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SELF-ESTEEM AS A MEDIATOR BETWEEN PERFECTIONISM AND OBSESSIVE-COMPULSIVE SYMPTOMS

By

Steven L. Pence, Jr.

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ABSTRACT

SELF-ESTEEM AS A MEDIATOR BETWEEN PERFECTIONISM AND OBSESSIVE-COMPULSIVE SYMPTOMS

By

Steven L. Pence, Jr.

Nonclinical volunteers (N = 219) were recruited to examine the associations between perfectionism, obsessive-compulsive (OC) symptoms, and self-esteem. Based on cognitive-behavioral theory (McFall & Wollersheim, 1979) and other research findings (Pence & Rice, 2002), it was expected that perfectionistic discrepancy (a defining maladaptive aspect of perfectionism) would be positively associated with OC symptoms, and negatively related to self-esteem. In addition, it was also expected that excessive concerns about making mistakes (also a defining maladaptive aspect of perfectionism) would be positively related to OC symptoms, and inversely associated with self-esteem. The results supported these expectations. These results add to the growing body of literature linking perfectionism and OC symptoms. A model was also tested in which self-esteem was expected to mediate the relationship between excessive concerns about making mistakes and OC symptoms. A second model was tested in which self-esteem was expected to mediate the relationship between perfectionistic discrepancy and OC symptoms. Analyses did not support self-esteem as mediator of perfectionism and OC symptoms in either model. These findings do not support the McFall and Wollersheim (1979) model or their assertion that it is important to directly target self-esteem as part of an overall cognitive-behavioral approach to managing OC difficulties. These and other implications are discussed with regard to theory and future research.

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INTRODUCTION

Problem Statement

Though obsessive-compulsive disorder (OCD) was once thought to be uncommon, results from the Epidemiological Catchment Area (ECA) survey estimate the lifetime prevalence of OCD to be between 2% to 3% (Karno, Golding, Sorenson, & Burnam, 1988). With the population of the United States (U.S.) now surpassing the three million mark, this means that upwards of 90,000 U.S. residents may meet diagnostic criteria for OCD. If valid, these data suggest that OCD is a significant health concern (Abromowitz, 1997).

OCD was once considered to be refractory to treatment (March, Frances, Kahn, & Carpenter, 1997). With the introduction of new pharmacological and behavioral treatments, the prognosis of individuals diagnosed with OCD is now much better, though many obsessive-compulsive (OC) sufferers only get partial relief from existing pharmacological and behavioral treatments (Jenike et al., 1989) and some cases of OCD are still refractory to existing interventions (Foa, Steketee, Grayson, & Doppelt, 1983). Limitations of both pharmacological (Jenike, Baer, & Greist, 1990) and behavioral treatments (Foa et al., 1983; McDonald, Marks, & Blizzard, 1988), therefore, have led to increased attention to the potential role of cognitive approaches in the treatment of OCD. In particular, cognitive therapy may have particular utility in treating pharmacological nonresponders, those who fail to comply with or benefit from traditional behavioral approaches, individuals who do not exhibit overt compulsions, and OCD sufferers with severe comorbid conditions, particularly depression, which often coexists with OCD (van Oppen & Arntz, 1994).

Existing cognitive interventions for OCD focus on cognitively disputing the dysfunctional beliefs, such as extreme maladaptive perfectionism, characteristic of individuals with clinically severe OC symptoms (e.g., Freeston, Rhéaume, & Ladoceur, 1996; Salkovskis, 1985). This direct effects approach is supported by the ability of maladaptive aspects of perfectionism to predict both OC symptoms and self-esteem (Rice & Pence, 2002). McFall and Wollersheim's (1979) cognitive-behavioral model of OCD suggests that the above model is incomplete. They propose that in addition to the disputation of dysfunctional beliefs that it is also important to directly target self-esteem in the treatment process. Extrapolating on the above model, Pence and Rice (2002) predicted that self-esteem would mediate the association between perfectionistic discrepancy (a maladaptive dimension of perfectionism) and OC symptoms. Consistent with their predictions, they found that self-esteem did, in fact, mediate the association between perfectionistic discrepancy and OC symptoms.

This finding challenged the dominant view in the literature that cognitively disputing the dysfunctional beliefs of individuals with OC symptoms is sufficient and that it is unnecessary to directly target self-esteem in the treatment process (e.g., Ehntholt, Salkovskis, & Rimes, 1996). With self-esteem accounting for the relationship between perfectionistic discrepancy and OC symptoms, self-esteem may prove to be a more fruitful target of intervention. This assertion is particularly salient when considered in the context of findings indicating that aspects of maladaptive perfectionism are somewhat refractory to short-term cognitive-behavioral interventions (Blatt, Quinlan, Pilkonis, & Shea, 1995). Given the potential treatment implications, further study of the mediational

model proposed by McFall and Wollersheim (1979) and tested by Pence and Rice (2002) is warranted.

Description of OC Symptoms

The focus of the current investigation is on OC symptoms as opposed to OCD. OC symptoms refer to a conceptualization of OC phenomena that emphasizes the continuous nature of the construct. In contrast, OCD refers to the mental disorder classified in the fourth edition—text revision of the Diagnostic and Statistical Manual of the American Psychiatric Association (DSM-IV-TR; APA, 2000).

According to the DSM-IV-TR (APA, 2000), OCD is a mental disorder characterized by recurrent obsessions (intrusive thoughts or impulses) and/or compulsions (repetitive behaviors or mental acts), that take up more than one hour a day, and cause either marked distress or significant impairment within the individual, with the individual generally recognizing that his or her obsessions and/or compulsions are unreasonable or excessive. Content areas of obsessions include but are not limited to the following: contamination, sexuality, religion, aggressiveness, order, superstitious fears, and nonsensical doubts. Common compulsions include behaviors such as washing, checking, repeating, seeking reassurance, counting, ordering, praying, hoarding, and mentally replaying events.

As noted earlier, results from the ECA survey estimate the lifetime prevalence of OCD to be between 2% to 3%, a rate that places OCD ahead of other disorders such as schizophrenia and panic disorder (Karno et al., 1988). These rates are 25 to 60 times greater than estimates obtained in earlier studies of clinical populations (Karno et al., 1988). These results suggest that OCD is the fourth most common mental disorder behind

phobias, substance abuse, and major depression (Rasmussen & Eisen, 1990). Previous underestimates of the prevalence of OCD may reflect unwillingness on the part of patients to disclose their OC symptoms, a failure to routinely screen for OCD, a lack of awareness of the diverse manifestations of OC phenomena, and misdiagnosis (Rasmussen & Eisen, 1990). Additionally, some OC sufferers may lack access to appropriate treatment (March et al., 1997). From the onset of OCD, studies have found that it takes an average of 17 years for OC sufferers to get proper treatment (March et al., 1997). On average, they see three to four physicians over the course of a nine year period before their OCD is correctly diagnosed (March et al., 1997). Earlier detection and proper treatment could prevent a lot of unnecessary suffering, and it could go a long way towards reducing the risks of developing marital problems, depression, and work problems that so often co-occur with OCD (March et al., 1997).

Some investigators have argued that early adulthood may represent a "'window of vulnerability'" for developing problematic OC symptoms (Sanavio, 1988, p. 174). Recent epidemiological research, in fact, indicates that the onset of OCD often occurs in adolescence and early adulthood, with peak onset for males between the ages of 6 and 15, and females between the ages of 20 and 29 (APA, 2000). Occurrence of symptoms after the age of 50 is rare (Ingram, 1961; Jenike, 1991; Kolada, Bland, & Newman, 1994). These data indicate that males tend to develop OCD at a much earlier age than their female counterparts, which raises the possibility that the "pathophysiological mechanisms in OCD... [may] differ by gender" (Lensi et al., 1996, p. 101). Investigations into gender-related differences have also found that males with OCD had a greater incidence of perinatal trauma and an increased likelihood of never having been married (Lensi et

al., 1996). In contrast, these investigators found that women were more likely to be married. Lensi et al. (1996) also found differences between the sexes in the way that OCD manifested itself and the comorbid conditions accompanying OCD. For example, the males in their sample reported higher frequencies of sexual, exactness, and symmetry obsessions, whereas the females in their sample reported a higher frequency of aggressive obsessions at the onset of their OCD and a higher prevalence of cleaning obsessions. The females in the sample also had higher rates of panic attacks after the onset of the disorder. Moreover, other anxiety disorders were found to be more common in the female patients with OCD. Lastly, OCD was less frequently associated with bipolar disorders in females than in males.

OC symptoms, as assessed by the Brief Symptom Inventory (BSI; Derogatis, 1993), seem to comprise one of six important symptom dimensions for college students seeking services in college and university counseling centers. Additionally, some limited research suggests that, in addition to the emotional difficulties that are often associated with OCD, OC symptoms in school children, adolescents, and college students contribute to poorer academic performance (Mrdjenovich & Bischof, 2003; Parker & Stewart, 1994). In the Mrdjenovich and Bischof (2003) investigation, increased OC symptoms in college students were associated with lower course grades, despite the fact that these students were enrolled in fewer course credits. Thus, many young people will have their lives disrupted by OC symptoms as they transition through adolescence and into college and the world of work.

Traditionally, OCD has been considered to be a form of psychopathology with investigations in this area focusing on clinical samples (Frost, Sher, & Green, 1986; Sher,

Martin, Raskin, & Perrigo, 1991). More contemporary conceptualizations of OCD, however, consider the disorder on a continuum from normal obsessions and compulsions to clinically severe manifestations of these phenomena (e.g., Rachman & de Silva, 1978; Woods, Tolin, & Abramowitz, 2004). Increasingly, investigations have been focused on OC symptoms in nonclinical samples (Sternberger & Burns, 1990a). This trend stems, in part, from the findings from Rachman and de Silva's (1978) study in which roughly 80% of the participants in their nonclinical sample reported intrusive cognitions. In a replication of that study utilizing a nonclinical sample of college students, 88% of the participants reported having intrusive cognitions (Sher et al., 1991). Similarly, in a nonclinical sample of college students, Sternberger (1993) found individuals who met both full and partial diagnostic criteria for OCD. These findings and others suggest that "a nonclinical analog sample is a promising avenue for studying the phenomenology of OCD" (Sternberger & Burns, 1990a, p. 339). The use of a nonclinical sample in the present study reflects this more contemporary conceptualization of OC symptoms: one that emphasizes the continuous nature of the construct.

