of previous research and consistent with findings from Research Questions 1 and 2, results of Step 1 of the model indicated that baseline OCD symptom significantly contributed to the prediction of treatment outcome in this sample ($\beta = .401, p < .001$), with higher OCD symptom severity at admission being associated with higher OCD symptom severity at discharge. Moreover, similar to the results of the analysis on Research Questions 1 and 2, length of treatment was not a significant predictor of treatment outcome in this sample ($\beta = .083, p = .288$). Results of

Step 1 of the model indicated that baseline OCD symptom severity and length of treatment accounted for approximately 17.7% of the variation in OCD treatment outcome ($R^2 = .177$, $p < .001$).

In Step 2, baseline depressive symptom severity (i.e., *BDI* at admission) was entered as a predictor. Depressive symptom severity was entered independently in the model to examine its effect over and above variables that have been identified as predictors in previous research (i.e., baseline OCD symptom severity and length of treatment). Depressive symptom severity was entered prior to the primary variable of interest (i.e., level of extrinsic motivation) to examine the specific impact of depressive symptoms on treatment outcome. In Step 2, the addition of depressive symptom severity to the model did not significantly improve prediction of treatment outcome ($\beta = .153$, $p = .088$; Change in $R^2 = .017$, $p = .088$).

In Step 3, the variable of interest, level of extrinsic motivation, was entered into the model to specifically address Research Question 3. Interestingly, results indicate that level of extrinsic motivation was a significant predictor of OCD treatment outcome ($\beta = .162$, $p < .05$), with a higher level of extrinsic motivation associated with higher *Y-BOCS* scores (i.e., more OCD symptoms) at the conclusion of treatment. Moreover, the inclusion of extrinsic motivation significantly improved the prediction model (Change in $R^2 = .023$, $p < .05$). Results of Step 3 of the model indicated that baseline OCD symptom severity, length of treatment, depressive severity, and level of extrinsic motivation accounted for approximately 21.8% of the variation in OCD treatment outcome ($R^2 = .218$, $p < .001$). Level of extrinsic motivation was a significant predictor of outcome

when controlling for length of treatment, baseline levels of OCD symptoms, and baseline depressive symptoms.

Additionally, as with the previous analyses for Questions 1 and 2, given that it is possible that level of extrinsic motivation may have had a differing effect contingent upon level of symptom severity, steps were taken to examine whether the effect of level of extrinsic motivation was dependent on the level of symptom severity at admission. To investigate this question, interaction terms between level of extrinsic motivation and initial depressive severity, and level of extrinsic and initial OCD severity, were added to the model in subsequent steps to examine the possibility of interaction effects and their predictive contribution to the variance of this model. In Step 4 the interaction between level of extrinsic motivation and depressive severity (i.e., Ext X BDI) was entered as a predictor. Results indicate that this interaction term did not significantly improve the explanatory power of the model to the $p < .05$ level. Finally, in Step 5 the interaction between level of extrinsic motivation and OCD symptom severity (i.e., Ext X Y-BOCS) was entered as a final predictor. This interaction term was not significant and its inclusion did not significantly improve the explanatory power of the model. Given that the additions of interactions in Step 4 and Step 5 were found to be non-significant, Step 3 should be interpreted as the final model.

Table 7

Summary of Hierarchical Multiple Regression Analysis for Level of Extrinsic Motivation for Treatment and Control Variables Predicting OCD Treatment Outcome ($N = 142$)

Variable	Step 1			Step 2			Step 3		
	<i>B</i>	<i>SE B</i>	β	<i>B</i>	<i>SE B</i>	β	<i>B</i>	<i>SE B</i>	β
Y-BOCS at admission	.437	.085	.401***	.351	.098	.322** *	.299	.100	.275** *
Length of Treatment	.019	.017	.083	.019	.017	.085	.014	.017	.061
BDI score at admission				.097	.056	.153 ^t	.100	.056	.158 ^t
Extrinsic motivation							1.243	.613	.162*
Ext x BDI									
Ext x Y-BOCS									
R^2		.177***			.194***			.218***	
Change in R^2					.017			.023*	

Note: Y-BOCS at admission, BDI score at admission and extrinsic motivation were centered at their means.

Note. * $p < .05$. ** $p < .01$. *** $p < .001$. ^t $p < .10$

Table 7
Continued.

Variable	Step 4			Step 5		
	<i>B</i>	<i>SE B</i>	β	<i>B</i>	<i>SE B</i>	β
Y-BOCS at admission	.298	.101	.274** *	.303	.100	.278** *
Length of Treatment	.014	.017	.063	.015	.017	.069
BDI score at admission	.100	.056	.158 ^t	.100	.056	.158 ^t
Extrinsic motivation	1.252	.618	.164*	1.131	.624	.148 ^t
Ext x BDI	.008	.050	.013	-.019	.055	-.030
Ext x Y-BOCS				.125	.099	.106
R^2		.218***			.227***	
Change in R^2		.000			.009	

Note: Y-BOCS at admission, BDI score at admission and extrinsic motivation were centered at their means.

Note. * $p < .05$. ** $p < .01$. *** $p < .001$. ^t $p < .10$

Discussion and Interpretation of Results for Question Three:

The third research question addressed the extent to which level of level of extrinsic motivation for treatment predicted treatment outcome for patients receiving intensive cognitive-behavioral therapy for OCD. Results of this study indicate that level of extrinsic motivation was a significant predictor of OCD treatment outcome when controlling for length of treatment, baseline levels of OCD symptoms, and baseline depressive symptoms. Furthermore, a higher level of extrinsic motivation was associated with poorer OCD treatment outcome. Prior to this study, researchers in the mental health field have focused much of their attention on the role of intrinsic motivation in predicting treatment response (Britton, Williams, & Connor, 2008; Nakagami et al., 2008; Ryan &

Deci, 2000). Few studies have investigated the role of externally motivated factors in treatment response, and no study to date has explored the role of extrinsic motivation in predicting OCD treatment outcome. The results of this study are generally consistent with the few studies that have explored this relationship.

Thus far, the few studies that have investigated the role of extrinsic or external motivation for treatment have been in the substance-abuse and health-related treatment literature. For example, in a study which examined the relationship between external motivation and treatment outcomes in a methadone maintenance program for opioid-dependent patients, patients who were externally motivated for treatment had higher relapse rates (as evidenced by failed urine screens) and poorer attendance (Zeldman, Ryan, and Fiscella, 2004). Results of this study also identified a particular subgroup of noncompliant individuals for whom the presence of high level of extrinsic motivation and low level of intrinsic motivation severely undermined treatment attendance and was associated with the greatest degree of relapse. Furthermore, Williams, Grow, Freedman, Ryan, and Deci (1996) found that morbidly obese patients in a weight-loss program who reported less internal (i.e., intrinsic) and more external (i.e., extrinsic) reasons for treatment experienced less weight loss and had difficulties maintaining their weight over a 2-year period. The results of the present study extend these findings to the realm of mental health treatment, specifically OCD treatment.

The findings of the present study are consistent with Self Determination Theory (SDT; Deci & Ryan, 1985, 2000) in which the key concept is autonomous motivation. According to Self Determination Theory, people are said to be autonomously motivated when they experience themselves as having freely chosen their goals and the choice is

felt to emanate from themselves. In contrast, people experience controlled or extrinsic motivation when they feel that their choices do not emanate from themselves, but rather reflect internal (e.g., guilt) or external pressures (e.g., others' demands). Individuals entering treatment for OCD with a high level of extrinsic motivation may feel pressured to engage in the program. They may be entering treatment to gain the approval or disapproval of significant others, or to avoid feelings of guilt and self-reproach.

Given that OCD treatment is experienced by patients as difficult and aversive (Maltby & Tolin, 2003), it is unlikely that patients would enter treatment purely for intrinsic purposes; external motivating factors are likely present for each patient. Indeed, the majority of patients in this study reported some degree of extrinsic motivation at admission. However, the findings in this study suggest that a higher level of extrinsic motivation at the outset of treatment predicted poorer treatment outcome. From a clinical standpoint, this finding suggests that treatment would have a different outcome for the patient who responds to the question, "What brings you to seek OCD treatment?" by stating, "My spouse told me I have to go into therapy or else..." compared with the patient who responds, "I have been thinking about my life and realize that I need to make changes to confront my OCD if I want to be the person I intend to be." The former response exemplifies a highly controlled, extrinsically motivated reason, and the latter response a more autonomous or intrinsically motivated reason for entering treatment.

It may be that individuals who entered treatment under external social pressure (i.e., level of extrinsic motivation) experienced OCD treatment as less in line with their own personal goals, and experienced internal conflict during the treatment process. Extrinsically motivated patients may have failed to internalize the responsibility for

confronting their symptoms, and only half-heartedly engaged in the treatment process to appease the demands of others. Furthermore, extrinsically motivated patients may have experienced an *external locus of causality*; that is, they may not have attributed treatment gains made during the course of therapy to their own efforts, but instead explained them away as “just doing the treatment because I was told to.” More research is needed to investigate the specific external motivating factors experienced by patients and the mechanism by which these factors may undermine treatment.

Research Question Four (Q4): To what extent did level of motivation predict treatment dropout for patients receiving intensive treatment for obsessive-compulsive disorder?

This research question assessed the extent to which motivation was related to treatment dropout for individuals receiving treatment for OCD. Treatment dropout for this study was defined as having been discharged from treatment within two weeks following admission. Of the 142 participants in this study, 5 individuals (3.5%) left the OCDI prior to the two-week point. Given the relatively small number of treatment dropouts, descriptive data are presented (see Table 8) in lieu of statistical analyses involving prediction (i.e., logistic regression).

