Associations Between Obsessive-Compulsive Symptoms and Academic Self-Concept

The current study assessed associations among 4 obsessive-compulsive symptom clusters and academic performance in a sample of 147 college undergraduate students. Obsessive-compulsive symptoms were assessed using the Leyton Obsessional Inventory short form (LOI-SF; Cooper, 1970). Academic performance was assessed using the Academic Self-Concept Scale (ASCS; Reynolds, Ramirez, Magrina, & Allen, 1980). Negative, linear associations were observed between the obsessive-compulsive characteristics of doubting/repeating behaviors and academic self-concept, as well as between fears of contamination and academic self-concept. However, a curvilinear association suggested that the symptom cluster of checking behavior and attention to detail, when exhibited at a moderate level, was found to be associated with higher academic self-concept. The results may challenge previously held assumptions that obsessive-compulsive symptoms, regardless of type or severity, are negatively associated with psychosocial functioning.

Brent Findley
Renee V. Galliher
Utah State University

Obsessive-Compulsive Disorder (OCD) is a debilitating condition that affects approximately 2.5% of the adult population at some point in their lifetimes (American Psychiatric Association, Diagnostic and Statistical Manual of Mental Disorders, 2000). Characteristic features of OCD include anxiety-producing intrusive thoughts and repetitive anxiety-reducing rituals. The thoughts and rituals involved with OCD can span a wide array including irrational fears of germs accompanied by excessive-hand washing, overly critical moral judgment followed by excessive confession, and extreme doubting associated with constant checking (Valente, 2002). The diagnostic criteria for OCD include having both obsessions and compulsions. Obsessions are recurrent, inappropriate, persistent thoughts, impulses, or images that cause an extreme increase in anxiety. Compulsions are repetitive mental acts or overt behaviors that one performs to reduce the anxiety initially caused by the obsession (DSM-IV-TR [2000] text version). Compulsions serve to reduce the anxiety temporarily, but then catch the victim in a continual, vicious cycle that may interfere with daily functioning.

Much of the research performed on the symptoms of OCD has consistently demonstrated that they can be divided into four or five different categories and has suggested that the symptoms of OCD may exist on a continuum of severity. For example, a study examining the relationship between obsessive beliefs and obsessive-compulsive symptoms categorized symptoms into the following groups: contamination/washing, harm obsessions/checking, hoarding, symmetry, and ordering/unacceptable thoughts (Tolin, Woods, & Abramowitz, 2003). Mathews, Jang, Hami, and Stein (2004) examined the structure of obsessive symptoms in a nonclinical population. Four symptom clusters emerged including concerns about contamination (contamination factor); repeating behaviors or uncomfortable thoughts and doubts (doubts/repeating factor); checking behaviors, excessive attention to detail, honesty concerns, strict conscience, and strict routine (checking/detail factor); and taking a long time to...
dressed and to hang up and put away clothing, and belief in unlucky numbers (worries/just right factor). Certain symptoms originally thought to be exclusive to OCD were found to exist frequently in the nonclinical sample because they did not clearly discriminate between participants scoring in the upper quartile and the lower quartile. Together with the similarity in factor structure between clinical and nonclinical participants, the results suggested that obsessive-compulsive symptoms exist on a continuum and can be exhibited in a nonclinical population (Mathews et al., 2004). Thus, although some consistency has emerged in the literature examining clusters of symptoms, no standard formula for conceptualizing symptoms has been developed and widely accepted. Checking, contamination fears, doubts/repeating, and worries/just right feelings—the symptoms discussed by Mathews et al.—are four different categories of obsessive-compulsive symptoms that were of interest in this study.

The current study examined associations between obsessive-compulsive symptoms, measured as continuous variables in a nonclinical population, and academic self-concept. It was hypothesized that certain obsessive-compulsive symptoms may actually be associated with enhanced academic self-concept when shown at moderate levels. For example, attention to detail, checking behavior, and a sense of responsibility, shown at moderate levels, would be expected to enhance academic motivation, accuracy, and precision. Very low levels of these characteristics would theoretically be associated with lower academic motivation and carelessness, thus decreasing academic functioning. At very high levels, however, these characteristics become debilitating. Conversely, a linear association is predicted between other obsessive-compulsive characteristics and academic performance. Contamination fears, doubts/repeating, and worries/just right feelings are predicted to be associated with increasingly poor academic performance as they become more intense.

Very little research has examined associations between obsessive-compulsive symptoms, to any degree, and academic performance. Mrdjenovich and Bischof (2003) assessed this relationship in college-aged students and found a negative correlation between course grades and a global index of obsessive-compulsive symptoms. As the overall severity of obsessive-compulsive symptoms increased, academic performance decreased. This study only examined the linear relationship between academic performance and obsessive-compulsive symptoms. Other relationships, including a quadratic relationship, were not considered. It can be argued that those exhibiting the highest levels of symptoms were in the range of possible diagnosis of OCD. Also, the global measure used by Mrdjenovich and Bischof did not allow for the examination of associations between particular obsessive-compulsive symptom clusters and academic functioning; the linear relationship observed in their study may be true of certain obsessive-compulsive symptoms, but may not accurately reflect the association with other symptoms.