Treatment of OC Symptoms

OCD was once considered to be refractory to treatment and OCD patients generally continued to suffer despite years of psychotherapy (March et al., 1997). It was not until the advent of behavioral treatments in the mid-1960's that effective treatments for OCD emerged (Foa & Franklin, 1999). Prior to the mid-1960's, OCD was generally nonresponsive to treatment from a psychodynamic perspective and to existing pharmacological agents (Foa & Franklin, 1999). Thanks, in no small part, to refined pharmacological and behavioral treatments, the prognosis of OCD sufferers is now much

better. Antidepressants, particularly serotonin reuptake inhibitors (SRIs), are the pharmacological agents most often used in the treatment of clinically severe obsessions and compulsions (Abramowitz, 1997; Jenike et al., 1990; van Balkom et al., 1994). In contrast, the psychological treatment of choice in treating OCD is the behavioral treatment exposure and response prevention (ERP; McLean et al., 2001, Riggs & Foa, 1993; Steketee, 1993). This robust behavioral treatment was developed by Dr. Victor Meyer (1966). Dar and Greist (1992) provide the following description of ERP in the treatment of OCD:

> *Exposure* entails deliberately facing the feared or avoided object, thought, situation, or place; *response prevention* involves delaying, diminishing, or abjuring anxiety-reducing rituals. The combination of exposure and response prevention leads to gradual decreases in anxiety and the urge to perform rituals. When this combination is repeated, patients become less anxious and the frequency and intensity of obsessions and compulsions are reduced. (p. 885)

Cognitive approaches to treating OCD have received increased attention in the literature, in part, due to limitations of both pharmacological (Jenike et al., 1990) and behavioral treatments (Foa, Steketee, Grayson, & Doppelt, 1983; McDonald, Marks, & Blizzard, 1988). Cognitive approaches for treating OCD include thought stopping (Hackman & McLean, 1975) rational-emotive behavior therapy (REBT; Ellis, 1994) and a cognitive approach stemming from Beck's (1976) cognitive therapy for depression (van Oppen & Arntz, 1994).

Serotonergic medications, ERP, and, more recently, cognitive approaches have all proven to be efficacious in the treatment of OCD (Abramowitz, 1997). Though there is

still much work to be done with respect to establishing new treatments, refining existing ones, integrating various treatment approaches, and matching specific treatments to specific client characteristics, significant strides in the treatment of OCD have occurred in the past couple of decades.

The current investigation sought to build off of that momentum by examining perfectionism, a dysfunctional belief implicated by the Obsessive Compulsive Cognitions Working Group (OCCWG, 1997) and others as being central to the etiology and persistence of OC phenomena. The OCCWG is a group of international researchers who are working in collaboration to advance the understanding of the cognitive process characteristic of individuals with OCD and to develop a standardized set of cognitive instruments for OCD. Understanding the dysfunctional beliefs associated with OC difficulties should correspondingly advance both the breadth and efficacy of cognitive interventions aimed at treating these problems (Bouchard, Rhéaume, & Ladouceur, 1999). Cognitive therapy has been implicated in the treatment of pharmacological nonresponders, those who fail to comply with or benefit from traditional behavioral approaches, individuals who do not exhibit overt compulsions, and OCD sufferers with severe comorbid conditions (van Oppen & Arntz, 1994). One estimate suggests that 80% of those with clinically severe OC symptoms will experience problematic depressive symptoms at some point during the course of their disorder (Maxmen & Ward, 1994).

Perfectionism

There is no general agreement among perfectionism researchers as to how specifically to define the construct of perfectionism. The definition of leading researchers in the field varies according to the factors they emphasize in their respective research

programs (Flett & Hewitt, 2002a). This lack of definitional clarity can be problematic as the same term is often used when referencing different concepts (Flett & Hewitt, 2002a).

From a historical perspective, perfectionism has been conceptualized in a unidimensional and generally negative manner (i.e., the problematic aspects of perfectionism have been emphasized) (Barrow & Moore, 1983; Blatt, 1995; Burns, 1980; Pacht, 1984; Sorotzkin, 1985). There is good reason for the historic emphasis on the negative aspects of this construct (Rice & Mirzadeh, 2000). Elevated levels of perfectionism have been correlated with various anxiety disorders including OCD (Antony, Purdon, Huta, & Swinson, 1998; Frost & Steketee, 1997), social phobia (Juster et al., 1996) and panic disorder with or without agoraphobia (Antony et al.1998; Frost & Steketee, 1997). Additionally, elevated levels of perfectionism have been associated with other psychopathologies including depression (Blatt, 1995; Hewitt, Flett, & Ediger, 1996; Preusser, Rice, & Ashby, 1994; Rice, Ashby, & Slaney, 1998), alcoholism (Robertson, Fournet, Zelhart, & Estes, 1988), psychosomatic disorders (Forman, Tosi, & Rudy, 1987), and eating disorders (Bastiani, Rao, Weltzin, & Kay, 1995; Cash & Szymanski, 1995; Minarik & Ahrens, 1996; Srinivasagam et al., 1995), as well as other psychological problems such as low self-esteem (Ashby & Rice, 2002; Preuser et al., 1994; Rice et al. 1998; Rice & Slaney, 2002; Slaney, Rice, Mobley, Trippi, & Ashby, 2001), trait anxiety (Suddarth & Slaney, 2001), chronic fatigue (Magnusson, Nias, & White, 1996), migraine (Brewerton & George, 1993), sexual dysfunction (DiBartolo & Barlow, 1996), and Type A behavior (Flett, Hewitt, Blankstein, Kirk, and Dynin, 1994). In describing the role that perfectionism played in the suicides of three highly talented and successful individuals, Blatt (1995) wrote about the "Destructiveness of Perfectionism." Beyond causing

personal impairment and distress, perfectionism also takes a considerable toll on the family members of the perfectionist (Flett & Hewitt, 2002a). It is the "insidious nature of perfectionism" that has led some to label something as perfectionism only when describing a type of psychopathology (Pacht, 1984, p. 387).

Although many studies have yielded findings underscoring the negative aspects of perfectionism, Hamachek (1978) proposed that perfectionism is best viewed as a multidimensional construct that has both positive and negative features (i.e., he differentiated neurotic or maladaptive perfectionism from normal or adaptive perfectionism) and other authors have developed multidimensional models of perfectionism (Frost, Marten, Lahart, & Rosenblate, 1990; Hewitt & Flett, 1991; Slaney, Rice, & Ashby, 2002).

In Hamachek's (1978) conceptualization, maladaptive perfectionists set unrealistically high self-standards that they are unable to achieve, which deprives them of the normal satisfaction derived from a task well-done. Even when they perform at high levels, their performance feels inadequate to them. Their primary motivation stems from a fear of failure and concerns about not meeting others' expectations. In contrast, adaptive perfectionists approach tasks with a certain amount of clarity. That is, they have realistic appraisals of their strengths and weaknesses, and they do derive pleasure from a task well done. Hamacheck's (1978) model posits a positive link between adaptive perfectionism and self-esteem and an inverse association between the dysfunctional aspects of this construct and self-esteem. Simply stated, the high self-standards of adaptive perfectionists in contrast to those of maladaptive perfectionists seem to enhance rather than detract from their feelings of self-worth.

Numerous studies using different measures of perfectionism have affirmed the benefits of a multidimensional conceptualization of perfectionism, with potentially adaptive as well as maladaptive dimensions (Ashby & Rice, 2002; Enns & Cox, 2002; Frost, Heimberg, Holt, Mattia, & Neubauer, 1993; Rice et al., 1998; Terry-Short, Owens, Slade, & Dewey, 1995). Though adaptive perfectionism exists, the focus of the current investigation is on maladaptive perfectionism because it is the "debilitating nature of perfectionism" that is associated with various forms of psychopathology (Flett & Hewitt, 2002b, p. xi; see also Rhéaume, Freeston, Dugas, Letarte, & Ladoceur, 1995).

Despite the fact that base rates of perfectionism are not widely available, considerable anecdotal evidence exists to suggest that the dysfunctional aspects of this construct may be grossly underestimated (Flett & Hewitt, 2002a). "A strong case can be made for the claim that [maladaptive] perfectionism is endemic to Western culture" (Flett & Hewitt, 2002a, p. xi). Moreover, "the fact that elevated levels of perfectionism are seen across a wide variety of disorders indicates that it is a construct worthy of more research" (Frost & Steketee, 1997, p. 294).

Perfectionism and OC Symptoms

Perfectionism has long played a central role in the theorizing about OCD (Frost & Steketee, 1997). The link between perfectionism and OCD dates back to the writings of Janet (1903; as cited in Pitman, 1987) where perfectionism figured prominently in the first two stages of his three stage theory of OCD. Since Janet's initial writings on this topic over a century ago, perfectionism has been emphasized in analytic (e.g., Jones, 1918; Mallinger, 1984; Mallinger & DeWyze, 1992; Salzman, 1979; Straus, 1948), cognitive (e.g., Beck, Emery, & Greenberg, Guidano & Liotti, 1983; McFall &

Wollersheim, 1979), and behavioral theoretical accounts of this disorder (e.g., McAndrews, 1989). The central theme linking all of these theories together "is that perfectionistic thinking and perfectionistic behavior represent attempts to avoid something unpleasant (i.e., criticism, disaster, uncertainty, or lack of control)" (Frost & DiBartolo, 2002, p. 361). Beyond theoretical accounts linking perfectionism to OCD, numerous empirical studies have affirmed an association between perfectionism and OC symptoms in both clinical (e.g., Antony, et al., 1998; Frost & Steketee, 1997) and nonclinical samples (e.g., Rhéaume et al., 1995; Rice & Pence, 2006).

Self-Esteem, Perfectionism, and OC Symptoms

A number of recent empirical findings have found maladaptive perfectionism to be negatively associated with self-esteem (e.g., Ashby & Rice, 2002; Slaney et al., 2001). With a few notable exceptions, self-esteem in the context of OCD remains largely unexamined. Recent empirical findings, however, have affirmed a negative association between self-esteem and OC symptoms in both a clinical (Ehntholt et al., 1999) and nonclinical sample (Pence & Rice, 2002).

An extrapolation of McFall and Wollersheim's (1979) cognitive-behavioral model of OCD is that self-esteem may be an important mediator between the association of maladaptive perfectionism and OCD, a model recently tested by Pence and Rice (2002). Consistent with that model, they found that self-esteem mediated the association between perfectionistic discrepancy and OC symptoms. An important implication of that finding concerns self-esteem as an important target for clinical intervention when treating patients suffering from clinically severe OC symptoms (Pence & Rice, 2002), though

future research utilizing experimental designs is needed to support intervention implications.

Summary and Conclusion

As recently as 1985, OCD was thought to be a rare medical condition with a poor prognosis (Rasmussen & Eisen, 1990). "There can be little doubt that the clinical lexicon as applied to OCD has been vastly elaborated in recent years" (Tallis, 1996, p. 362). Existing pharmacological and psychological treatments are much better than those existing even two decades ago, and there is good reason for treatment providers and patients alike to be optimistic. This optimism, however, is somewhat tempered by the fact that many OC sufferers only get partial relief from existing treatments (Jenike et al., 1989) and some cases of OCD are still refractory to existing interventions (Foa et al., 1983). This reality coupled with the high prevalence of OCD makes this a significant health concern (Abromowitz, 1997). Therefore, identifying effective treatments for OCD is important and certainly worthy of additional inquiry (Abromowitz).