Of the 5 participants who left the program prior to the two week point, 3 participants (NC 1, NC 2, and NC 3) did not experience substantial treatment gains. Participant NC1, despite having the highest overall motivation score of all treatment dropouts ($TSRQ = 51$), experienced the poorest treatment outcome with increases in both OCD symptoms (change in $Y-BOCS = +4$) and depressive symptoms (change in $BDI = +6$) between admission and discharge. Interestingly, participant NC1 was also the only patient of the 5 treatment dropouts to report higher scores on the extrinsic motivation

subscale (3.8) than on the intrinsic motivation subscale (3.0) at admission. Participants NC2 and NC3 were the two participants with the shortest stays in the sample, with participant NC2 staying a total of 2 days in the treatment program and participant NC3 exiting the program after one day. A qualitative examination of the exit interview data for these two participants indicated a reluctance to engage in the intensity of the treatment program. Participant NC2 reported that “although [she] wanted to get better, [she was] not ready or willing” to perform the behavioral tasks required. Participant NC3 stated that he felt “very depressed” and that the treatment “would be too much for [him] at this time.”

Interestingly, not all of the participants who left the treatment program early had unfavorable treatment outcomes. Of the 5 participants who left the program prior to the two-week point, 2 of the participants appeared to experience significant treatment gains and good overall treatment outcomes. As illustrated in Table 8, participant NC 4 experienced a drop in *Y-BOCS* of 22 points, representing approximately a 67% change in overall *Y-BOCS* and substantial improvement in OCD symptoms. Participant NC 5 also experienced a substantial improvement in OCD symptoms, as evidenced by a 23-point decrease in *Y-BOCS* from admission to discharge, representing an 88% change in overall *Y-BOCS*. Moreover, in conjunction with improvements in OCD symptoms, participants NC4 and NC5 experienced substantial reduction in depressive symptoms as evidenced by substantial decreases in *BDI* scores from admission to discharge. These data, although limited due to the small sample, may indicate that the arbitrary designation of “treatment dropout,” as defined by leaving the program prior to 2 weeks, may not have been appropriate for this particular sample.

Table 8

Descriptive Data for Non-Completing Participants (N = 5)*

Participant	Length of Treat ment (days)	Y-BOCS score		BDI score		Total TSRQ	Intrinsic Subscale	Extrinsic Subscale
		Admission	Discharge	Admission	Discharge			
<u>Non- Responders</u>								
NC 1	9	24	28	12	18	51	3.0	3.8
NC 2	2	26	22	17	10	33	5.0	1.8
NC 3	1	30	29	21	31	49	4.0	2.8
<i>Mean (SD)</i>	<i>4.0 (4.4)</i>	<i>26.7 (3.1)</i>	<i>26.3 (3.8)</i>	<i>16.6 (5.2)</i>	<i>20.0 (10.5)</i>	<i>44.3 (9.9)</i>	<i>4.0 (1.0)</i>	<i>2.8 (1.0)</i>
<u>Responders**</u>								
NC 4	8	33	11	35	13	46	4.0	2.4
NC 5	13	26	3	18	4	39	4.0	2.0
<i>Mean (SD)</i>	<i>10.5 (3.5)</i>	<i>29.5 (4.5)</i>	<i>7.0 (5.7)</i>	<i>26.5 (8.5)</i>	<i>8.5 (4.5)</i>	<i>42.5 (4.9)</i>	<i>4.0 (0.0)</i>	<i>2.2 (.28)</i>

Note. * Non-completion of the treatment program is defined by exiting the program prior to 2 weeks.

** Responder to treatment is defined by >25% decrease in Y-BOCS scores from admission to discharge.

Discussion and Interpretation of Results for Question Four:

The final research question for the study assessed the extent to which level of motivation was related to treatment dropout for individuals receiving treatment for OCD. Given the small number of individuals who dropped out of the treatment prematurely (i.e., 5 patients or 3.5% of the sample), descriptive data were presented in lieu of statistical analyses involving prediction (i.e., logistic regression). Although generalization from these results to the population is not possible with the limited number of treatment dropouts, a close examination of the descriptive data does reveal some information that may assist in future studies.

Of the five patients who left the program prior to the two-week point, two patients experienced significant treatment gains. One participant reported a drop in *Y-BOCS* score of 22 points, representing approximately a 67% reduction in OCD symptoms. Another patient experienced a 23-point decrease in *Y-BOCS* score from admission to discharge, representing an 88% change in overall *Y-BOCS* score, reflecting a substantial reduction in symptoms. Although these two patients may have left treatment prior to two weeks, they do not necessarily represent “treatment dropouts;” rather they may represent individuals who were able to benefit from the treatment rapidly and thus leave prior to two weeks due to positive experiences.

Of the 5 patients who left the program prior to the two-week point, 3 patients did not experience substantial reductions in their OCD symptoms, as defined by a greater than 25% decrease in *Y-BOCS* scores. Two patients experienced minor reductions in symptoms, while one patient experienced an increase in symptoms. Furthermore, two of the three dropout patients appeared to have initial levels of overall motivation that were

above average for the sample. Interestingly, despite their reportedly above average levels of overall motivation at admission, these patients also reported substantial increases in their depressive symptoms from the time of admission to the time of discharge. It may be the case that although these patients reported above average levels of overall motivation at intake, their motivation was undermined by an abrupt intensification of depressive symptoms soon after admission. The contributing factors to this increase in depressive symptoms are unclear at this time and warrant further investigation. It may be the case that a select subgroup of OCD patients experiences a significant sudden rise in depressive symptoms when faced with the overwhelming task of confronting fearful stimuli during exposure sessions in an intensive treatment setting. Other researchers (Hayes, Beevers, Feldman, Laurenceau, & Perlman, 2005) discovered a similar symptom pattern in a study of exposure-based cognitive therapy for depression. A discontinuous pattern of change was discovered in which the course of therapy was characterized by *depression spikes*, large increases in depressive symptoms during the exposure phase of therapy. Moreover, these depression spikes were often followed by a decrease in anxiety and depressive symptoms. It is possible that these *depression spikes* also occur in the course of exposure-based treatment for OCD, and may contribute to treatment dropout.

CHAPTER 4
CONCLUSIONS, TREATMENT IMPLICATIONS, LIMITATIONS,
AND FUTURE DIRECTIONS

Conclusions

This study investigated the role of motivation in the treatment of individuals hospitalized for severe OCD, specifically, the extent to which an individual's motivation for treatment and motivational orientation (intrinsic or extrinsic motivation) predict OCD treatment response. Results of this study are generally consistent with past research highlighting the importance of motivation as a factor related to treatment outcome. Although the results of this study confirm that motivation plays a significant role in the treatment of individuals with severe OCD, the present findings indicate that the relationship of motivation to OCD treatment outcome may be more complex than documented in previous studies in health-related domains.

The first research question in the present study explored the extent to which level of overall motivation for treatment predicted treatment outcome for patients receiving intensive therapy for OCD in a residential treatment setting. Contrary to previous findings in health-related domains, results of this study do not support the hypothesis that a higher level of *overall motivation* for treatment at admission is predictive of OCD treatment response. However, results of the present study indicate that an individual's *motivational orientation* (i.e., baseline level of intrinsic or extrinsic motivation) can serve as a significant predictor OCD treatment response.

The second research question investigated the extent to which *level of intrinsic motivation* predicted treatment outcome for patients receiving intensive therapy for OCD. It was hypothesized that level of intrinsic motivation would predict treatment outcome when controlling for length of treatment, baseline level of OCD symptoms, and baseline level of depressive symptoms. Results indicate that the relationship between intrinsic motivation and treatment outcome is complex and dependent upon the level of severity of OCD symptoms at the outset of treatment. More specifically, patients entering treatment with a high level of OCD symptom severity and a low level of intrinsic motivation have poorer treatment outcomes, whereas patients with a high level of symptom severity who also reported a high level of intrinsic motivation appear to have better treatment outcomes. In other words, a high level of intrinsic motivation at the outset of treatment may be a particularly important ingredient in promoting positive treatment outcome when OCD symptoms are severe.

The third research question investigated the extent to which *level of extrinsic motivation* predicted treatment outcome for patients receiving intensive therapy for OCD. In the present study the level of extrinsic motivation was a significant predictor of OCD treatment outcome when controlling for length of treatment, baseline level of OCD symptoms, and baseline depressive symptoms. Furthermore, a higher level of extrinsic motivation was associated with poorer OCD treatment outcome. This finding is consistent with studies in the substance-abuse and health-related domains where extrinsic motivation (i.e., external pressure) is a common predictor of poor treatment response. The present study extends these findings to the realm of mental health treatment, specifically OCD treatment. More research is needed to investigate the specific intrinsic

and extrinsic motivating factors experienced by patients and the mechanism by which these factors enhance or undermine treatment.

The final research question assessed the extent to which level of motivation was related to treatment dropout for individuals receiving intensive treatment for OCD. Given the small number of patients in this study who dropped out of treatment prematurely (i.e., 5 patients or 3.5% of the sample), the generalizability of the results pertaining to this question are limited. Nevertheless, descriptive analysis revealed that an abrupt increase in depressive symptoms occurred immediately following admission with patients who left the program prematurely. Future research with larger sample sizes is needed to investigate what factors prompt some patients to drop out of treatment, prior to when the actual interventions have begun.