To demonstrate how the obsessive-compulsive symptom of checking might be positively associated with academic performance, two belief systems were examined. Responsibility and perfectionism are two constructs that have consistently demonstrated significant relationships with obsessive-compulsive symptoms. Wilson and Chambless (1999) used three measures of responsibility including the Pervasive Responsibility Measure, the Responsibility Questionnaire, and the Obsessional Beliefs Questionnaire—Responsibility Subscale and compared their results to an obsessive-compulsive measure, the Padua Inventory. They found that for all three measures, responsibility significantly contributed to the prediction of obsessive-compulsive symptoms, especially to the obsessive-compulsive symptom of checking. Lopotka and Rachman (1995) also demonstrated the relationship between perceived responsibility and compulsive checking, observing that when the level of perceived responsibility is decreased, the likelihood of compulsive checking also decreases.

Bouchard, Rheaume, and Ladouceur (1999) performed research in which responsibility and perfectionism were shown to be highly correlated with OCD and also showed that perfectionism can predict responsibility. Their study included moderately perfectionistic participants and highly perfectionistic participants. Participants were submitted to high and low responsibility situations and then tested for checking behaviors. Results demonstrated that both levels of perfectionistic participants increased checking behaviors in the high responsibility situation. However, checking behaviors were significantly increased only for those in the highly perfectionistic group, thus suggesting that perfectionism and responsibility interact to predict checking behaviors (Bouchard et al., 1999).

Perfectionism has also been found to be positively correlated with academic performance (Brown et al., 1999). Two dimensions of perfectionism, high personal standards and maladaptive concern over mistakes, were assessed. Results showed that an increase in personal standards was positively associated with more frequent study behavior, evaluation of the course as more important, and better grades across the semester. Maladaptive concern over mistakes was not related with better grades, but was associated with more frequent study behavior.
As shown by the aforementioned study, certain types of perfectionism can be related to better study habits and eventually to better grades. Perfectionism has been demonstrated to be a predictor of responsibility, which in turn, has been a good predictor of checking behaviors. The established associations among perfectionism, responsibility, and checking behaviors lead to the hypothesis that moderate levels of the obsessive-compulsive symptom of checking will be associated with higher academic performance. Whereas responsibility and perfectionism, when excessive, may be very debilitating, moderate levels of both constructs have been conceptualized as positive personality characteristics. Excessive responsibility and perfectionism lead to excessive obsessive-compulsive symptoms such as checking. Responsibility and perfectionism exhibited in moderate amounts should lead to moderate amounts of checking and beneficial results in certain areas of functioning, including academic performance.

In summary, obsessive-compulsive symptoms can be thought of as existing on a continuum with formal psychological diagnosis at the far extreme. Very little research has been done on obsessive-compulsive symptoms and their relationship with academic performance, but the research that has been performed has shown that severe symptoms do lead to academic impairment. However, the hypothesis that obsessive-compulsive symptoms shown at a lesser degree of severity might enhance academic performance has not been tested. Further, different types of obsessive-compulsive symptoms have been identified (i.e., checking, contamination fears, doubts/repeating, and worries/just right) and previous research has not addressed the possibility that different types of symptoms are differentially related to psychosocial functioning. Specifically, in the current study, it was proposed that when exhibited at a moderate level, the obsessive-compulsive symptom of checking would predict better academic functioning.

Methods

Design

The current study used a correlational design with self-report data to assess the relationship between the different types of obsessive-compulsive symptoms and academic self-concept.

Participants

Participants were 147 undergraduate students who completed an anonymous survey in exchange for credit in their psychology courses. All participants were over 18-years of age and provided verbal consent at testing time. Approximately half of the students were recruited from introductory psychology courses that fulfill general university requirements and ensure a broad sampling of university students. Additionally, students were recruited from advanced psychology courses and distance education courses in order to provide greater diversity with regard to age, geographic location, and other demographic variables. Participants were 89% White, 2% African American, 1.4% Native American, 4.1% Hispanic, and 3.4% Asian. Of the students, 42.2% were between 18- and 21-years old, 23.8% were between 22 and 24, 11.6% were between 25 and 29, 14.3% were between 30 and 39, and 8.2% were over 40-years-old. Freshmen participants comprised 27.9% of the students, 21.1% were sophomores, 21.1% were juniors, and 28.6% were seniors; 2 students did not report their grade.

Materials

Demographic form. The demographic form consists of standard demographic information, such as gender, age, grade, ethnicity, and educational status. Participants were assured that this information was to be used for the purpose of the present study only.