Existing cognitive interventions focus on cognitively disputing the dysfunctional beliefs of individuals with clinically severe OC symptoms (e.g., Freeston, Rhéaume, & Ladoceur, 1996; Salkovskis, 1985). In addition to targeting cognitive distortions, McFall and Wollersheim (1979) suggested that it is also important to enhance self-esteem in the treatment process. A recent empirical finding indicating that self-esteem mediates the association between perfectionistic discrepancy and OC symptoms lends credence to their assertion (Pence & Rice, 2002). Further research is needed to ascertain whether or not self-esteem ought to be a direct target of intervention when treating obsessive-compulsives.

The current investigation was a partial replication and extension of an earlier investigation conducted by Pence and Rice (2002). The findings were extended, in part, by addressing some of the limitations of the previous investigation. Specifically, the construct of perfectionism was more comprehensively measured in the current investigation. Additionally, the *Compulsive-Activity Checklist-Revised* (CAC-R; Steketee & Freund, 1993) was the OC measure used in the former study, whereas the *Padua Inventory* (PI, Sanavio, 1988) was the OC measure used in the current investigation. The CAC-R is limited by its exclusive focus on the behavioral symptoms of OCD. In contrast, the PI is the most comprehensive self-report measure of OC symptoms (Sternberger, 1993), and it taps both the behavioral and cognitive components of the disorder. A more comprehensive measure of OCD, such as the PI, does a better job of tapping the diverse manifestations of OC phenomena.

The purpose of the proposed investigation was to examine two mediational models. In the first model, self-esteem acted as a potential mediator between concerns over mistakes (COM), a maladaptive dimension of perfectionism, and OC symptoms. In the second model, self-esteem acted as a potential mediator between Discrepancy, also a maladaptive dimension of perfectionism, and OC symptoms.

Definitions

COM is a maladaptive aspect of perfectionism measured by Frost et al.'s (1990) Multidimensional Perfectionism Scale (FMPS). The FMPS measures six dimensions of perfectionism, and it is the most widely used multidimensional measure of perfectionism that has examined the association between perfectionism and OC symptoms. COM taps "negative reactions to mistakes, a tendency to interpret mistakes as equivalent to failure,

and a tendency to believe that one will lose the respect of others following failure" (Frost et al., 1990, p. 453). Incidentally, COM is considered to be the most important dimension of perfectionism in that model (Frost et al., 1990).

Discrepancy, the other maladaptive aspect of perfectionism that was examined in the current investigation, is measured by Slaney et al.'s (2001) Revised Almost Perfect Scale (APS-R). The APS-R is a relatively new measure of perfectionism that examines both positive and negative aspects of perfectionism. Discrepancy taps "a perceived difference between standards and performance" and it is thought to be a defining characteristic of maladaptive perfectionism (Slaney et al., 2001, p. 132).

Research Questions

1. Is there a relationship between COM and OC symptoms?
2. Is there a relationship between COM and self-esteem?
3. Is there a relationship between self-esteem and OC symptoms?
4. Does self-esteem mediate the relationship between COM and OC symptoms?
5. Is there a relationship between Discrepancy and OC symptoms?
6. Is there a relationship between Discrepancy and self-esteem?
7. Does self-esteem mediate the relationship between Discrepancy and OC symptoms?

Hypotheses

Based on existing cognitive-behavioral models of OCD, and current empirical findings, the following set of hypotheses dealing with a mediator model emerged. (1) It is expected that there will be a positive relationship between COM and OC symptoms. (2) It is further expected that there will be an inverse relationship between COM and self-esteem. (3) Moreover, it is expected that there will be an inverse relationship between self-esteem and OC symptoms. (4) It is also expected that self-esteem will mediate the relationship between COM and OC symptoms. That is, when accounting for self-esteem, the otherwise (expected) significant association between COM and OC symptoms will diminish. (5) Additionally, it is expected that there will be a positive relationship between Discrepancy and OC symptoms. (6) It is further expected that there will be an inverse relationship between Discrepancy and self-esteem. (7) Lastly, it is expected that self-esteem will mediate the relationship between Discrepancy and OC symptoms. That is, when accounting for self-esteem, the otherwise (expected) significant association between Discrepancy and OC symptoms will diminish.

REVIEW OF LITERATURE

In this literature review, literature focusing on the key variables under investigation was critically examined and reviewed. The literature review is organized under three subheadings that present the arguments in support of this proposal in a systematic and coherent manner. The literature review commences with a description of various treatment approaches used in the management of OC symptoms. This is followed by a thorough review of relevant theory, clinical observations, and empirical research that link perfectionism to OC symptoms. Lastly, this section concludes with a discussion of the interrelationships between and among self-esteem, perfectionism, and OC symptoms.

Treatment of OC Symptoms

Though psychodynamic conceptualizations of OCD have descriptive value, they have not yielded effective treatments (Baer & Minichiello, 1986). "It is one of the ironies of clinical psychiatry that, although the obsessive-compulsive disorder illuminates the psychoanalytic concept of psychodynamic conflict perhaps better than any other psychoneurosis, its symptoms generally remain impervious to psychoanalytic treatment" (Nemiah, 1984, p. 9). Munford (2004) speculated that the reason that OCD has not been responsive to insight-oriented treatments is that it is likely caused by problematic brain functioning rather than repressed psychological conflicts.

The biological etiological model of OCD posits "a dysfunction in the serotonin system" (Foa & Franklin, 1999, p. 357). SRIs, as noted earlier, are the pharmacological agents of choice in the treatment of OCD (Abramowitz, 1997; Jenike et al., 1990; van Balkom et al., 1994). In a recent quantitative review of controlled, clinical studies, serotonergic medicine was found to substantially reduce OC symptomatology

(Abramowitz, 1997). Despite these promising findings, the side effects of SRIs, though generally tolerable, require some patients to discontinue the medication (Jenike et al., 1990). Additionally, though most patients improve with SRIs, few show improvements greater than a 50% reduction in symptoms (Jenike et al., 1989). Lastly, the relapse rate of OCD patients whose medication is discontinued is high, 89% in one study (Pato, Zohar-Kadouch, Zohar, & Murphy, 1988).

The behavioral etiological model of OCD posits that the intrusive thoughts and impulses are conditioned anxiety stimuli and that the accompanying rituals are maintained by their ability to reduce anxiety (Foa & Franklin, 1999). Numerous clinical studies have supported traditional behavioral therapeutic approaches such as ERP as efficacious in helping OCD sufferers (e.g., Emmelkamp, 1982; Rachman & Hodgson, 1980). "The excellent improvement rates in OCD patients treated with ERP are among the most consistent findings in the literature on the treatment of behavior disorders" (Abramowitz, 1997, p. 49). ERP, as noted earlier, is a treatment approach that desensitizes patients to the obsessive thoughts that trigger compulsions (Munford, 2004). Recent empirical research has demonstrated that ERP is associated with changes in the brain chemistry of patients who undergo this treatment (Baxter et al., 1992). These changes in brain chemistry, in turn, are associated with reductions in OC symptoms (Baxter et al., 1992).

Despite the important advances that traditional behavioral treatments such as ERP have brought to the treatment of OCD, there are limitations to a behavioral approach. In all, the proportion of individuals with OCD who are successfully treated by traditional behavioral approaches is about 50% (Foa et al., 1983), with roughly 25% of those who

are not successfully treated either refusing behavior therapy or terminating prematurely (McDonald et al., 1988). Research is sorely needed to ascertain why 25% of patients refuse behavior therapy or terminate prematurely. Of OCD sufferers who partake in ERP, the approach benefits around 75% of them (Foa & Emmelkamp, 1983). Dar and Greist (1992) suggest several factors that may explain the poor responses of those who remain in treatment. They argue that severe comorbid conditions (e.g., depression), poor compliance with treatment, and central nervous system depressing medications (e.g., alcohol and benzodiazepines) all interfere with effective behavioral therapy. Others have noted the poor response rate among a subset of OCD sufferers (i.e., those not exhibiting overt compulsions) (Rachman, 1997). Of all of these possible explanations, the primary reason why behavior therapy is thought to fail is poor compliance with treatment (Marks, 1981; Rachman & Hodgson, 1980). Compliance can be difficult for some patients as they find directly confronting their fears, the opposite of what they had been doing previously, scary and intimidating. Just as research is needed to increase persistence with behavioral interventions in the treatment of OCD, attention must also be paid to the poor compliance rate among a subset of OC sufferers. The bottom line, however, is the need to have treatments available that meet the needs of the full spectrum of OC sufferers.

In recent years, increased attention has been given to the potential role of cognitive approaches in the treatment of OCD. Cognitive variants of the behavioral etiological model of OCD posit dysfunctional beliefs and illogical attributions as being central to the development and persistence of OCD (Foa & Franklin, 1999). This increased attention has yielded findings attesting to the efficacy of various cognitive approaches in the treatment of OCD (e.g., Abramowitz, 1997; Emmelkamp & Beens,

1991; Emmelkamp, Visser, & Hoekstra, 1988; van Hoppen et al., 1995). A recent quantitative review of controlled, clinical studies, in fact, found ERP and cognitive approaches to be comparably effective in reducing OC symptoms (Abramowitz, 1997). The comparative efficacy between these two treatment paradigms also extends to group treatment approaches (McLean et al., 2001).

In an attempt to explain the comparative efficacy of ERP and cognitive approaches, Abramowitz (1997) examined the respective protocols of ERP and cognitive therapy in the treatment of OCD. He concluded that there is considerable overlap in these treatments, and he suggested that they may share a common active ingredient. He went on to speculate that "cognitive therapy produces different beliefs by means of direct verbal challenges, and behavioral procedures provide exposure to conditions that lead to the disconfirmation of dysfunctional beliefs" (p. 49). It is worth noting, however, that in contrast to traditional behavioral approaches, the long-term effects of cognitive therapy with OCD have yet to be established (van Oppen et al., 1995). Therefore, the preliminary research on cognitive treatments for OCD is promising, but future studies are needed to examine the long-term effects of cognitive therapy in the treatment of this disorder.

Perfectionism and OC Symptoms

Cognitive-behavioral conceptualizations of OC phenomena implicate dysfunctional beliefs as being central to the etiology and persistence of intrusive thoughts and compulsive urges (e.g., Guidano & Liotti, 1983; McFall & Wollersheim, 1979; OCCWG, 1997; Salkovskis, 1985). Correspondingly, a number of cognitive interventions have been developed to modify the dysfunctional beliefs in OCD (e.g., Freeston et al., 1996; van Oppen et al., 1995). By means of consensus ratings, six dysfunctional beliefs

have been identified by the OCCWG (1997) as being important in OCD. These include "(1) inflated responsibility; (2) overimportance of thoughts; (3) excessive concern about the importance of controlling one's thoughts; (4) overestimation of threat; (5) intolerance of uncertainty; and (6) perfectionism" (p. 667). These dysfunctional beliefs are thought to be relatively enduring structures that cut across situations (OCCWG, 1997). Important to the current investigation is the dysfunctional belief of perfectionism. Various definitions of perfectionism with respect to OCD have been offered. One definition propagated by the OCCWG (1997) defines perfectionism in OCD as "the tendency to believe that there is a perfect solution to every problem, that doing something perfectly (i.e. mistake free) is not only possible, but also necessary, and that even minor mistakes will have serious consequences" (p. 678).