Treatment Implications

The findings of this study have important treatment implications pertaining to efforts to maximize OCD treatment response. Enhancing response to effective treatments is a priority for clinical research. Recently, researchers and clinicians have identified patients' ambivalence as a significant obstacle to the effective treatment of anxiety and OCD (Tolin & Maltby, 2008; Westra & Dozois, 2008). Research with patients with anxiety disorders such as panic disorder (Dozois, Westra, Collins, Fung, & Garry, 2004) and OCD (Franklin & Foa, 2002) suggests that many individuals enter treatment with significant reservations about engaging in therapy. Furthermore, many patients with OCD have strong and mixed reactions to the idea of engaging in treatment involving exposure and response prevention techniques (ERP). Indeed, many OCD patients refuse

ERP due to fear or apprehension about the difficulty and intensity of ERP (Maltby & Tolin; 2005). In many respects, this is not surprising, as ERP is the phenomenological antithesis to the maladaptive coping strategy that most OCD patients have used (i.e., avoiding anxiety provoking situations and performing extensive rituals to reduce their anxiety). As such, individuals with OCD may enter treatment with varying levels of ambivalence about change and motivation to address their symptoms. Furthermore, individuals come to treatment with differing reasons for addressing their OCD symptoms. Some of these reasons for change are more internally motivated (e.g., “I need to change because I envision a much better life for myself without my OCD symptoms.”), while other reasons may be more externally motivated (e.g., “I am here at treatment because my wife said she would leave me if I refused treatment.”). Findings from the present study indicate that reasons for initiating treatment, or the patient’s motivational orientation (i.e., level of intrinsic and extrinsic motivation), play a role in determining the extent to which they benefit from intensive OCD treatment.

The present study suggests that assessing an individual’s level of intrinsic and extrinsic motivation for OCD treatment should be viewed as an essential component in the treatment process. From a clinical standpoint, identifying an individual’s motivational orientation at the outset of treatment may help to maximize treatment gains and minimize negative treatment experiences. For example, individuals who are deemed to be more extrinsically motivated may benefit from interventions that target increasing self-motivating factors (e.g., Motivational Interviewing (MI; Miller & Rollnick, 2002) prior to engaging in exposure tasks). A primary goal of MI is to increase intrinsic motivation to change -- that which arises from personal goals and values rather than from

external sources such as the attempts of others to persuade, cajole, or coerce the person to change. MI has become an effective approach for promoting behavior change, initially in the area of alcohol and other substance abuse, and more recently for a wider range of problems. It is a client-centered (Rogers, 1951) method that neither persuades nor coerces patients to change, but instead attempts to explore and resolve their ambivalence, allowing them to decide for themselves whether to change. MI works on the assumptions that many patients who seek therapy are ambivalent about change, and that motivation may ebb and flow during the course of therapy. A therapist utilizing MI techniques works toward creating an atmosphere in which the client, rather than the therapist, becomes the advocate for change as well as the primary agent for change (Arkowitz & Miller, 2008). For patients who are identified as having a low level of intrinsic motivation and a high level of extrinsic motivation, the results of this study indicate that integrating motivational enhancement interventions (e.g., MI) may be particularly important for OCD treatment success.

Limitations of Study

Several limitations should be noted when interpreting the results of this study. Generalizability is limited by several factors. First, participants in this study represent a select subset of OCD patients with a history of severe and treatment-refractory OCD, and thus may not have been representative of individuals with OCD in general clinical practice. Many of the patients who attend the OCDI treatment program have tried numerous forms of treatment (i.e., psychotropic medications and various trials of psychotherapy) without having experienced successful outcomes. Therefore, this sample

represents a specific subset of OCD sufferers whose findings may not be generalizable to the typical OCD patient. Furthermore, given the treatment refractoriness of this population, it is possible that motivation may have played a substantially different role in the treatment process when compared to a less severe and less treatment-refractory OCD population. For example, one would expect that prior unsuccessful experiences with OCD treatment may have influenced pre-treatment level of motivation. Additionally, there may have been other factors inherent to this particular treatment-refractory population (i.e., higher incidence of delusional beliefs, lack of insight into symptoms, higher incidence of cognitive deficits) which may have influenced motivation, thereby making the results less generalizable.

Second, the treatment in this study may not reflect treatment as it typically occurs in the community. The OCDI is a comprehensive, intensive, and highly-structured residential treatment setting where patients are challenged to confront their symptoms from the time they awaken until they sleep (Osgood-Hynes, Riemann, Björgvinsson, 2004). Standard cognitive-behavioral treatment for OCD is typically conducted in a less structured and less intensive outpatient setting consisting of weekly office visits to a therapist (Abramowitz, Schwartz, & Furr, 2003). The role of motivation in OCD treatment response may change given the treatment setting and the intensity of the therapy delivered. For example, intrinsic motivation may be more important in the outpatient treatment setting where more emphasis is placed on self-directed homework assignments between sessions.

The results of this study may have been unduly influenced by the timing and methods used for assessing motivation. As mentioned previously, currently there is no

measure that assesses motivation for OCD treatment. Therefore, the *Treatment Self-Regulation Questionnaire*, which was adapted to assess this construct, was developed to evaluate motivation in studies investigating health-related issues (e.g., smoking cessation, diet improvement, regular exercising, and drinking responsibly); prior to this study the *TSRQ* had not been applied to the treatment of anxiety or OCD. Although the results of this study failed to indicate that level of overall motivation is a significant predictor of OCD treatment response, it is possible that the *Treatment Self-Regulation Questionnaire* was not sensitive to the construct being assessed, and therefore did not adequately capture motivation for OCD treatment. For example, one item on the *TSRQ* states, “I have remained in treatment because I would have felt like a failure if I didn’t.” Participants were asked to rate this item on a Likert-type scale of 1-7 with higher scores indicating higher motivation. One might argue that while this question may measure motivational orientation, it does not necessarily measure the specific goal of alleviating OCD symptoms. Therefore, the *TSRQ* may serve as a more sensitive measure for assessing the type or quality of motivation (i.e., intrinsic or extrinsic), rather than for evaluating the overall level of motivation for OCD treatment. Future studies may benefit from use of a measure designed to assess motivation as it applies specifically to OCD.

This study also has limitations inherent in the use self-report questionnaires. Each measure used in this study demonstrated adequate validity and reliability; however, by definition these self-report measures assess what participants believe to be true or what they are willing to communicate. The exclusive use of a self-report measure to assess motivation could have introduced response bias, particularly given the social context and timing in which patients were asked to rate their level of motivation (i.e., upon admission

to the OCDI program). There are a number of reasons why self-ratings of motivation may be intentionally or unintentionally biased during the admission process, such as social desirability response bias, which has not been examined to date. The *TSRQ* may be susceptible to a social desirability response bias particularly when it asks respondents to endorse items reflecting unpopular self-perceptions (e.g., “I have remained in treatment because of the amount of money I have invested in this program.”), as well as desirable attitudes (e.g., “I have remained in treatment because it is a challenge to accomplish my goal.”). Given that patients are administered the *TSRQ* at the outset of treatment, they may be invested in portraying themselves as eager to address their symptoms and as fully invested in the program. Future studies may benefit from incorporating an additional clinician-rated measure of the patient’s level of motivation for treatment as a supplement to self-report measures.

Moreover, the participant’s self-assessment of motivation at admission may differ significantly from his or her assessment after participating fully in the treatment for a period of time. Some researchers have suggested that motivation is by no means a static construct; rather it involves a dynamic process which may wax and wane over the course of treatment (Deci & Ryan, 2000; Miller & Rollnick, 2002; Prochaska & Norcross, 2002). Of note, the measure used in this study to assess motivation was administered at the outset of treatment and prior to the implementation of interventions. Therefore, the findings of this study may be more reflective of the patient’s ‘motivation to enter treatment’ rather than his or her ‘motivation to engage in treatment.’

Future Directions

Understanding, enhancing, and sustaining motivation for OCD treatment are critical challenges that need to be addressed in efforts to improve the effectiveness of existing OCD interventions. Findings of the present study suggest that motivation is a key component in the OCD treatment process and warrants further investigation. Many questions remain unexplored regarding the mechanisms by which motivation influences the OCD treatment process. Does motivation for OCD treatment fluctuate over the course of treatment? Do specific patterns of change lead to better or worse treatment outcomes? For example, some individuals may enter treatment with a higher level of extrinsic motivation; however, during the first few weeks of treatment they may experience a shift in their motivational orientation, resulting in a higher level of intrinsic motivation and a lower level of extrinsic motivation. Future studies would benefit from investigating the longitudinal course of motivation during the process of treatment.

There may be other relational factors that this study did not investigate which are intimately tied to a patient's level of motivation and treatment outcome. For example, many psychotherapy studies have demonstrated that a good *therapeutic alliance* predicts a favorable outcome (Constantino, Castonguay, & Schut, 2002; Horvath, 1994; Roth & Fonagy, 1996; Waddington, 2002), yet the therapeutic alliance has yet to be fully examined in regard to OCD treatment. It may be the case that the quality of the therapeutic alliance is related to motivation for OCD treatment. Indeed, one might expect that the therapist's ability to enhance motivation through the use of the therapeutic alliance would be associated with better treatment outcome. Recent research suggests

that the way a therapist responds to a patient's ambivalence during therapy is critical to treatment outcome (Huppert, Barlow, Gorman, Shear, & Woods, 2006). In situations in which a strong therapeutic alliance has been established, the patient with OCD may feel more trusting in the treatment process and more motivated to comply with difficult ERP tasks. Future studies which explore the relationship between the therapeutic alliance and motivation for OCD treatment may shed light on the role of relational factors in OCD treatment.

Patients' *expectancies of treatment effectiveness* is another variable that has proven to be a powerful predictor of psychotherapy outcome (Kirsch, 1999; Sotsky et al., 1991; Weinberger & Eig, 1999). It is reasonable to assume that an individual's motivation for OCD treatment would be related to how effective he or she believes the treatment will be. It is unlikely that an individual would have a high level of motivation if he or she did not feel that the treatment would reduce symptoms. As mentioned previously, exposure and response prevention therapy is often experienced by the patient as aversive, and requires that patients confront their worst fears. It requires a 'leap of faith' in which the patient has to endure substantial distress in order to experience positive outcome. Patients must have some level of trust in the treatment process and hope that the therapy will work. Given the significant amount of literature suggesting that patients' *treatment expectations* remain important contributors to psychotherapy outcome (for a review see Greenberg, Constantino, & Bruce, 2006), future research should consider exploring this crucial factor and how it relates to motivation for OCD treatment.

This study also highlights the importance of developing a valid measure to assess motivation for OCD treatment. As mentioned previously, the present study adopted a measure used in health-related studies to assess motivation for treatment (i.e., the *Treatment Self-Regulation Questionnaire*). The motivation to confront challenges specific to OCD may be qualitatively different than the motivation required in the treatment of health-related problems. For example, in OCD treatment a patient who has contamination fears may be asked to voluntarily contaminate his or her hands by touching items in a wastebasket and resisting the urge to wash. The motivation required to initiate and engage in such aversive tasks may differ from the type of motivation required to abstain from alcohol or smoking. Although the *TSRQ* was adequate for the present study, future studies would benefit from a measure specifically designed to gauge motivation for OCD treatment.

Findings from this study will help in the development of improved interventions for patients who are non-responsive to empirically supported therapeutic interventions (CBT and ERP). As mentioned previously, despite strong evidence that OCD can be effectively treated with ERP and CBT, many individuals do not benefit from these interventions. Once a clearer understanding emerges of the role and mechanisms by which motivation is related to the treatment process, interventions aimed at facilitating and enhancing motivation for ERP can be developed.

APPENDIX A

OCD INSTITUTE ADMISSION DEMOGRAPHIC QUESTIONNAIRE

OCD INSTITUTE

115 Mill Street, Belmont, MA 02478

PATIENT INFORMATION

NAME _____ SS# _____
ADDRESS _____ DOB _____ Age _____
City, State, Zip _____ Sex M F Marital Status S / M / D / W
Height _____ Weight _____ Occupation: _____
TELEPHONE: (HOME) _____ (WORK) _____
(CELL) _____
Email Address _____
Living with _____
Education _____
(Highest Degree Completed)

EMERGENCY CONTACT: Name and phone number

Referred by:

Current Treators (please include psychiatrist, therapist, primary care physician, etc.)

Name Role Phone

Name Role Phone

Name Role Phone

Insurance Information

PLEASE INCLUDE PHOTOCOPY OF FRONT AND BACK OF ID CARD

Insurance Company Name _____ Phone _____

Name of Insured _____ Group Number _____

ID Number _____ Policy

Number _____

Insured's DOB _____ Insured's SS # _____

Insured's Place of

Employment _____

Contact Person _____ Phone _____
Coverage for Psychiatric Services (inpatient and
outpatient) _____

Will you be self-paying? **Y/N**

Please include a photocopy of your insurance card (front and back)

I authorize members of the OCD Institute staff to speak with my insurance company and
treators listed above in service of my application to the program

Patient's Signature Date

Past Medical History

ALLERGIES

Do you have allergies to any medication? Yes / No

If so, what medication? _____

If so, what type of reaction did you have? _____

MEDICAL ILLNESSES

Have you in the past or do you now have any medical illnesses?

Yes / No

What type of illness?

Do you have difficulty with urinary/fecal incontinence? _____

SURGERY

Have you ever had surgery? Yes / No

Type and dates of surgery

Past Psychiatric History

HOSPITALIZATIONS

Have you ever been hospitalized for a psychiatric illness? Yes / No

If so, what was the diagnosis and when were you hospitalized?

OUTPATIENT PSYCHIATRIC TREATMENT

Have you been in therapy for a psychiatric condition? Yes / No

If so, where and when? _____

What type of therapy did you have? (E.g., medication, psychodynamic, behavioral,
other): (if behavioral, please rate on a scale of 0-10 how successful it
was): _____

Medication History

What medications are you presently taking? (Include medical and psychotropic medications, aswell as dosages for all)

Have you used illegal drugs? Yes ___ No ___
Are you using them now? Yes ___ No ___
If so, what kinds of drugs and when (how much?)

Do you drink alcohol? Yes/No
If so, how much?

Has anyone considered you an alcoholic or drug abuser?

Family History

Has anyone in your family ever been diagnosed with a psychiatric illness? Yes/No
Explain:

Has anyone in your family attempted suicide?

Marital Status: Single ___ Married ___ Partner ___ Separated ___ Divorced ___

If married, or with a partner: How long? _____

Husband/Wife/Partner's Age _____

Occupation of Husband/Wife/Partner _____

If separated/divorced: Date _____

Reason: _____

Children: Names/Ages:

Referral

What types of obsessive-compulsive behaviors do you have?

At what age did the obsessions or compulsions begin?

What specific situations or objects trigger your compulsive rituals or obsessions?

What thoughts, images or impulses trigger your compulsive rituals or obsessions?

Is there anything you avoid doing or thinking?

TRAUMA HISTORY:

1. Do you have a history of trauma? (I.e., physical sexual abuse)

2. Has anyone ever diagnosed you with Post-Traumatic Stress Disorder (PTSD)?

3. Do you engage in self-injurious behavior? (I.e. cutting, burning)

JOB HISTORY

List the jobs you have held and their dates. Then note which aspects of each job were the most pleasurable for you (e.g., working with people, type of work, etc.) and which aspects gave you the most anxiety or trouble.

Dates	Job	Titles	Liked	Disliked
-------	-----	--------	-------	----------

Below, please add anything not covered in this questionnaire that you feel could help us understand your problem. Please include why you want to come to the program (as opposed to why others may want you to come).

If there is a family member currently living with you, please have them comment on their observations of your behaviors, the ways in which they may accommodate your OCD and how your OCD affects the household.

Legal History:

1. Has anyone ever reported you to the police? Yes _____ No _____

2. Have you ever been arrested? Yes _____ No _____

If Yes, for what?

3. Have legal charges ever been brought against you? Yes _____ No _____

4. Have you ever been involved with the legal system in any way (e.g., probation, parole, hearing pending, etc)? Yes _____ No _____

If yes, please explain briefly here.

5. Are you currently involved with the legal system in any way (e.g., probation, parole, hearing pending, etc)? Yes _____ No _____

If yes, please explain briefly here.

**APPROVED
MCLEAN HOSPITAL
IRB DATED 6/22/07**

Thank you for taking the time to complete the following information. Completion of the following questionnaires serves two important functions. Foremost, it helps the admitting team to understand your symptoms for consideration for admission to the OCD Institute. Secondly, if you give permission, we will combine this information with that of other applicants to conduct research studies to learn more about the nature of OCD and the components of treatment success. If you would like to have your information included in a research study, please check the box below. If your information is included, your confidentiality will be maintained and no identifying data for you will be included in any publications or presentations.

Please check one of the boxes below:

Yes, I agree to have my information included for future research studies. I understand that no identifying information about me will be included in this research.

No, do not include my information in the research database.

Name

Date

APPENDIX B

PARTNERS ETHNICITY QUESTIONNAIRE

How would you describe your ethnicity/ race? You may select all that apply.

Hispanic or Latino

A person of Cuban, Mexican, Puerto Rican, South or Central American, or other Spanish culture or origin regardless of race.

White (Not Hispanic or Latino)

A person having origins in any of the original peoples of Europe, the Middle East, or North Africa.

Black or African American (Not Hispanic or Latino)

A person having origins in any of the black racial groups in Africa.

Asian (Not Hispanic or Latino)

A person having origins in any of the original peoples of the Far East, Southeast Asia, or the Indian subcontinent including, for example Cambodia, China, India, Japan, Korea, Malaysia, Pakistan, the Philippine Islands, Thailand, and Vietnam.

American Indian or Alaska Native (Not Hispanic or Latino)

A person having origins in any of the original peoples of North or South America (including Central America), and who maintain tribal affiliation or community attachment.

Native Hawaiian or Other Pacific Islander (Not Hispanic or Latino)

A person having origins in any of the original peoples of Hawaii, Guam, Samoa, or other Pacific Islands.

APPENDIX C

YALE-BROWN OBSESSIVE COMPULSIVE SCALE (Y-BOCS)

"I am now going to ask several questions about your obsessive thoughts." [Make specific reference to the patient's target obsessions.]

1. TIME OCCUPIED BY OBSESSIVE THOUGHTS

0 = None.

1 = Mild, less than 1 hr/day or occasional intrusion.

2 = Moderate, 1 to 3 hrs/day or frequent intrusion.

3 = Severe, greater than 3 and up to 8 hrs/day or very frequent intrusion.

4 = Extreme, greater than 8 hrs/day or near constant intrusion.

Q: How much of your time is occupied by obsessive thoughts? [When obsessions occur as brief, intermittent intrusions, it may be difficult to assess time occupied by them in terms of total hours. In such cases, estimate time by determining how frequently they occur. Consider both the number of times the intrusions occur and how many hours of the day are affected. Ask: 1 How frequently do the obsessive thoughts occur? [Be sure to exclude ruminations and preoccupations which, unlike obsessions, are ego-syntonic and rational (but exaggerated).]

- 0
- 1
- 2
- 3
- 4

1b. OBSESSION-FREE INTERVAL (not included in total score)

0 = No symptoms.

1 = Long symptom-free interval, more than 8 consecutive hours/day symptom-free.

2 = Moderately long symptom-free interval, more than 3 and up to 8 consecutive hours/day symptom-free.

3 = Short symptom-free interval, from 1 to 3 consecutive hours/day symptom-free.

4 = Extremely short symptom-free interval, less than 1 consecutive hour/day symptom-free.

Q: On the average, what is the longest number of consecutive waking hours per day that you are completely free of obsessive thoughts? [If necessary, ask: 1 What is the longest block of time in which obsessive thoughts are absent?]