As noted earlier, perfectionism figures prominently in a number of theoretical descriptions and models of OCD (e.g., Guidano & Liotti, 1983; Mallinger, 1984; McFall & Wollersheim, 1979; Salzman, 1868; Straus, 1948). Particularly salient to the current investigation is McFall and Wollersheim's (1979) cognitive-behavioral conceptualization of this disorder. The McFall and Wollersheim (1979) model played an equally important role in the study conducted by Pence and Rice (2002), of which the current investigation represents a partial replication and extension. In contrast to the six dysfunctional beliefs identified by the OCCWG (1997), McFall and Wollersheim (1979) emphasize four unreasonable beliefs as being developmentally important in OCD. These four unreasonable beliefs are thought to influence the OC sufferer's primary appraisal of threat. These beliefs include the belief that

(1) one should be perfectly competent, adequate, and achieving in all possible respects in order to be worthwhile and to avoid criticism or disapproval by others/oneself; (2) making mistakes or failing to live up to one's perfectionistic ideals should result in punishment or condemnation; (3) one is powerful enough to initiate or prevent the occurrence of disastrous outcomes by magical rituals or obsessive ruminating; and (4) certain thoughts and feelings are unacceptable, having them could lead to catastrophe (e.g., anger will result in homicide), and one should be punished for having them. (p. 335)

The first two of these unreasonable beliefs pertain to perfectionism. There is some noteworthy overlap in this definition of perfectionism in OCD with the definition put forth by the OCCWG (1997). Specifically, both descriptions emphasize COM, a dimension of perfectionism tapped by Frost et al.'s (1990) FMPS. Moreover, both accounts suggest that the appraisals in OCD stem from the notion that the attainment of perfection is possible.

Subsequent to the primary appraisal of threat in McFall and Wollersheim's (1979) model, distortions are also thought to exist in obsessive-compulsives' secondary appraisal process, most notably in the form of underestimating their ability to adequately cope with perceived threats. The compulsive symptoms, therefore, are a coping strategy that serves to reduce both the anxiety and uncertainty stemming from the concomitant overestimation of threat and underestimation of ability to adequately cope by providing the sufferer with a sense of control.

Perfectionism also plays a central role in Guidano and Liotti's (1983) cognitive-behavioral model of OCD. In the same vein as McFall and Wollersheim (1979), they also

emphasize the role of dysfunctional beliefs in the etiology and maintenance of OC phenomena. Specifically, they argue that "perfectionism, the need for certainty, and a strong belief in the existence of an absolutely correct solution for human problems" (p. 255) are three central assumptions underlying OCD. Though not entirely transparent at first blush, two of these assumptions reflect perfectionistic beliefs. The third assumption described in their model is similar to the belief in perfect solutions emphasized by both McFall and Wollersheim (1997) and the OCCWG (1997), as well as others (e.g., Freeston, Rhéaume, & Ladouceur, 1996).

With respect to treatment, both the McFall and Wollersheim (1979) and the Guidano and Liotti (1983) models emphasize the importance of altering the obsessive-compulsive's perfectionistic attitude and beliefs. A distinguishing feature of the McFall and Wollersheim (1979) model, however, is the emphasis that they also place on directly targeting self-esteem in the treatment process.

Frost and DiBartolo (2002) observed that clinical observations of patients with OCD closely match theoretical descriptions of perfectionism in OCD. For example, 76% of children with OC symptoms in one study "were perfectionistic, fastidious, and worried about detail" (Honjo et al., 1989, p. 84). These personality traits were considered by the investigators to be central aspects of their personality. Moreover, Tallis (1996) reported on a series of three brief case studies of compulsive washers whose washing behavior could not be attributed to existing explanations of these phenomena proposed by Rachman (1994). Tallis (1996) proposed a new typology of compulsive washing attributable to the personality characteristic of perfectionism. Lastly, a number of studies have found that perfectionism characterizes the families, particularly the parents, of OCD

sufferers (Allsopp & Verduyn, 1990; Balsev-Olesen & Geert-Jorgensen; 1959; Honjo et al., 1989; Hoover & Insel; 1984; Lo, 1967; Rasmussen & Tsang, 1986). Rasmussen and Eisen (1989) link perfectionism to the development of OCD, while others tie the development of this disorder to demanding and critical parents (Rachman & Hodgson, 1980).

In addition to theoretical accounts and clinical descriptions supporting a link between perfectionism and OC symptoms, a sizeable number of empirical studies have examined this association. Relevant to the current investigation are empirical studies that have examined this relationship using one of the three multidimensional measures of perfectionism. These multidimensional measures of perfectionism include Frost et al.'s (1990) FMPS, Hewitt and Flett's (1991; Hewitt, Flett, Turnbull-Donovan, & Mikail, 1991) Multidimensional Perfectionism Scale (HMPS), and Slaney et al.'s (2001) APS-R.

The dimensions of perfectionism tapped by the FMPS include COM, Personal Standards (PS), Parental Expectations (PE), Parental Criticism (PC), Doubts about Actions (DA), and Organization (O), with COM considered the most important dimension of perfectionism. COM, as noted earlier, taps "negative reactions to mistakes, a tendency to interpret mistakes as equivalent to failure, and a tendency to believe that one will lose the respect of others following failure" (Frost et al., 1990), p. 453).

The HMPS is a three dimensional measure. One dimension emphasizes self-directed expectations of perfectionism (Self-Oriented Perfectionism; SOP), another dimension emphasizes other-directed expectations of perfectionism (Other-Oriented Perfectionism; OOP), and a final dimension, Socially Prescribed Perfectionism (SPP), emphasizes an assumption that significant others expect perfectionism (Hewitt & Flett,

1991). Though they were developed from divergent perspectives, the FMPS and the HMPS are the perfectionism measures currently in widest use (Enns & Cox, 2002). The FMPS has been described as having a largely intrapersonal focus whereas the HMPS is more interpersonally focused (Parker & Adkins, 1995).

The APS-R measures three dimensions of perfectionism. One dimension measures the extent to which an individual possesses high personal standards for performance and achievement (High Standards). A second dimension, Order, measures a preference for both orderliness and neatness (Slaney et al., 2001). Lastly, a third dimension, Discrepancy, measures "a perceived discrepancy between standards and performance" and, as noted earlier, is thought to be a defining characteristic of maladaptive perfectionism (Slaney et al., 2001, p.132). Coming from a counseling psychology perspective, the assumptions upon which the APS-R was developed are somewhat different than the assumptions guiding the aforementioned multidimensional measures of perfectionism (Enns & Cox, 2002). Inherent in the APS-R's conceptualization and development is a greater emphasis on potentially adaptive as well as maladaptive aspects of perfectionism (Enns & Cox, 2002).

Most of the empirical research examining the association between perfectionism and OC symptoms has used nonclinical participants (Frost & DiBartolo, 2002). Let us first examine the empirical research using the FMPS, the most widely used multidimensional perfectionism measure in this line of inquiry. In their initial scale development, using a sample of college women, DA was the only subscale found to significantly correlate with a measure of OC symptoms (Frost et al., 1990). In a later study in the same article, significant associations between four of the dimensions of the

FMPS (COM, PS, PE, and DA) and OC symptoms were found. Additionally, COM and DA were also found to be associated with compulsive checking. In that study, COM and DA were the subscales that emerged as having the strongest relationship with the OCD measures. Likewise, in another study utilizing a nonclinical sample, OC symptoms were most closely associated with the FMPS dimensions of COM and DA (Rhéaume et al., 1995). Similarly, Frost, Steketee, Cohn, and Griess (1994) found that subclinical OC participants, defined as those who had high scores on two of the three OCD screening measures employed in their study, scored higher than their non-OC counterparts on COM, DA, and PS. Lastly, significant associations have also been found between the FMPS dimensions of COM and DA with compulsive indecisiveness (Frost & Shows, 1993; Gayton, Clavin, Clavin, & Broida, 1994), compulsive hoarding (Frost & Gross, 1993), and "not just right experiences" (NJREs; Coles, Frost, Heimberg, & Rhéaume, 2003), with NJREs being defined as "uncomfortable sensations of things not being just right" (p. 681). Examples of NJREs include the feeling that one's clothes are not on the body correctly or just do not feel right and the feeling that the water faucet was not turned off correctly (Coles et al., 2003).

Frost and Steketee (1997) were the first investigators to use the FMPS in examining the association between perfectionism and OCD in a clinical sample. In that study, perfectionism was compared across a clinical sample of OCD patients, a clinical sample of patients with panic disorder with agoraphobia, and nonclinical volunteers. They found that OCD patients scored higher on overall perfectionism than nonclinical volunteers and on two dimensions of perfectionism (COM and DA). Additionally, they found that the OCD patients had higher DA scores than the sample of patients with panic

disorder with agoraphobia. Similar results were obtained by Antony et al. (1998) when they compared perfectionism scores across the anxiety disorders (panic disorder with or without agoraphobia, OCD, social phobia, specific phobia) and nonclinical volunteers. Specifically, they found that the OCD sample, relative to the nonclinical sample, scored higher on COM and DA. Additionally, the OCD sample scored higher on DA than the panic disorder sample. These findings seem to extend to young people diagnosed with OCD. Specifically, Libby, Reynolds, Derisley, and Clark (2004) found that 11 to 18-year-olds diagnosed with OCD had significantly higher COM scores than a nonclinical sample. It is worth noting that the COM scores in the OCD sample mirrored those found in adult studies.

In contrast to the FMPS, much less empirical research examining the link between perfectionism and OC symptoms has been conducted using the HMPS and the APS-R. Antony et al. (1998) were the first investigators to examine the association between HMPS dimensions and OCD. They found that, relative to the nonclinical sample, the panic disorder, social phobia, and OCD groups reported higher levels of SPP. This finding indicates that these groups of anxiety-disordered participants perceive others as imposing excessive demands on them (Antony et al., 1998).

Rice and Pence (2006) examined the association between APS-R dimensions and OC symptoms in a nonclinical sample of college students. In addition to being a significant predictor of obsessive thought difficulties, the maladaptive dimension of Discrepancy also emerged as a significant predictor of both behavioral checking and washing problems. Additionally, the interaction of Discrepancy and High Standards predicted behavioral washing problems, but not behavioral checking or obsessive thought

difficulties. Specifically, participants with high Discrepancy scores and low High Standards scores were more likely to experience behavioral washing problems. In a related study, high levels of perfectionistic discrepancy and low personal standards were significantly associated with OC behaviors (Braver, 1996).

Rice and Pence (2006) examined the relative efficacy of specific subscales, identified by Shafran and Mansell (2001) as being central to the construct of perfectionism of the FMPS (COM, PS), HMPS (SOP), and APS-R (High Standards, Discrepancy) with respect to explaining OC difficulties. "Controlling for other perfectionism dimensions, perfectionistic discrepancy emerged as generally associated with OC difficulties" (Rice & Pence, 2006, p. 109). After controlling for other dimensions of perfectionism, COM emerged as a significant predictor of obsessive thought difficulties, but not behavioral checking and washing problems. Rice and Pence (2006) "found perfectionistic discrepancy to be a robust predictor of OC difficulties, either directly accounting for significant variation in such difficulties, in interaction with high personal standards, or in combination with excessive concerns about making mistakes" (p. 22). Results from this study implicate perfectionistic discrepancy as being a defining characteristic of maladaptive perfectionism, as others have suggested (e.g., Slaney et al., 2001).

In the collection of empirical studies reviewed, associations between the FMPS dimensions of COM and DA, the HMPS dimension of SPP, and the APS-R dimension of Discrepancy are the dimensions of perfectionism most significantly associated with OC symptoms. It is important to point out, however, that strong associations between the DA subscale of the FMPS and OC symptoms are expected because items on this subscale

were derived from an OCD measure. Therefore, the DA subscale should be considered "a symptom of OCD" rather than an aspect of perfectionism (Shafran & Mansell, 2001). Moreover, although the SPP subscale of the HFMPS has been consistently associated with numerous psychological difficulties, Shafran and Mansell (2001) argued that *socially prescribed* perfectionism is not integral to perfectionism, per se: "People who score highly on this scale are unlikely to regard themselves as perfectionists unless their perception leads them to impose inflexible high standards on themselves" (p. 887). In short, rather than being central to the construct of perfectionism, SPP is more likely a predictor of, or consequence of perfectionism (Shafran & Mansell, 2001). Dimensions of perfectionism, therefore, considered less central to the construct of perfectionism, such as DA and SPP, were not examined in the current investigation (see Shafran & Mansell, 2001, for a further review of this research).

Self-Esteem, Perfectionism, and OC Symptoms

Sorotzkin (1985) asserted that the self-worth of perfectionists is based on the achievement of unattainable goals. When perfectionists do not achieve these goals, the result is a decrease in self-esteem. Others have stated that conceptual arguments, such as Sorotzkin's, suggest that "perfectionism sets the stage for self-esteem" (Rice et al., 1998, p. 305). Additionally, as you will recall, Hamachek (1978) proposed that it is the high self-standards of maladaptive perfectionists as opposed to the high self-standards of adaptive perfectionists that adversely impact self-esteem. Consistent with Hamachek's (1978) theorizing, recent empirical findings have found aspects of maladaptive perfectionism to be negatively associated with self-esteem (e.g., Ashby & Rice, 2002; Preuser et al., 1994; Rice et al., 1998; Slaney et al., 2001). Less clear from this research

has been the association between adaptive aspects of perfectionism (such as high but not unreasonable self-standards) and self-esteem, with some studies finding a positive link (Ashby & Rice, 2002; Slaney et al., 2001) and others not finding significant associations (Rice et al., 1998).

In accordance with McFall and Wollersheim's (1979) cognitive-behavioral model of conceptualizing and treating OCD, the unreasonable beliefs characteristic of OCD, such as extreme maladaptive perfectionism, that adversely impact self-esteem should be modified. Additionally, they proposed that it is also important to work to enhance the self-esteem of OCD patients in the treatment process. In a retrospective investigation of prodromal OCD symptoms, lowered self-esteem was among a constellation of symptoms found to precede the onset of OCD (Fava, Savron, Rafanelli, Grandi, & Canestrari, 1996). Other common prodromal symptoms included generalized anxiety, irritability, depressed mood, pessimism, indecision, phobic and somatic anxiety, impaired work, and guilt.

Furthermore, in a recent exploratory study conducted by Ehntholt et al. (1999) in which they compared self-esteem between OCD patients, anxious controls, and non-anxious controls, they found that with respect to generalized self-esteem, the two clinical groups did not differ from each other, but had significantly lower self-esteem than the non-anxious controls. Despite equivalence on measures of generalized self-esteem between the two clinical groups, some evidence of OCD specific effects emerged. Specifically, the self-esteem of the obsessionals was much more contingent on other people, and they were also more sensitive to blame and criticism. A limitation of the Ehntholt et al. (1999) study, however, is the small sample size in that study (e.g., only 16

of the participants were included in the OCD sample). Among nonclinical participants, Pence and Rice (2002) found OC symptoms to be negatively associated with self-esteem. Indeed, a reasonable extrapolation of the McFall and Wollersheim (1979) model is that self-esteem may be an important mediator between the association of maladaptive perfectionism and OCD, a model recently tested by Pence and Rice (2002). Consistent with that model, Pence and Rice (2002) found that self-esteem mediated the association between perfectionistic discrepancy and OC symptoms.

As noted above, McFall and Wollersheim (1979) called for actively working to enhance the self-esteem of OCD sufferers in the treatment process. In contrast, Ehntholt et al. (1999) argued that cognitively disputing the beliefs characteristic of OCD may be sufficient and that self-esteem need not necessarily be a target of intervention. The latter argument is supported by the direct effect of perfectionistic discrepancy in predicting OC symptoms and self-esteem. It logically follows that to decrease OC symptoms and to enhance self-esteem, you need to decrease maladaptive perfectionism through the disputation of unreasonable perfectionistic expectations. The model tested by Pence and Rice (2002), however, suggests that the direct effects approach is missing something important (i.e., self-esteem accounts for the relationship between perfectionistic discrepancy and OC symptoms). Consequently, self esteem could be a more fruitful target of intervention. Prodromal symptoms of OCD, including lowered self-esteem, are not currently targeted in existing psychological treatments of OCD (Fava et al., 1995). Moreover, recent empirical findings indicate that self-critical perfectionism is somewhat resistant to short-term cognitive-behavioral approaches in the treatment of depression (Blatt et al., 1995). Thus, a frontal assault on self-critical perfectionism may prove to be

ineffectual. It is worth noting, however, that there are no published studies on perfectionism's effect on treatment outcome in samples of patients diagnosed with OCD (Antony et al., 1998), though Tallis (1996) describes the poor response to cognitive-behavior therapy (CBT) experienced by three highly perfectionistic compulsive washers. Clearly, additional research is needed to ascertain the effect that perfectionism has on the treatment of patients experiencing problematic OC symptoms.

METHODS

Participants and Procedures

A total of 89 men and 129 women, (N = 219, one with missing gender) volunteers were recruited through undergraduate and graduate teacher education courses and from undergraduate communication courses at a major research institution located in a moderately populated region of the Midwest. The average age of participants was 21.63. The racial/ethnic background of the sample was 82% White or Caucasian, 8% Black or African American, 1% Hispanic/Latino/Mexican American, 6% Asian or Asian-American, 1% Multicultural Mixed Race, 1% Native American/American Indian, and 1% Other. Lastly 79% of the participants were undergraduate students, whereas 21% of the participants were graduate students. Two participants were selected at random to receive a nominal cash prize. Additionally, some instructors afforded students extra-credit points for their participation.

All participants in the study completed the FMPS, the APS-R, the SEI, the PI, and a brief demographic sheet. To control for sequencing effects, different orderings of study questionnaires were used.

Measures

Almost Perfect Scale-Revised (APS-R; Slaney et al., 2001). The APS-R is a 23-item self-report measure tapping three dimensions of perfectionism. Items are rated on a 7-point Likert scale (1 = *strongly disagree*, 7 = *strongly agree*), with higher scores indicating increased levels of perfectionism. The instrument assesses individual differences in personal standards (e.g., "I set very high standards for myself"), order (e.g.,

"I like to always be organized and disciplined)", and perfectionistic discrepancy (e.g., "My performance rarely measures up to my standards").

Both adequate reliability and validity has been established for the APS-R. In a sample of college students, Cronbach coefficients for the APS-R subscales ranged from .85 to .92 (Slaney et al., 2001). Additionally, APS-R subscales correlate with other perfectionism measures in expected directions (Slaney et al., 2001). Generally APS-R dimensions also correlate with various measures of psychological adjustment (e.g., self-esteem and depression) in expected directions (Slaney et al., 2001). The entire APS-R was administered but, as indicated earlier, only the scores on the Discrepancy subscale were of interest. This APS-R dimension is most consistently associated with psychopathology and therefore is the variable most salient to the current study.

Multidimensional Perfectionism Scale (FMPS; Frost et al., 1990). The FMPS is a 35-item self-report measure of perfectionism that measures six dimensions of perfectionism. These dimensions include Concern over Mistakes (COM), Personal Standards (PS), Parental Criticism (PC), Parental Expectations (PE), Doubts about Actions (DA), and Organization (O). Items are rated on a 7-point Likert scale (1 = *strongly disagree,* 7 = *strongly agree*), with higher scores indicating more perfectionism. Though the entire FMPS was administered, as indicated earlier, only the scores on the COM subscale were of interest. A sample item from the COM subscales is, "People will probably think less of me if I make a mistake."

The FMPS is a psychometrically sound measure with adequate reliability and validity. Across a series of studies of college students, Cronbach's coefficient alphas for the FMPS subscales ranged from .70 to .93 (Frost et al., 1990; Frost et al., 1993; Frost,

Lahart, & Rosenblate, 1991; Rice et al., 1998; Rice & Mirzadeh, 2000). Additionally, associations between FMPS subscales and other measures of perfectionism have been found in expected directions, and FMPS subscales also relate to various measures of psychological adjustment in expected directions (Frost et al., 1993; Rice et al., 1998; Slaney et al. 2001).

Padua Inventory (PI; Sanavio, 1988). The PI is a comprehensive 60-item self-report inventory of obsessive and compulsive problems. Items (e.g., "Unpleasant thoughts come into my mind against my will and I cannot get rid of them") are rated on a 5-point Likert scale (0 = *not at all,* 4 = *very much*). The total score is obtained by summing the 60 items. Higher scores reflect increased interference in routine daily functioning as a function of OC problems.

The PI is a psychometrically sound instrument with satisfactory reliability and validity. Across two studies, the PI demonstrated good internal consistency (Sanavio, 1988; Sternberger & Burns, 1990b). Test-retest reliability (over a one month period) was found to be .78 for males and .83 for females (Sanavio, 1988). In terms of validity, the PI relates to other OC measures in expected directions, it correlates with other indicators of psychological adjustment in expected directions, and it discriminates between patients diagnosed with OCD and patients diagnosed with other neurotic disorders (Sanavio, 1988; Sternberger & Burns, 1990b).