- 0
- 1
- 2
- 3
- 4

2. INTERFERENCE DUE TO OBSESSIVE THOUGHTS

0 = None.

1 = Mild, slight interference with social or occupational activities, but overall performance not impaired.

2 = Moderate, definite interference with social or occupational performance, but still manageable.

3 = Severe, causes substantial impairment in social or occupational performance.

4 - Extreme, incapacitating.

Q: How much do your obsessive thoughts interfere with your social or work (or role) functioning? Is there anything that you don't do because of them? [If currently not working determine how much performance would be affected if patient were employed.]

- 0
- 1
- 2
- 3
- 4

3. DISTRESS ASSOCIATED WITH OBSESSIVE THOUGHTS

0 = None

1 = Mild, not too disturbing

2 = Moderate, disturbing, but still manageable

3 = Severe, very disturbing

4 = Extreme, near constant and disabling distress

Q: How much distress do your obsessive thoughts cause you? [In most cases, distress is equated with anxiety; however, patients may report that their obsessions are "disturbing" but deny "anxiety." Only rate anxiety that seems triggered by obsessions, not generalized anxiety or associated with other conditions.]

- 0
- 1
- 2
- 3
- 4

4. RESISTANCE AGAINST OBSESSIONS

0 = Makes an effort to always resist, or symptoms so minimal doesn't need to actively resist

1 = Tries to resist most of the time

2 = Makes some effort to resist

3 = Yields to all obsessions without attempting to control them, but does so with some reluctance

4 = Completely and willingly yields to all obsessions

Q: How much of an effort do you make to resist the obsessive thoughts? How often do you try to disregard or turn your attention away from these thoughts as they enter your mind? [Only rate effort made to resist, not success or failure in actually controlling the obsessions. How much the patient resists the obsessions may or may not correlate with his/her ability to control them. Note that this item does not directly measure the severity of the intrusive thoughts; rather it rates a manifestation of health, i.e., the effort the patient makes to counteract the obsessions by means other than avoidance or the performance of compulsions. Thus, the more the patient tries to resist, the less impaired is this aspect of his/her functioning. There are "active" and "passive" forms of resistance. Patients in behavioral therapy may be encouraged to counteract their obsessive symptoms by not struggling against them (e.g., "just let the thoughts come; passive opposition) or by intentionally bringing on the disturbing thoughts. For the purposes of this item, consider use of these behavioral techniques as forms of resistance. If the obsessions are minimal, the patient may not feel the need to resist them. In such cases, a rating of "0" should be given.]

- 0
- 1
- 2
- 3
- 4

5. DEGREE OF CONTROL OVER OBSESSIVE THOUGHTS

0 = Complete control.

1 = Much control, usually able to stop or divert obsessions with some effort and concentration. 2 = Moderate control, sometimes able to stop or divert obsessions.

3 = Little control, rarely successful in stopping or dismissing obsessions, can only divert attention with difficulty.

4 = No control, experienced as completely involuntary, rarely able to even momentarily alter obsessive thinking.

Q: How much control do you have over your obsessive thoughts? How successful are you in stopping or diverting your obsessive thinking? Can you dismiss them? [In contrast to the preceding item on resistance, the ability of the patient to control his obsessions is more closely related to the severity of the intrusive thoughts.]

- 0
- 1
- 2
- 3
- 4

"The next several questions are about your compulsive behaviors." [Make specific reference to the patient's target compulsions.]

6. TIME SPENT PERFORMING COMPULSIVE BEHAVIORS

0 = None

1 = Mild (spends less than 1 hr/day performing compulsions), or occasional performance of compulsive behaviors.

2 = Moderate (spends from 1 to 3 hrs/day performing compulsions), or frequent performance of compulsive behaviors.

3 = Severe (spends more than 3 and up to 8 hrs/day performing compulsions), or very frequent performance of compulsive behaviors.

4 = Extreme (spends more than 8 hrs/day performing compulsions), or near constant performance of compulsive behaviors (too numerous to count).

Q: How much time do you spend performing compulsive behaviors? [When rituals involving activities of daily living are chiefly present, ask:] How much longer than most people does it take to complete routine activities because of your rituals? [When compulsions occur as brief, intermittent behaviors, it may be difficult to assess time spent performing them in terms of total hours. In such cases, estimate time by determining how frequently they are performed. Consider both the number of times compulsions are performed and how many hours of the day are affected. Count separate occurrences of compulsive behaviors, not number of repetitions; e.g., a patient who goes into the bathroom 20 different times a day to wash his hands 5 times very quickly, performs compulsions 20 times a day, not 5 or $5 \times 20 = 100$. Ask:] How frequently do you perform compulsions? [In most cases compulsions are observable behaviors (e.g., hand washing), but some compulsions are covert (e.g., silent checking).]

- 0
- 1
- 2
- 3
- 4

6b. COMPULSION-FREE INTERVAL (not included in total score)

0 = No symptoms.

1 = Long symptom-free interval, more than 8 consecutive hours/day symptom-free.

2 = Moderately long symptom-free interval, more than 3 and up to 8 consecutive hours/day symptom-free.

3 = Short symptom-free interval, from 1 to 3 consecutive hours/day symptom-free.

4 = Extremely short symptom-free interval, less than 1 consecutive hour/day symptom-free.

Q: On the average, what is the longest number of consecutive waking hours per day that you are completely free of compulsive behavior? [If necessary, ask:] What is the longest block of time in which compulsions are absent? different times a day to wash his hands 5 times very quickly, performs compulsions 20 times a day, not 5 or $5 \times 20 = 100$. Ask:] How frequently do you perform compulsions? In most cases compulsions are observable behaviors(e.g., land washing), but some compulsions are covert (e.g., silent checking).]

- 0
- 1
- 2
- 3
- 4

7. INTERFERENCE DUE TO COMPULSIVE BEHAVIORS

0 = None

1 = Mild, slight interference with social or occupational activities, but overall performance not impaired

2 = Moderate, definite interference with social or occupational performance, but still manageable

3 = Severe, causes substantial impairment in social or occupational performance

4 = Extreme, incapacitating

Q: How much do your compulsive behaviors interfere with your social or work (or role) functioning? Is there anything that you don't do because of the compulsions? [If currently not working determine how much performance would be affected if patient were employed.]

- 0
- 1
- 2
- 3
- 4

8. DISTRESS ASSOCIATED WITH COMPULSIVE BEHAVIOR

0 = None

1 = Mild only slightly anxious if compulsions prevented, or only slight anxiety during performance of compulsions

2 = Moderate, reports that anxiety would mount but remain manageable if compulsions prevented, or that anxiety increases but remains manageable during performance of compulsions

3 = Severe, prominent and very disturbing increase in anxiety if compulsions interrupted, or prominent and very disturbing increase in anxiety during performance of compulsions

4 = Extreme, incapacitating anxiety from any intervention aimed at modifying activity, or incapacitating anxiety develops during performance of compulsions

Q: How would you feel if prevented from performing your compulsion(s)? [Pause] How anxious would you become? [Rate degree of distress patient would experience if performance of the compulsion were suddenly interrupted without reassurance offered. In most, but not all cases, performing compulsions reduces anxiety. If, in the judgement of the interviewer, anxiety is actually reduced by preventing compulsions in the manner described above, then asked: How anxious do you get while performing compulsions until you are satisfied they are completed?

- 0
- 1
- 2
- 3
- 4

9. RESISTANCE AGAINST COMPULSIONS

0 = Makes an effort to always resist, or symptoms so minimal doesn't need to actively resist

1 = Tries to resist most of the time

2 = Makes some effort to resist

3 = Yields to almost all compulsions without attempting to control them, but does so with some reluctance

4 = Completely and willingly yields to all compulsions

Q: How much of an effort do you make to resist the compulsions? I Only rate effort made to resist, not success or failure in actually controlling the compulsions. How much the patient resists the compulsions may or may not correlate with his ability to control them. Note that this item does not directly measure the severity of the compulsions; rather it rates a manifestation of health, i.e., the effort the patient makes to counteract the compulsions. Thus, the more the patient tries to resist, the less impaired is this aspect of his functioning. If the compulsions are minimal, the patient may not feel the need to resist them. In such cases, a rating of "0" should be given.]

- 0
- 1
- 2
- 3
- 4

10. DEGREE OF CONTROL OVER COMPULSIVE BEHAVIOR

1 = Much control, experiences pressure to perform the behavior but usually able to exercise voluntary control over it.

2 = Moderate control, strong pressure to perform behavior, can control it only with difficulty

3 = Little control, very strong drive to perform behavior, must be carried to completion, can only delay with difficulty

4 = No control. drive to perform behavior experienced as completely involuntary and overpowering, rarely able to even momentarily delay activity

Q: How strong is the drive to perform the compulsive behavior? [Pause] How much control do you have over the compulsions? [In contrast to the preceding item on resistance, the ability of the patient to control his compulsions is more closely related to the severity of the compulsions.]

- 0
- 1
- 2
- 3
- 4

APPENDIX D

TREATMENT SELF-REGULATION QUESTIONNAIRE (TSRQ)

The following questions relate to your reasons for continuing to participate in the OCD treatment program. Different people have different reasons for being in such a program, and we want to know how true each of these reasons is for you. There are two groups of questions. The questions in each group pertain to the sentence that begins that group.

Please indicate how true each reason is for you, using the following scale:

1 2 3 4 5 6 7
not at all true somewhat true very true

A. I have remained in treatment:

- 1. Because I would have felt bad about myself if I didn't.
- 2. Because others would have been angry at me if I didn't.
- 3. Because I would have felt like a failure if I didn't.
- 4. Because I feel like it's the best way to help myself.
- 5. Because people would think I'm a weak person if I didn't.
- 6. Because I do not really feel like I can choose to leave the program.
- 7. Because it is a challenge to accomplish my goal.
- 8. Because of the amount of money I have invested in this program.