Rosenberg Self-Esteem Inventory (SEI; Rosenberg, 1965). The SEI is a widely used measure that provides a general index of self-esteem. It is an efficient measure consisting of only 10 items. The SEI contains both positively and negatively worded items. Items (e.g., "I feel that I have a number of good qualities") are rated on a 4-point

Likert scale (1 = *strongly agree,* 4 = *strongly disagree).* The psychometric strengths of this measure have been clearly demonstrated (see Blascovich & Tomaka, 1991). Goldsmith (1986) provided estimates of internal consistency reliability ranging from .86 to .93. Over a two week time period, test-retest reliability was .85 (Crandell, 1973). With respect to the validity of the instrument, SEI scores have been found to correlate in expected directions with other indicators of psychological adjustment (Rosenberg, 1965).

Demographic sheet. All participants completed a demographic sheet, which solicited information on the age, gender, and ethnicity of the participants.

RESULTS

Descriptive Statistics and Correlation Analyses

Means, standard deviations, scale ranges, and reliability estimates are summarized in Table 1. Estimates of internal consistency for the measures were quite good, with Cronbach's coefficients of .87, .93, .88, and .95 for COM, Discrepancy, self-esteem, and OC symptoms, respectively. The correlations among COM, Discrepancy, self-esteem, and OC symptoms are displayed in Table 2. As hypothesized, COM was positively correlated with OC symptoms ($r = .484$, $p < .01$) and inversely correlated with self-esteem ($r = -.388$, $p < .01$). Also as hypothesized, Discrepancy was positively correlated with OC symptoms ($r = .471$, $p < .01$) and inversely correlated with self-esteem ($r = -.604$, $p < .01$). Furthermore, as hypothesized, self-esteem was inversely correlated with OC symptoms ($r = -.264$). The pattern and direction of correlations supported the first five hypotheses.

Table 1

Subscale Means, Standard Deviations, and Reliability Estimates

	M	*SD*	α
APS-R			
Discrepancy	40.42	13.60	.93
FMPS			
Concern over mistakes	43.00	23.57	.87
PI	40.04	28.66	.95
SEI	32.97	4.64	.88

Note: APS-R = almost perfect scale-revised; FMPS = Frost multidimensional perfectionism scale; PI = Padua inventory; SEI = Rosenberg self-esteem inventory.

Table 2

Correlations between Perfectionism, Obsessive-Compulsive Symptoms, and Self-Esteem

	1	2	3	4
1. Discrepancy	1.00			
2. Concern over mistakes	.55	1.00		
3. Obsessive-compulsive symptoms	.47	.48	1.00	
4. Self-esteem	-.60	-.39	-.26	1.00

Mediational Analyses

The sixth hypothesis stipulated that self-esteem would mediate the association between COM and OC symptoms. This hypothesis was tested using procedures described by Baron and Kenny (1986). The overall assessment of mediational models requires several steps. A significant association must exist between the predictor (COM) and criterion (OC symptoms), and between the predictor and mediator (self-esteem). If those two relationships can be established, the formal test of mediation involves assessing the change in the association between the predictor and criterion once the mediator is controlled. Moreover, the mediator must be shown to have a significant association with the criterion. Full mediation is supported when a previously significant association between the predictor and criterion is reduced to non-significance after controlling for the mediator.

Multiple regression was used to test the mediational model of COM, self-esteem, and OC symptoms. COM accounted for significant variation in PI scores, $R^2 = .23$, $F(1, 217) = 66.25$, $\beta = .48$, $p < .001$, and also accounted for significant variation in the mediator, SEI scores, $R^2 = .15$, $F(1, 217) = 38.39$, $\beta = -.39$, $p < .001$. In the final equation, COM and SEI were simultaneously entered in an equation predicting PI scores.

This analysis revealed that both predictors accounted for significant variation in OC symptoms, $R^2 = .24$, $F(2, 216) = 34.26$, $p < .001$. In contrast to what was predicted, COM continued to account for significant variation in PI scores after partialling the effects of self-esteem, $\beta = .45$, $p < .001$. Furthermore, self-esteem was not significantly associated with PI scores in this final equation, $\beta = .-.09$, $p > .05$.

The seventh hypothesis stipulated that self-esteem would mediate the association between Discrepancy and OC symptoms. The same data analytic strategy was used to test the mediational model with Discrepancy that was used above. Discrepancy accounted for significant variation in PI scores, $R^2 = .22$, $F(1, 217) = 61.88$, $\beta = .47$, $p < .001$, and also accounted for significant variation in the mediator, SEI scores, $R^2 = .36$, $F(1, 217) = 124.31$, $\beta = -.60$, $p < .001$. In the final equation, Discrepancy and SEI were simultaneously entered in an equation predicting PI scores. This analysis revealed that both predictors accounted for significant variation in OC symptoms, $R^2 = .22$, $F(2, 216) = 30.91$, $p < .001$. As above, controlling for the effects of self-esteem, perfectionism, in this case Discrepancy, continued to account for significant variation in PI scores, $\beta = .49$, $p < .001$. Again, self-esteem was not significantly associated with PI scores in this final equation, $\beta = .03$, $p > .05$.

DISCUSSION

Consistent with analytic (e.g., Jones, 1918; Mallinger, 1984; Mallinger & DeWyze, 1992; Salzman, 1979; Straus, 1948), cognitive (e.g., Beck, Emery, & Greenberg, Guidano & Liotti, 1983; McFall & Wollersheim, 1979), and behavioral theoretical accounts of OC symptoms (e.g., McAndrews, 1989) and previous empirical research (e.g., Antony, et al., 1998; Frost & Steketee, 1997, Rice & Pence, 2006; Rhéaume et al., 1995), the findings from this study link perfectionism to OC symptoms.

As predicted, perfectionistic discrepancy (i.e., the perceived discrepancy between performance expectations and self-evaluated performance) was positively associated with OC symptoms. This finding is consistent with recent empirical findings indicating that perfectionistic discrepancy plays a distinctive role in the conceptualization of perfectionism with respect to OC symptoms (Rice & Pence, 2006). The association between perfectionistic discrepancy and OC symptoms, however, has yet to be established in a clinical sample (i.e., people diagnosed with OCD). Examining this relationship in a clinical sample is an important area of future inquiry. If this relationship is replicated in a study of patients diagnosed with OCD, cognitive models of OCD could easily be expanded to incorporate the concept of perfectionistic discrepancy into their respective frameworks. Specifically, the conflict arising out of differences between one's self-standards and one's actual performance could be targeted with cognitive interventions. Consistent with McFall and Wollersheim's (1979) model, when working with highly perfectionistic OCD patients, it may be important to challenge the notion held by many OC sufferers that their worth is linked to their performance and that falling short should result in punishment and condemnation.

In short, the APS-R, with its ability to measure perfectionistic discrepancy, remains a largely untapped but promising measure in further examining the association between perfectionism and OC symptoms in both clinical and nonclinical samples (Rice & Pence, 2006). Moreover, there has been no published research utilizing the APS-R in comparisons of perfectionism across the anxiety disorders. The one published study that compared perfectionism scores across a broad range of anxiety disorders employed both the FMPS and the HMPS (Antony et al., 1998), but failed to include the APS-R. With the utility of the APS-R now firmly established (see Slaney et al., 2002 for a further review of this literature) including the APS-R in this line of inquiry seems warranted.

COM or excessive concerns about making mistakes is "the most central component of perfectionism" in the FMPS (Frost et al., 1990, p. 454). Moreover, Shafran and Mansell (2001) identified COM as being one of the dimensions of perfectionism most salient to the construct of perfectionism. As predicted, COM was positively associated with OC symptoms. This finding is consistent with other studies that have examined the association between COM and OC symptoms in both clinical (Antony et al., 1998; Frost & Steketee, 1997) and nonclinical samples (Frost et al., 1990; Frost et al., 1994; Rhéaume et al., 1995; Rice & Pence, 2006). With its ability to tap COM, the FMPS has proved useful in clarifying the relationship between perfectionism and OC symptoms. A potential treatment implication may be the importance of targeting COM in the treatment process. Cognitive strategies could easily be incorporated into existing cognitive models of OCD that would help OC sufferers shift their focus away from making mistakes toward the mastery of goals.

Further research employing both the APS-R and the FMPS should advance the efforts of the OCCWG (1997) in developing a standardized set of cognitive instruments for OCD and should correspondingly advance the understanding of the cognitive process characteristic of individuals with OCD. The increased understanding of the relationship between perfectionism and OC symptoms that would likely stem from the inclusion of these measures in studies examining this relationship has the very real potential to yield more efficacious cognitive interventions aimed at treating OC difficulties. OC sufferers most likely to benefit from this line of research include pharmacological nonresponders, those who fail to comply with or benefit from traditional behavioral approaches, individuals who do not exhibit overt compulsions, and patients with severe comorbid conditions such as depression (van Oppen & Arntz, 1994). These OC sufferers should also benefit from increased research into the five other dysfunctional beliefs proposed by the OCCWG (1997) as being important in OCD including overimportance of thoughts, inflated responsibility, intolerance of uncertainty, excessive concern about the importance of controlling one's thoughts, and overestimation of threat. Most certainly, the obsessive beliefs questionnaire (OBS; OCCWG, 2003), a newly developed measure tapping the cognitive aspects of OCD, will play an important role in this line of inquiry (Frost & DiBartolo, 2002).

To complement the important efforts that have been undertaken to better understand the dysfunctional beliefs, such as extreme maladaptive perfectionism, associated with OC symptoms, experimental research is needed to ascertain how targeting dysfunctional beliefs in the treatment process effects treatment outcome. To date, there are no published studies on perfectionism's effect on treatment outcome in

samples of patients diagnosed with OCD (Antony et al., 1998). Moreover, maladaptive perfectionists have not responded as positively as others to cognitive, interpersonal, or medical interventions for depression (Blatt, Zuroff, Bondi, Sanislow, & Pilkonis, 1998; Zuroff et al., 2000). Clearly research is needed to determine whether the maladaptive perfectionism that is associated with OC symptoms is similarly intransigent. Research is also needed to determine the effect that other dysfunctional thoughts have on treatment outcome and whether or not the dysfunctional thoughts associated with OC symptoms are enduring structures that cut across situations (OCCWG, 1997).

As predicted, both perfectionistic discrepancy and COM were found to be negatively associated with self-esteem, which is consistent with both theory (e.g., Hamachek, 1978; Rice et al., 1998; Sorotzkin, 1985) and numerous recent empirical findings that have found maladaptive dimensions of perfectionism to be negatively associated with self-esteem (e.g., Ashby & Rice, 2002; Preuser et al., 1994; Rice et al., 1998; Slaney et al., 2001).