B. I have been following the procedures of the program because:

- 9. I believe they help me solve my problem.
- 10. I have been worried that I would get in trouble with the staff if I didn't follow all the guidelines.
- 11. I want others to see that I'm really trying to address my OCD.
- 12. It is important to me that my efforts succeed.
- 13. I feel guilty if I don't comply with all the procedures.

APPENDIX E

BECK DEPRESSION INVENTORY (BDI)

On this questionnaire are groups of statements. Please read each group of statements carefully. Then pick out the one statement in each group which best describes the way you have been feeling the PAST WEEK including today. Circle the number beside the statement you picked. If several statements in the group seem to apply equally well, circle each one. Be sure to read all the statements in each group before making your choice.

1. 0 I do not feel sad.
1 I feel sad.
2 I am sad all the time and can't snap out of it.
3 I am so sad or unhappy that I can't stand it.

2. 0 I am not particularly discouraged about the future.
1 I feel discouraged about the future.
2 I feel I have nothing to look forward to.
3 I feel that the future is hopeless and that things cannot improve.

3. 0 I do not feel like a failure.
1 I feel I have failed more than the average person.
2 As I look back on my life, all I can see is a lot of failures.
3 I feel I am a complete failure as a person.

4. 0 I get as much satisfaction out of things as I used to.
1 I don't enjoy things the way I used to.
2 I don't get real satisfaction out of anything anymore.
3 I am dissatisfied or bored with everything.

5. 0 I don't feel particularly guilty.
1 I feel guilty a good part of the time.
2 I feel quite guilty most of the time.
3 I feel guilty all of the time.

6. 0 I don't feel I am being punished.
1 I feel I may be punished.
2 I expect to be punished.
3 I feel I am being punished.

7. 0 I don't feel disappointed in myself.
1 I am disappointed in myself.
2 I am disgusted with myself.
3 I hate myself.

8. 0 I don't feel I am worse than anybody else.
 1 I am critical of myself for my weaknesses or mistakes.
 2 I blame myself all the time for my faults.
 3 I blame myself for everything bad that happens.
9. 0 I don't have any thoughts of killing myself.
 1 I have thoughts of killing myself, but I would not carry them out.
 2 I would like to kill myself.
 3 I would kill myself if I had the chance.
10. 0 I don't cry any more than usual.
 1 I cry more now than I used to.
 2 I cry all the time now.
 3 I used to be able to cry, but now I can't cry even though I want to.
11. 0 I am no more irritated now than I ever am.
 1 I get annoyed or irritated more easily than I used to.
 2 I feel irritated all the time now.
 3 I don't get irritated at all by the things that used to irritate me.
12. 0 I have not lost interest in other people.
 1 I am less interested in other people than I used to be.
 2 I have lost most of my interest in other people.
 3 I have lost all of my interest in other people.
13. 0 I make decisions about as well as I ever could.
 1 I put off making decisions more than I used to.
 2 I have greater difficulty in making decisions than before.
 3 I can't make decisions at all anymore.
14. 0 I don't feel I look any worse than I used to.
 1 I am worried that I am looking old or unattractive.
 2 I feel that there are permanent changes in my appearance that make me look unattractive.
 3 I believe that I look ugly.
15. 0 I can work about as well as before.
 1 It takes an extra effort to get started at doing something.
 2 I have to push myself very hard to do anything.
 3 I can't do any work at all.

16. 0 I can sleep as well as usual.
 1 I don't sleep as well as I used to.
 2 I wake up 1-2 hours earlier than usual and find it hard to get back to sleep.
 3 I wake up several hours earlier than I used to and cannot get back to sleep.
17. 0 I don't get tired more than usual.
 1 I get tired more easily than I used to.
 2 I get tired from doing almost anything.
 3 I am too tired to do anything.
18. 0 My appetite is no worse than usual.
 1 My appetite is not as good as it used to be.
 2 My appetite is much worse now.
 3 I have no appetite at all anymore.
19. 0 I haven't lost much weight, if any lately.
 1 I have lost more than five pounds.
 2 I have lost more than ten pounds.
 3 I have lost more than fifteen pounds.
- I am purposely trying to lose weight by eating less. Yes____ No____
20. 0 I am no more worried about my health than usual.
 1 I am worried about physical problems such as aches or pains, or upset stomach, or constipation.
 2 I am very worried about physical problems and it's hard to think of much else.
 3 I am so worried about my physical problems that I cannot think about anything else.
21. 0 I have not noticed any recent change in my interest in sex.
 1 I am less interested in sex than I used to be.
 2 I am much less interested in sex now.
 3 I have lost interest in sex completely.

REFERENCES

- Abramowitz, J. S. (2006). *Obsessive-compulsive disorder: Advances in psychotherapy—evidence based practice*. Cambridge, MA: Hogrefe & Huber.
- Abramowitz, J. S. (2004) Treatment of obsessive–compulsive disorder in patients who have comorbid depression, *Journal of Clinical Psychology*, 60, 1133–1141.
- Abramowitz, J.S. (1997). Effectiveness of psychological and pharmacological treatments for obsessive-compulsive disorder: A quantitative review of the controlled treatment literature. *Journal of Consulting and Clinical Psychology*, 65, 44-52.
- Abramowitz, J. S. & Foa, E. B. (2000). Does comorbid major depressive disorder influence outcome of exposure and response prevention for OCD? *Behavior Therapy*, 31, 795-800.
- Abramowitz, J., Franklin, M., Schwartz, S., & Furr, J. (2003). Symptom presentation and outcome of cognitive-behavioral therapy for obsessive-compulsive disorder. *Journal of Consulting and Clinical Psychology*, 71, 1049-1057.
- Abramowitz, J., Franklin, M., Street, G., Kozak, M., & Foa, E. B. (2000). Effects of comorbid depression on response to treatment for obsessive–compulsive disorder, *Behavior Therapy*, 31, 517–528.
- Abramowitz, J. S. & Houts, A. C. (Eds.) (2005). *Concepts and controversies in obsessive-compulsive disorder*. New York, NY: Springer.
- Alonso, P., Menchon, J. M., Pifarre, J., Mataix-Cols, D., Torres, L., Salgado, P., et al. (2001). Long-term follow-up and predictors of clinical outcome in obsessive-compulsive patients treated with serotonin reuptake inhibitors and behavioral therapy. *Journal of Clinical Psychiatry*, 62, 535–540.
- American Psychiatric Association. (2000). *Diagnostic and statistical manual - Text revision (DSM-IV-TR)* (4th ed.). Washington, DC: American Psychiatric Association.
- Araujo, L. A., Ito, L. M., & Marks, I. (1996). Early compliance and other factors predicting outcome of exposure for obsessive-compulsive disorder. *British Journal of Psychiatry*, 169, 747–752.
- Arkowitz, H., & Westra, H. A. (2004). Integrating motivational interviewing and cognitive behavioural therapy in the treatment of depression and anxiety. Special issue of *Journal of Cognitive Psychotherapy*, 18, 337–350.

- Arkowitz, H., Westra, H. A., Miller, W. R., & Rollnick, S. (Eds.). (2008). *Motivational Interviewing in the treatment of psychological problems*. New York: The Guilford Press.
- Ball, S. G., Baer, L., & Otto, M. W. (1996). Symptom subtypes of obsessive-compulsive disorder in behavioral treatment studies: a quantitative review. *Behavior Research and Therapy, 34*, 47-51.
- Beck, A. T., Steer, R.A., Garbin, M. G., (1988) Psychometric properties of the Beck Depression Inventory: Twenty-five years of evaluation. *Clinical Psychology Review, 8*, 77-100.
- Beck, A.T., Ward, C. H., Mendelson, M., Mock, J., & Erbaugh, J. (1961) An inventory for measuring depression. *Archives of General Psychiatry, 4*, 561-571.
- Beitman, B. D., Beck, N. C., Deuser, W. W., Carter, C. S., Davidson, J. R. T., & Maddock, R. J. (1994). Patient stage of change predicts outcome in a panic disorder medication trial. *Anxiety, 1*, 64–69.
- Blais, M. A., Lenderking, W. R., Baer, L., deLorell, A., Peets, K., Leahy, L., Burns, C. (1999). Development and initial validation of a brief mental health outcome measure, *Journal of Personality Assessment, 73*, 359-373.
- Britton, P.C., Williams, G.C., & Conner, K.R. (2008). Self-determination theory, motivational interviewing, and the treatment of clients with acute suicidal ideation. *Journal of Clinical Psychology, 64*, 52-66.
- Burt, T. & Ishak, W. W. (2002). Outcome measurement in mood disorders. In W. W. Ishak, T. Burt & L. I. Sederer (Eds.), *Outcome measurement in psychiatry* (pp. 164–165). Washington (DC): American Psychiatric Publishing.
- Carmin, C. N., Wiegartz, P. S., & Wu, K. D. (2005). Self-directed exposure in the treatment of OCD. In J. S. Abramowitz, & A. C. Houts (Eds.), *Concepts and controversies in obsessive-compulsive disorder* (pp. 347-353). New York, NY: Springer.
- Clark, L. A., & Watson, D. (1991). Tripartite model of anxiety and depression: Psychometric evidence and taxonomic implications. *Journal of Abnormal Psychology, 100*, 316-336.
- Constantino, M. J., Castonguay, L. G., & Schut, A. J. (2002). The working alliance: A flagship for the “scientist-practitioner” model in psychotherapy. In G. S. Tryon (Ed.), *Counseling based on process research: Applying what we know* (pp. 81-131). Boston: Allyn & Bacon.

- Deci, E. L., & Ryan, R. M. (1985). *Intrinsic motivation and self-determination in human behavior*. New York: Plenum.
- Deci, E. L., & Ryan, R. M. (2002). *Handbook of self-determination research*. Rochester, NY: The University of Rochester Press.
- Deci, E.L., & Vansteenkiste, M. (2004). Self-determination theory and basic need satisfaction: Understanding human development in positive psychology. *Ricerche di Psicologia, 27*, 17-34.
- DiClemente, C. C. (1999) Motivation for Change: Implications for Substance Abuse. *Psychological Science, 10*, 209-213.
- Dozois, D.J.A., Westra, H.A., Collins, K.A., Fung, T.S., & Garry, J.K.F. (2004). Stages of change in anxiety: Psychometric properties of the University of Rhode Island Change Assessment (URICA) scale. *Behavior Research and Therapy, 42*, 711-729.
- Drieschner, K. H., Lammers, S. M. M., van der Staak, C. P. F. (2004). Treatment motivation: An attempt for clarification of an ambiguous concept. *Clinical Psychology Review, 23*, 1115-1137.
- Drummond, L. M. (1993). The treatment of severe, chronic, resistant obsessive-compulsive disorder. *British Journal of Psychiatry, 163*, 223-229.
- Erickson, J. R., Stevens, S., McKnight, P., & Figueredo, A. J. (1995). Willingness for treatment as a predictor of retention and outcomes. *Journal of Addictive Diseases, 14*, 135-150.
- Fama, J. & Wilhelm, S. (2005). Formal Cognitive Therapy: A New Treatment for OCD. In J. S. Abramowitz, & A. C. Houts (Eds.), *Concepts and controversies in obsessive-compulsive disorder* (pp. 305-309). New York, NY: Springer.
- Feld, R., Wooside, D. B., Kaplan, A. S., Olmsted, M. P., & Carter, J. C. (2001). Pretreatment motivational enhancement therapy for eating disorders: A pilot study. *International Journal of Eating Disorders, 29*, 393-400.
- Foa, E.B. (2000). Psychosocial treatment of posttraumatic stress disorder. *Journal of Clinical Psychiatry, 61*, 43-48.
- Franklin, M. E., Abramowitz, J. S., Kozak, M. J., Levitt, J., & Foa, E. B. (2000). Effectiveness of exposure and ritual prevention for obsessive compulsive disorder: Randomized compared with non-randomized samples. *Journal of Consulting and Clinical Psychology, 68*, 594-602.

- Franklin, M. E., & Foa, E. B. (1998). Cognitive-behavioral treatment of obsessive compulsive disorder. In P. Nathan & J. Gorman (Eds.) *A guide to treatments that work* (pp. 339-357). Oxford, U.K.: Oxford University Press.
- Geller, J. (2002). Estimating readiness for change in anorexia nervosa: Comparing clients, clinicians, and research assessors. *International Journal of Eating Disorders, 31*, 251-260.
- Gerdner, A., & Holmberg, A. (2000). Factors affecting motivation to treatment in severely dependant alcoholics. *Journal of Studies on Alcohol, 61*, 548–560.
- Goodman W. K., McDougle, C. J., Barr, L. C., Aronson, S.C., & Price, L. H. (1993). Biological approaches to treatment-resistant obsessive–compulsive disorder. *Journal of Clinical Psychiatry, 54*, 16–26.
- Goodman, W. K., Price, L. H., Rasmussen, S. A., Mazure, C., Fleishmann, R. L., Hill, C. L, et al. (1989a). The Yale-Brown obsessive compulsive scale: Development, use, and reliability. *Archives of General Psychiatry, 46*, 1006–1011.
- Goodman, W.K., Price, L.H., Rasmussen, S. A., Mazure, C., Delgado, P., Heninger, G.R., Charney, D.S. (1989b). The Yale-Brown Obsessive Compulsive Scale. II. Validity. *Archives of General Psychiatry, 46*, 1012–1016.
- Greenberg, R. P., Constantino, M. J., & Bruce, N. (2006). Are expectations still relevant for psychotherapy process and outcome? *Clinical Psychology Review, 26*, 657-678.
- Groth-Marnat, G. (2003). *Handbook of psychological assessment* (4th ed.). New York: Wiley.
- Harter, S., & Jackson, B. K. (1992). Trait vs. nontrait conceptualizations of intrinsic/extrinsic motivational orientation. *Motivation and Emotion, 16*, 209–230.
- Hayes, A. M., Beevers, C., Feldman, G., Laurenceau, J-P., & Perlman, C. A. (2005). Avoidance and emotional processing as predictors of symptom change and positive growth in an integrative therapy for depression. Ironson, G., Lundberg, U., & Powell, L. H. (Eds.) Special issue: Positive Psychology. *International Journal of Behavioral Medicine, 111-122*.
- Hettema, J., Steele, J., & Miller, W. R. (2005). Motivational interviewing. *Annual Review of Clinical Psychology, 1*, 91–111.
- Horvath, A. O. (1994). Research on the alliance. In A. O. H. L. S. Greenberg (Ed.), *The working alliance: Theory, research, and practice* (pp. 259–286). New York: Wiley.

- Huppert, J. D., Bufka, L. F., Barlow, D. H., Gorman, J. M., Woods, S. W., & Shear, M. K. (2001). Therapists, therapist variables, and cognitive-behavioral therapy outcome in a multi-center trial for panic disorder. *Journal of Consulting and Clinical Psychology, 69*, 747-755.
- Isenhart, C. E. (1994). Motivational subtypes in an inpatient sample of substance abusers. *Addictive Behaviors, 19*, 463-475.
- Jacobson, N. S., & Truax, P. (1991). Clinical significance: A statistical approach to defining meaningful change in psychotherapy research. *Journal of Consulting and Clinical Psychology, 59*, 12-19.
- Karno, M., Golding, J. M., Sorensen, S. B. & Burnam, M. A. (1988), The epidemiology of obsessive-compulsive disorder in 5 US communities. *Archives of General Psychiatry 45*, 94-99.
- Keeley, M., Storch, E. A., Merlo, L. J., & Geffken, G. R. (2008). Clinical predictors of response to cognitive-behavioral therapy for obsessive-compulsive disorder. *Clinical Psychology Review, 28*, 118-130.
- Kennedy, S., Goggin, K., & Nollen, N. (2004). Adherence to HIV medications: Utility of the theory of self-determination. *Cognitive Therapy & Research, 28*, 611-628.
- Kirsch, I. (Ed.). (1999). How expectancies shape experience. Washington, DC: American Psychological Association.
- Kozak, M. J., Liebowitz, M. R., & Foa, E. B. (2000). Cognitive behavior therapy and pharmacotherapy for obsessive-compulsive disorder: The NIMH sponsored collaborative study. In J. D. Maser (Ed.), *Obsessive-compulsive disorder: Contemporary issues in treatment* (pp. 501-530). Mahwah, NJ: Lawrence Erlbaum Associates.
- Krause, M. S. (1966). A cognitive theory of motivation for treatment. *The Journal of General Psychiatry, 75*, 9-19.
- Levesque, C. S., Williams, G. C., Elliot D., Pickering, M. A., Bodenhamer, B., & Finley, P. J. (2006). Validating the theoretical structure of the Treatment Self-Regulation Questionnaire (TSRQ) across three different health behaviors. *Health Education Research*, doi: 10.1093/her/cyl148.
- Long, C. G., Williams, M., Midgley, M., & Hollin, C. R. (2000). Within-program factors as predictors of drinking outcome following cognitive-behavioral treatment. *Addictive Behaviors, 25*, 573-578.
- Maltby, N., & Tolin, D. F. (2005). A brief motivational intervention for treatment-refusing OCD patients. *Cognitive Behaviour Therapy, 34*, 176-184.

- Markland, D., Ryan, R. A., Tobin, V. J., & Rollnick, S. (2005). Motivational interviewing and self-determination theory. *Journal of Social and Clinical Psychology, 24*, 811-831.
- Marks, I. (1986). *Behavioral Psychotherapy*. Bristol: John Wright.
- Mataix-Cols, D., Marks, I. M., Greist, J. H., Kobak, K. A., & Baer, L. (2002). Obsessive-compulsive symptom dimensions as predictors of compliance with and response to behaviour therapy: Results from a controlled trial. *Psychotherapy and Psychosomatics, 71*, 255–262.
- Meyer, V. (1966). Modification of expectations in cases with obsessional rituals. *Behaviour Research and Therapy, 4*, 273-280.
- Meyer, V., & Levy, R. (1973). Modification of behavior in obsessive-compulsive disorders. In H. E. Adams & P. Unikel (Eds.), *Issues and trends in behavior therapy* (pp. 77–136). Springfield, IL: Charles C. Thomas.
- Miller, W. R., & Rollnick, S. (1991). *Motivational interviewing: Preparing people to change addictive behavior*. New York: Guilford Press.
- Miller, W. R., & Rollnick, S. (2002). *Motivational interviewing: Preparing people for change*. New York: Guilford Press.
- Mineka, S., Watson, D., & Clark, L. A. (1998). Comorbidity of anxiety and unipolar mood disorders. *Annual Review of Psychology, 49*, 377-412.
- Mundt, J., Marks, I., Shear, M., & Greist, J. (2002). The Work and Social Adjustment Scale: a simple measure of impairment in functioning. *British Journal of Psychiatry, 180*, 461–464.
- Nakagami, E., Xie, B., Hoe, M., & Brekke, J. S. (2008). Intrinsic motivation, neurocognition and psychosocial functioning in schizophrenia: Testing mediator and moderator effects. *Schizophrenia Research, 105*, 95-104.
- Narrow, W. E., Rae, D. S., Robins, L. N., & Regier, D. A. (2002). Revised prevalence estimates of mental disorders in the United States. Using a clinical significance criterion to reconcile 2 surveys' estimates. *Archives of General Psychiatry, 59*, 115–123.
- Osgood-Hynes, D., Riemann, B., & Bjorgvinsson, T., (2003). Short-term residential treatment for obsessive-compulsive disorder. *Brief Treatment and Crisis Intervention, 3*, 413-435.