Moreover, despite the obvious links between OC symptoms and measures of adjustment such as self-esteem, there is a paucity of research that has examined this relationship. As predicted in this study, OC symptoms were negatively associated with self-esteem. These findings are consistent with Ehntholt et al.'s (1999) exploratory study into the relationship between OCD and self-esteem, and Pence and Rice's (2002) investigation into the relationship between OC symptoms and self-esteem in a nonclinical sample.

Contrary to what was predicted, however, self-esteem did not mediate the association between perfectionistic discrepancy and OC symptoms. This finding is in

contrast to an earlier finding by Pence and Rice (2002) in which self-esteem did mediate the association between perfectionistic discrepancy and OC symptoms. One possible explanation for this different result involves the manner in which OC symptoms were measured in the two studies. Although both studies examined OC symptoms, the studies operationalized the construct differently. Specifically, OC symptoms were measured by the CAC-R in the former investigation, while OC symptoms were measured by the PI in the current study. The CAC-R measures impairment in daily activities due to OC symptoms and is limited by its exclusive focus on the behavioral symptoms of OCD. In contrast, the PI is the most comprehensive self-report instrument for OC symptoms (Sternberger, 1993), and it measures both obsessions and compulsions, thus tapping both the behavioral and cognitive components of OC phenomena. As the more comprehensive measure, the PI does a better job of measuring unique differentiated OC qualities. Given the salient differences between these two measures, an argument can be made that although the two studies were interested in the same conceptual model, the different operationalizations of OC symptoms resulted in somewhat different models subjected to the analyses. To date, no published study has examined the correlations between the CAC-R and the PI, but if the correlations between these two measures were examined in the same study with the same sample, and if they were to be relatively low, that would lend credence to the argument that different models were tested.

With the consistently significant correlations between COM and perfectionistic discrepancy (e.g., Slaney et al., 2001), it was also hypothesized that self-esteem would mediate the association between COM and OC symptoms. Contrary to what was predicted, however, self-esteem also failed to mediate this relationship. Of interest would

be whether or not self-esteem would mediate the relationship between COM and OC symptoms as measured by the CAC-R. Perhaps self-esteem mediates the relationship between maladaptive dimensions of perfectionism and impairment in daily activities due to OC symptoms but not OC symptoms as measured by the PI. Future research is needed to examine this possibility.

In their cognitive-behavioral model of OCD, McFall and Wollersheim (1979) suggest that it is important to target the self-esteem of OC sufferers in the treatment process. The findings stemming from this investigation do not support the McFall and Wollersheim (1979) model. Rather, the findings lend credence to Ehntholt et al.'s (1999) argument that cognitively disputing the beliefs characteristic of OCD is sufficient and that it is not important to target self-esteem in the treatment process. Their argument is supported by the direct effect of both perfectionistic discrepancy and COM in predicting OC symptoms and self-esteem. It logically follows that to decrease OC symptoms and to enhance self-esteem, you need to decrease maladaptive perfectionistic beliefs through the disputation of unreasonable perfectionistic expectations. The argument in support of the direct effects approach is buttressed by the fact that self-esteem did not account for the relationship between perfectionistic discrepancy and OC symptoms or for the relationship between COM and OC symptoms.

Limitations of the study should be considered. First, the study relied on a convenient, nonclinical sample. Therefore, appropriate caution should be exercised in generalizing the findings. And although the sample size was large, Caucasian students were disproportionately represented in the sample. In the context of literature indicating that cultural factors play a role in OC symptoms, (Dulaney & Fiske, 1994), inclusion of a

greater number of diverse participants seems warranted. Additionally, the study relied solely on self-report measures, raising the issue of monomethod bias. Future studies might include combination methods such as observational/behavioral data, significant-other reports of OC difficulties, and interview data in this line of research. The present study examined OC symptoms in a nonclinical sample rather than mental health diagnoses proper. The measure used in the present study is particularly appropriate for examining OC symptoms in a nonclinical sample (Sternberger, 1993). However, as noted earlier, additional research is needed to replicate these findings in a clinical sample. To date, most of the research on the associations between perfectionism and OC symptoms has been conducted in nonclinical samples (Frost & DiBartolo, 2002). Findings from studies employing clinical samples should be compared to those from nonclinical samples. Another limitation of the study is its correlational design. Future research employing experimental designs is needed to determine whether the variables in the current study are causally related. Moreover, research utilizing experimental designs is needed to support speculations made regarding the treatment implications of this study.

In summary, the results from the current study provide additional support for the link between perfectionism and OC symptoms. Both the APS-R and the FMPS with their ability to each tap a core maladaptive dimension of perfectionism (i.e., perfectionistic discrepancy and COM, respectively) can be useful in further clarifying the relationship between perfectionism and OC symptoms. In the present study, both perfectionistic discrepancy and COM were significantly associated with OC difficulties. Moreover, perfectionistic discrepancy, COM, and OC symptoms were all negatively associated with self-esteem. Contrary to what was predicted, however, self-esteem did

not mediate the association between perfectionistic discrepancy and OC symptoms or the relationship between COM and OC symptoms. Consequently, the findings from this study do not support the McFall and Wollersheim (1979) model or their assertion that it is necessary to target self-esteem as part of an overall cognitive-behavioral approach to treating OC difficulties. Rather, the results provide some preliminary support for Ehntholt et al.'s (1999) position that cognitively disputing the unreasonable beliefs characteristic of OC sufferers is sufficient and that self-esteem need not be a target of intervention, though experimental research is needed to further corroborate that stance.

"Ultimately, the importance of the relationship between perfectionism and psychopathology will be determined by the relevance of perfectionism to the etiology and treatment of particular disorders" (Antony et al., 1998, p. 1153). Though more work is needed to be done with respect to clarifying the exact nature of the relationship between perfectionism and OC symptoms, there is now clear empirical support for this association. Experimental research on perfectionism's effect on treatment outcome in samples of patients with clinically severe OC symptoms would significantly advance this line of inquiry. Taking this next step will get us that much closer to bringing effective treatment interventions to the full spectrum of individuals whose lives are disrupted by problematic OC symptoms.

APPENDICES

APPENDIX A

THE ALMOST PERFECT SCALE-REVISED

Instructions: The following items are designed to measure certain attitudes people have toward themselves, their performance, and toward others. It is important that your answers be true and accurate for you. In the space next to the statement, please enter a number from "1" (strongly disagree) to "7" (strongly agree) to describe your degree of agreement with each item.

Strongly Disagree 1	Disagree 2	Slightly Disagree 3	Neutral 4	Slightly Agree 5	Agree 6	Strongly Agree 7

_____ 1. I have high standards for my performance at work or at school.

_____ 2. I am an orderly person.

_____ 3. I often feel frustrated because I can't meet my goals.

_____ 4. Neatness is important to me.

_____ 5. If you don't expect much out of yourself you will never succeed.

_____ 6. My best just never seems to be good enough for me.

_____ 7. I think things should be put away in their place.

_____ 8. I have high expectations for myself.

_____ 9. I rarely live up to my high standards.

_____ 10. I like to always be organized and disciplined.

_____ 11. Doing my best never seems to be enough.

_____ 12. I set very high standards for myself.

_____ 13. I am never satisfied with my accomplishments.

_____ 14. I expect the best from myself.

_____ 15. I often worry about not measuring up to my own expectations.

_____ 16. My performance rarely measures up to my standards.

_____ 17. I am not satisfied even when I know I have done my best.

_____ 18. I am seldom able to meet my own high standards for performance.

_____ 19. I try to do my best at everything I do.

_____ 20. I am hardly ever satisfied with my performance.

_____ 21. I hardly ever feel that what I've done is good enough.

_____ 22. I have a strong need to strive for excellence.

_____ 23. I often feel disappointment after completing a task because I know I could have done better.

APPENDIX B

FROST MULTIDIMENSIONAL PERFECTIONISM SCALE

Instructions: Listed below are several statements. In the space next to the statement, please enter a number from "1" (disagree strongly) to "5" (agree strongly) to what degree you agree with each statement.

DISAGREE STRONGLY 1	DISAGREE 2	NEUTRAL 3	AGREE 4	AGREE STRONGLY 5

_____ 1. My parents set very high standards for me.

_____ 2. Organization is very important to me.

_____ 3. As a child, I was punished for doing things less than perfect.

_____ 4. If I do not set the highest standards for myself, I am likely to end up as a second-rate person.

_____ 5. My parents never tried to understand my mistakes.

_____ 6. It is important to me that I be thoroughly competent in everything I do.

_____ 7. I am a neat person.

_____ 8. I try to be an organized person.

_____ 9. If I should fail at work/school, I am a failure as a person.

_____ 10. I should be upset if I make a mistake.

_____ 11. My parents wanted me to be the best at everything.

_____ 12. I set higher goals than most people.

_____ 13. If someone does a task at work/school better than I, then I feel like I failed the whole task.

_____ 14. If I fail partly, it is as bad as being a complete failure.

_____ 15. Only outstanding performance is good enough in my family.

_____ 16. I am very good at focusing my efforts on attaining a goal.

_____ 17. Even when I do something very carefully, I often feel that it is not quite right.

_____ 18. I hate being less than the best at things.

_____ 19. I have extremely high goals.

_____ 20. My parents have expected excellence from me.

Instructions: Listed below are several statements. In the space next to the statement, please enter a number from "1" (disagree strongly) to "5" (agree strongly) to what degree you agree with each statement.

DISAGREE STRONGLY 1	DISAGREE 2	NEUTRAL 3	AGREE 4	AGREE STRONGLY 5

_____ 21. People will probably think less of me if I make a mistake.

_____ 22. I never felt like I could meet my parents' expectations.

_____ 23. If I do not do as well as other people, it means I am an inferior human being.

_____ 24. Other people seem to accept lower standards from themselves than I do.

_____ 25. If I do not do well all the time, people will not respect me.

_____ 26. My parents have always had higher expectations for my future than I have.

_____ 27. I try to be a neat person.

_____ 28. I usually have doubts about the simple everyday things I do.

_____ 29. Neatness is very important to me.

_____ 30. I expect higher performance in my daily tasks than most people.

_____ 31. I am an organized person.

_____ 32. I tend to get behind in my work because I repeat things over and over.

_____ 33. It takes me a long time to do something "right."

_____ 34. The fewer mistakes I make, the more people will like me.

_____ 35. I never felt like I could meet my parents' standards.

APPENDIX C

PADUA INVENTORY

Instructions: The following statements refer to thoughts and behaviors which may occur to everyone in everyday life. For each statement, choose the reply which best seems to fit you and the degree of disturbance which such thoughts or behaviors may create. Rate your replies as follows:

0 = not at all
1 = a little
2 = quite a lot
3 = a lot
4 = very much

_____ 1. I feel my hands are dirty when I touch money.

_____ 2. I think even slight contact with bodily secretions (perspiration, saliva, urine, etc.) may contaminate my clothes or somehow harm me.