- Pelletier, L. G., Tuson, K. M., & Haddad, N. K. (1997). Client Motivation for Therapy Scale: A measure of intrinsic motivation, extrinsic motivation, and amotivation for therapy. *Journal of Personality Assessment*, *68*, 414–435.
- Pinto, A., Pinto, A. M., Neziroglu, F., & Yaryura-Tobias, J. A. (2007). Motivation to change as a predictor of treatment response in obsessive compulsive disorder. *Annals of Clinical Psychiatry*, *19*, 83-87.
- Prochaska, J. O. (2000). Change at differing stages. In R. E. Ingram and C. R. Snyder (Eds.) *Handbook of Psychological Change: Psychotherapy processes and practices for the 21st Century* (pp. 109-127). New York: Wiley.
- Prochaska, J. O., & DiClemente, C. C. (1982). Transtheoretical therapy: Toward a more integrative model of change. *Psychotherapy: Theory, Research and Practice*, *19*, 276–288.
- Prochaska, J. O., DiClemente, C. C., & Norcross, J. C. (1992). In search of how people change: Applications to addictive behaviors. *American Psychologist*, *47*, 1102-1114.
- Prochaska, J. O., & Norcross, J. C. (2002). Stages of change. In J. C. Norcross (Ed.), *Psychotherapy relationships that work*. New York: Oxford University Press.
- Rasmussen, S. & Eisen, J. (1998). The epidemiology and clinical features of obsessive compulsive disorder. In M. Jenike, L. Baer & W. Minicello (Eds.), *Obsessive Compulsive Disorders: Practical Management* (pp. 12 -43). St Louis, MO: Mosby.
- Riggs, D. S. & Foa, E. B. (1993). Obsessive-compulsive disorder. (In D. H. Barlow (Ed.), *Clinical handbook of psychological disorders, 2nd ed.*, pp. 189—239). New York: Guilford Press.
- Roth, A. D., & Fonagy, P. (1996). What works for whom? *A critical review of psychotherapy research*. London: Guilford.
- Ryan, R. M., & Deci, E. L. (2000). Self-determination theory and the facilitation of intrinsic motivation, social development, and well-being. *American Psychologist*, *55*, 68-78.
- Ryan, R. M., Plant, R. W., & O'Malley, S. (1995). Initial motivations for alcohol treatment: Relations with patient characteristics, treatment involvement and dropout. *Addictive Behaviors*, *20*, 279-297.
- Senecal, C., Nouwen, A., & White, D. (2000). Motivation and dietary self-care in adults

with diabetes: Are self-efficacy and autonomous self-regulation complementary or competing constructs? *Health Psychology, 19*, 452–457.

- Sotsky, S. M., Glass, D. R., Shea, M. T., Pilkonis, P. A., Collins, J. F., & Elkin, I. (1991). Patient predictors of response to psychotherapy and pharmacotherapy: Findings in the National Institute of Mental Health Treatment of Depression Collaborative Research Program. *Journal of Consulting and Clinical Psychology, 64*, 532–539.
- Stanley, M. A. & Turner, S. M. (1995). Current status of pharmacological and behavioral treatment of obsessive-compulsive disorder. *Behavior Therapy, 26*, 163–186.
- Steketee, G., Chambless, D., & Tran, G. (2001). Effects of axis I and II comorbidity on behavior therapy outcome for obsessive-compulsive disorder and agoraphobia. *Comprehensive Psychiatry, 42*, 76–86.
- Steketee, G., Eisen, J. L., Dyke, I., Warshaw, R., Rasmussen, S.A. (1999). Predictors of Course in Obsessive Compulsive Disorder. *Psychiatry Research, 89*, 229–238.
- Steketee, G., Henninger, N., & Pollard, C. A. (2000). Predicting treatment outcome for OCD: Effects of comorbidity. In W. K. Goodman, M. Rudorfer, & J. D. Maser (Eds.), *Obsessive-compulsive disorder: Contemporary issues in treatment* (pp. 257–274). Mahwah, NJ: Lawrence Erlbaum.
- Stewart, S.E., Egan Stack D., Farrell, C., Pauls, D.L., Jenike, M.A. (2005). Effectiveness of intensive residential treatment (IRT) for severe refractory obsessive–compulsive disorder. *Journal of Psychiatric Research, 39*, 603–609.
- Thornicroft, G., Colson, L., & Marks, I.M. (1991). An in-patient behavioural psychotherapy unit. Description and audit. *British Journal of Psychiatry, 158*, 362–367.
- Tierney, D. W., & McCabe, M. P. (2001). The validity of the trans-theoretical model of behaviour change to investigate motivation to change among child molesters. *Clinical Psychology and Psychotherapy, 8*, 176–190.
- Tierney, D. W., & McCabe, M. P. (2002). Motivation for behavior change among sex offenders: A review of the literature. *Clinical Psychology Review, 22*, 113–129.
- Touyz, S., Thornton, C., Rieger, E., George, L., & Beumont, P. (2003). The incorporation of stage of change model in the day hospital treatment of patients with anorexia nervosa. *European Child and Adolescent Psychiatry, 12*, 65–71.
- Vanhoek, K. (2001). Motivatie voor een psychotherapeutische behandeling binnen een verplicht kader [Motivation for psychotherapeutic treatment in a court mandated context]. *Tijdschrift voor Klinische Psychologie, 31*, 86–95.

- Vansteenkiste, M., & Sheldon, K. M. (2006). There's nothing more practical than a good theory: integrating motivational interviewing and self-determination theory. *British Journal of Clinical Psychology, 45*, 63-82.
- Vansteenkiste, M., Soenens, B., & Vandereycken, W. (2005). Motivation to change in eating disorder patients: A conceptual clarification on the basis of Self-Determination Theory. *International Journal of Eating Disorders, 37*, 207-219.
- Vogel, P.A., Bjarne, H., Stiles, T.C., & Gotestam, G. (2006). Treatment motivation, treatment expectancy, and helping alliance as predictors of outcome in cognitive behavioral treatment of OCD. *Journal of Behavioral Therapy & Experimental Psychiatry, 37*, 247-255.
- Waddington, L. (2002). The therapy relationship in cognitive therapy: A review. *Behavioural and Cognitive Psychotherapy, 30*, 179-191.
- Watson, D., & Clark, L. A. (1995). Depression and the melancholic temperament. *European Journal of Personality, 9*, 351-366.
- Weinberger, J., & Eig, A. (1999). Expectancies: The ignored common factor in psychotherapy. In I. Kirsch (Ed.), *How expectancies shape experience* (pp. 357-382). Washington, DC: American Psychological Association.
- Westra, H. A. (2004). Managing resistance in cognitive behavioural therapy: Application of motivational interviewing in mixed anxiety depression. *Cognitive Behaviour Therapy, 33*, 161-175.
- Westra, H.A. & Dozois, D. J.A. (2006) Preparing clients for cognitive behavioural therapy: A randomized pilot study of Motivational Interviewing for anxiety. *Cognitive Therapy and Research, 30*, 481-498.
- Westra, H.A. & Phoenix, E. (2003). Motivational enhancement therapy in two cases of anxiety disorder: New responses to treatment refractoriness. *Clinical Case Studies, 2*, 306-322.
- Williams, G. C., Gagne, M., Ryan, R. M., & Deci, E. L. (2002). Facilitating autonomous motivation for smoking cessation. *Health Psychology, 21*, 40-50.
- Williams, G. C., Grow, V.M., Freedman, Z., Ryan, R. M., & Deci, E. L. (1996). Motivational predictors of weight loss and weight-loss maintenance. *Journal of Personality and Social Psychology, 70*, 115-126.
- Williams, G. C. McGregor, H. A., Zeldman, A., Freedman, Z. R., & Deci, E. L. (2004). Testing a self-determination theory process model for promoting glycemic control through diabetes self-management. *Health Psychology, 23*, 58-66.

- Williams, G. C., Minicucci, D. S., Kouides, R. W., Levesque, C. S., Chirkov, V. I., Ryan, R. M. & Deci, E. M. (2006). Self-determination, smoking, diet and health. *Health Education Research, 17*, 512–21.
- Willis, B.S., Rosqvist, J., Egan, D., Baney, D., & Manzo, P. (1998). Inpatient and home-based treatment of obsessive–compulsive disorder. In M.A. Jenike, L. Baer & W.E. Minichiello (Eds.), *Obsessive–compulsive disorders practical management, 3rd ed.* (pp. 583–588). St. Louis: Mosby Inc.
- Wilson, M., Bell-Dolan, D., & Beitman, B. (1997). Application of the stages of change scale in a clinical drug trial. *Journal of Anxiety Disorders, 11*, 395–408.
- Young, J. L., Waehler, C. A., Laux, J. M., McDaniel, P. S., Hilsenroth, M. J. (2003). Four studies extending the utility of the Schwartz Outcome Scale (SOS-10). *Journal of Personality Assessment, 80*, 130-138.
- Zeldman, A., Ryan, R. M., & Fiscella, K. (2004). Client motivation, autonomy support and entity beliefs: Their role in methadone maintenance treatment. *Journal of Social and Clinical Psychology, 23*, 675–696.
- Zuroff, D. C., Koestner, R., Moskowitz, D. S., McBride, C., Bagby, M., & Marshall, M. (2007). Autonomous motivation for therapy: A new non-specific predictor of outcome in brief treatments of depression. *Psychotherapy Research, 17*, 137-148.