_____ 3. I find it difficult to touch an object when I know it has been touched by strangers or by certain people.

_____ 4. I find it difficult to touch garbage or dirty things.

_____ 5. I avoid using public toilets because I'm afraid of disease and contamination.

_____ 6. I avoid using public telephones because I am afraid of contagion and disease.

_____ 7. I wash my hands more often and longer than necessary.

_____ 8. I sometimes have to wash or clean myself simply because I think I may be dirty or "contaminated."

_____ 9. If I touch something I think is "contaminated," I immediately have to wash or clean myself.

_____ 10. If an animal touches me, I feel dirty and immediately have to wash myself or change my clothing.

_____ 11. When doubts and worries come to my mind, I cannot rest until I have talked them over with a reassuring person.

_____ 12. When I talk, I tend to repeat the same things and the same sentences several times.

_____ 13. I tend to ask people to repeat the same things to me several times consecutively, even though I did understand what they said the first time.

Instructions: The following statements refer to thoughts and behaviors which may occur to everyone in everyday life. For each statement, choose the reply which best seems to fit you and the degree of disturbance which such thoughts or behaviors may create. Rate your replies as follows:

0 = not at all
1 = a little
2 = quite a lot
3 = a lot
4 = very much

_____ 14. I feel obliged to follow a particular order of dressing, undressing, and washing myself.

_____ 15. Before going to sleep, I have to do certain things in a certain order.

_____ 16. Before going to bed, I have to hang up or fold my clothes in a special way.

_____ 17. I feel I have to repeat certain numbers for no reason.

_____ 18. I have to do things several times before I think they are properly done.

_____ 19. I tend to keep on checking things more often than necessary.

_____ 20. I check and recheck gas and water taps and light switches after turning them off.

_____ 21. I return home to check doors, windows, drawers, etc., to make sure they are properly shut.

_____ 22. I keep on checking forms, documents, checks, etc. in detail to make sure I have filled them in correctly.

_____ 23. I keep on going back to see that matches, cigarettes, etc. are properly extinguished.

_____ 24. When I handle money, I count and recount it several times.

_____ 25. I check letters carefully many times before posting them.

_____ 26. I find it difficult to make decisions, even about unimportant matters.

_____ 27. Sometimes I am not sure I have done things which in fact I know I have done.

_____ 28. I have the impression that I will never be able to explain things clearly, especially when talking about matters that involve me.

Instructions: The following statements refer to thoughts and behaviors which may occur to everyone in everyday life. For each statement, choose the reply which best seems to fit you and the degree of disturbance which such thoughts or behaviors may create. Rate your replies as follows:

0 = not at all
1 = a little
2 = quite a lot
3 = a lot
4 = very much

_____ 29. After doing something carefully, I still have the impression I have either done it badly or not finished it.

_____ 30. I am sometimes late because I keep on doing certain things more often than necessary.

_____ 31. I invent doubts and problems about most of the things I do.

_____ 32. When I start thinking about things, I become obsessed with them.

_____ 33. Unpleasant thoughts come into my mind against my will and I cannot get rid of them.

_____ 34. Obscene or dirty words come into my mind and I cannot get rid of them.

_____ 35. My brain constantly goes its own way, and I find it difficult to attend to what is happening round me.

_____ 36. I imagine catastrophic consequences as a result of absent-mindedness or minor errors which I make.

_____ 37. I think I worry at length about having hurt someone without knowing it.

_____38. When I hear about a disaster, I think it is somehow my fault.

_____ 39. I sometimes worry at length for no reason that I have hurt myself or have some \disease.

_____ 40. I sometimes start counting objects for no reason.

_____ 41. I feel I have to remember completely unimportant numbers.

_____ 42. When I read, I have the impression I have missed something important and \must go back and reread the passage at least two or three times.

Instructions: The following statements refer to thoughts and behaviors which may occur to everyone in everyday life. For each statement, choose the reply which best seems to fit you and the degree of disturbance which such thoughts or behaviors may create. Rate your replies as follows:

0 = not at all
1 = a little
2 = quite a lot
3 = a lot
4 = very much

_____ 43. I worry about remembering completely unimportant things and make an effort \not to forget them.

_____44. When a thought or doubt comes into my mind, I have to examine it from all points of view and cannot stop until I have done so.

_____ 45. In certain situations, I am afraid of losing my self-control and doing embarrassing things.

_____ 46. When I look down from a bridge or a very high window, I feel an impulse to \throw myself into space.

_____ 47. When I see a train approaching, I sometimes think I could throw myself under its wheels.

_____ 48. At certain moments, I am tempted to tear my clothes off in public.

_____ 49. While driving, I sometimes feel an impulse to drive the car into something.

_____ 50. Seeing weapons excites me and makes me think violent thoughts.

_____ 51. I get upset and worried at the sight of knives, daggers, and other pointed objects.

_____ 52. I sometimes feel something inside of me which makes me do things which are really senseless and which I do not want to do.

_____ 53. I sometimes feel the need to break or damage things for no reason.

_____ 54. I sometimes have an impulse to steal other people's belongings, even if they are of no use to me.

_____ 55. I am sometimes almost irresistibly tempted to steal something from the supermarket.

Instructions: The following statements refer to thoughts and behaviors which may occur to everyone in everyday life. For each statement, choose the reply which best seems to fit you and the degree of disturbance which such thoughts or behaviors may create. Rate your replies as follows:

0 = not at all
1 = a little
2 = quite a lot
3 = a lot
4 = very much

_____ 56. I sometimes have an impulse to hurt defenseless children or animals.

_____ 57. I feel I have to make special gestures or walk in a certain way.

_____ 58. In certain situations, I feel an impulse to eat too much, even if I am then ill.

_____ 59. When I hear about a suicide or crime, I am upset for a long time and find it difficult to stop thinking about it.

_____ 60. I invent useless worries about germs and diseases.

APPENDIX D

ROSENBERG SELF-ESTEEM INVENTORY

Instructions: In the space next to the statement, please enter a number from "1" (strongly disagree) to "4" (strongly agree) indicating to which you agree with each statement.

Strongly Disagree 1	Disagree 2	Agree 3	Strongly Agree 4

_____ 1. I feel that I am a person of worth, at least on an equal plane with others.

_____ 2. I feel that I have a number of good qualities.

_____ 3. All in all, I am inclined to feel that I am a failure.

_____ 4. I am able to do things as well as most other people.

_____ 5. I feel I do not have much to be proud of.

_____ 6. I take a positive attitude toward myself.

_____ 7. On the whole, I am satisfied with myself.

_____ 8. I wish I could have more respect for myself.

_____ 9. I certainly feel useless at times.

_____ 10. At times I think I am no good at all.

APPENDIX E

DEMOGRAPHIC SHEET

Please circle the number next to your gender:

(1) Male
(2) Female

1. How old are you? _____ **years**

2. Please circle the number next to your Race/Ethnicity or please describe the specific group that you identify with the most in the blank next to your ethnicity (for example, Chinese American, German, Navajo, Alaskan Aleut):

   (1) Asian or Asian-American _____

   (2) Black, African-American _____

   (3) Hispanic, Latino, Mexican-American _____

   (4) Pacific Islander _____

   (5) Native American or American Indian _____

   (6) White, European American _____

   (7) Multicultural Mixed Race _____

   (8) Other, please specify _____

APPENDIX F

INFORMED CONSENT FORM

Self-Esteem as a Mediator Between Perfectionism and Obsessive-Compulsive Symptoms

SUBJECT RESEARCH INFORMATION AND CONSENT FORM- Michigan State University

You are being asked to participate in a research study. This consent form provides you with information about the study. The investigator will describe this study to you and answer all of your questions. Read the information below and ask questions about anything you do not understand before deciding whether or not to take part.

Your participation is entirely voluntary and you can refuse to participate without penalty or loss of benefits to which you are otherwise entitled. You may take home an unsigned copy of this consent form to think about or discus with family or friends before making your decision. Note, you must be between the ages of 18 and 65 years old to participate in this research study.

What is this study? The purpose of this study is to learn about the associations between perfectionism, self-esteem, intrusive thoughts, and repetitive behaviors.

What will be done if you take part in this study? If you choose to participate in this study, you will complete paper-and-pencil questionnaires that contain questions about your personality and current adjustment. It will take you anywhere from 30 to 60 minutes to complete the questionnaires. There are no right or wrong responses to the items on the measures. You do not have to answer any question you do not wish to answer.

Where will participants go to complete the research questionnaires? You will complete the research questionnaires in a classroom or small meeting room on campus.

What are the possible discomforts and risks? There are no known risks involved in completing the questionnaires and many students find that they learn something about themselves from answering the items. Nonetheless, if answering the questions makes you feel uncomfortable, you may consider speaking to a counselor who may be able to help you with your reactions. (Contact information for campus counseling services appears at the end of this form).

What are the possible benefits to you and to others? You may benefit by participating in this study through increased awareness and self-understanding. You will also be contributing to knowledge regarding researchers' ability to understand college student adjustment.

Will you receive payment for your participation in this study? By participating in this study, you will be eligible to win one of two $50.00 cash prizes. At the time of your participation, an investigator will provide you with a brief form where you will be asked to provide your name and contact information. This form, along with the forms of the other study participants, will be placed in a box. At random, two forms will be drawn by one of the investigators to win the $50.00 cash prizes. Winning participants will be contacted so that they can collect their cash prize. Additionally, some professors offer extra-credit for research participation. If you have a professor who offers extra-credit for participating in research, an investigator, at your request, will confirm your participation in this study.

How will your privacy and confidentiality of your research records be protected? Your privacy will be protected to the maximum extent permissible by law. The following precautions will be taken to assure anonymity. Information that you provide will not be associated with your name or any other identifying information. Your name will not appear on any of the questionnaires and your name will not be included in any written report. Knowledge of your participation in this study is limited to the two investigators. Questionnaire responses and test score information will be stored only on one of the investigators' personal computers. The computer will be kept in his locked home office.

Who would you call if you have any questions? If you have questions about the study, contact Nancy Crewe, Ph.D., by phone: (517) 432-0606, e-mail: ncrewe@msu.edu, or regular mail: 433 Erickson Hall, East Lansing, MI. 48824. In case you have concerns about your rights as a research participant, or are dissatisfied at any time with any aspect of this study, you may contact anonymously, if you wish, Peter Vasilenko, Ph.D., Michigan State University's Chair of University Committee on Research Involving Human Subjects (UCRIHS) by phone: (517) 355-2180, fax: (517) 432-4503, e-mail: ucrihs@msu.edu, or regular mail: 202 Olds Hall, East Lansing, MI 48824.

If you have read the information above and consider yourself to be informed about this study's purpose, procedures, possible benefits and risks, please sign your name below indicating your agreement to participate in this research on a purely voluntary basis. Keep the other copy of the consent form for your records.

I have read the procedure described above. I agree to participate in the procedure and I have received a copy of this description

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(Sign your name here) **(Date)**

Campus Counseling Resource: Michigan State University Counseling Center, 207 Student Services, 517-355-8270.

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