Leyton Obsessional Inventory short form (LOI-SF; Cooper, 1970). The Leyton Obsessional Inventory short form is a 30-item measure designed to assess obsessive-compulsive symptom severity in four categories. The scale yields four subscales: contamination, repeating/doubts, checking/details, and worries/just right. Ten items assess contamination fears (e.g., “I avoid using the public telephone because of possible contamination”), eight items assess repeating/doubts (e.g., “I usually have serious doubts about the simple, everyday things I do”), seven items assess checking/details (e.g., “I spend a lot of time every day checking things over and over again”), and three items comprise the worries/just right subscale (e.g., “Even when I do something very carefully, I often feel that it is not quite right”). Item 20 (e.g., “My major problem is repeated checking”) loads on both the repeating doubts factor and the checking/details factor. These questions assess the presence or absence of a symptom using a “true/false” format and scale scores represent the number of items endorsed. Approximately 50% of the items are reverse scored. Convergent, divergent, discriminative validity, and internal consistency of the original version have been shown to be strong (Stanley, Prather, Beck, & Brown, 1993). Three of the subscales demonstrated adequate internal consistency with the current sample (contamination: $\alpha = .69$, repeating/doubts: $\alpha = .73$, checking/details: $\alpha = .68$), while the worries/just right subscale yielded an unacceptably low alpha ($\alpha = .22$). Because of the poor internal consistency of the worries subscale it was dropped from analyses.
The Academic Self-Concept Scale (ASCS; Reynolds, Ramirez, Magrina, & Allen, 1980). The ASCS is a 40-item measure designed to assess participant self-concept regarding academic ability. The scale uses a 4-point Likert-type format ranging from strongly disagree to strongly agree. Negatively worded items are reverse scored so that higher scores represent stronger academic self-concept. A single score is obtained by summing the scores for all items. Sample items include “If I try hard enough, I will be able to get good grades” and “All in all, I feel I am a capable student”. Reynolds and colleagues reported good reliability ($\alpha = .91$) and moderate correlation with grade point average ($r = .40$). Cronbach’s alpha for the current sample demonstrated good internal consistency ($\alpha = .95$).

Procedure

A description of participation was provided during class time and posted on class websites. In order to recruit a wider range of students, participants were also recruited from a university distance education course delivered to off-campus sites via satellite (Psychological Statistics—a course which satisfies the requirements for several majors in the social sciences). Approximately 50 participants were recruited from the distance education course; many of these participants were nontraditional students and many resided in rural and remote communities. Distance education students requested a copy of the survey by e-mail from the first author and returned it via mail to the second author. Interested students recruited from the on-campus courses came to one of two scheduled survey administration sessions in large auditoriums. Survey completion took approximately 30-45 min and on-campus participants dropped their completed surveys in to a box before leaving. Following completion of the survey, on-campus participants signed a list, which was given to their instructor to verify participation. Off-campus students were given course credit when their surveys were received in the mail.

Results

Descriptive statistics. Table 1 contains means, standard deviations, and correlations among all study variables. Moderate to strong correlations emerged among all three obsessive-compulsive symptom clusters and all were significantly correlated with academic self-concept. In general, self-reported levels of contamination fears and repeating/doubting behaviors were lower than reports of checking behaviors/attention to detail. Subjective reports of academic self-concept were roughly normally distributed.

Primary analyses. Regression analyses with curve estimation were used to test both the linear and quadratic associations between the symptom clusters and academic self-concept. Results are summarized in Table 2. The linear model was highly statistically significant for the relationship between contamination fears and academic motivation ($p < .01$), while the quadratic model was non-significant ($p = .59$). The linear model for the relationship between the repeating/doubts cluster and academic motivation was also found to be significant ($p < .01$), while the quadratic model was again found to be non-significant ($p = .86$). The linear relationship between the checking/attention to detail cluster and academic motivation was also significant ($p < .05$). However, the quadratic model was observed to capture the association between checking/attention to detail and academic self-concept more powerfully ($p < .01$).

Discussion

The question of interest in this study was whether or not certain obsessive-compulsive symptom clusters, when exhibited at a moderate level, would be associ-
ated with higher academic performance. Among the four symptom clusters examined in the study, only the relationship between the checking/details symptom cluster and academic self-concept was found to be best explained by a curvilinear model. The relationships between the other symptom clusters and academic self-concept were best explained by a linear model.

The negative, linear relationship between both contamination fears and repeating/doubts and academic self-concept suggests that with increasing severity in either of these two symptom clusters, academic self-concept suffers. This is consistent with previous research, which reported negative linear associations between a global measure of obsessive-compulsive symptoms and academic performance (Mrdjenovich & Bischof, 2003). This may also suggest that the global scale of the Maudsley Obsessional-Compulsive Inventory (Hodgson & Rachman, 1977), used by Mrdjenovich and Bischof, may capture aspects of obsessive-compulsive symptomology that are more closely aligned with the contamination fears and repeating/doubts factors measured in the current study.

Table 2

<table>
<thead>
<tr>
<th>Symptom cluster</th>
<th>Model</th>
<th>Adj. $R^2$</th>
<th>$F$</th>
<th>df</th>
<th>$p$-value</th>
<th>beta</th>
<th>$t$-statistic</th>
<th>$p$-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Contamination</td>
<td>Linear</td>
<td>0.09</td>
<td>14.80</td>
<td>1,145</td>
<td>&lt; .01</td>
<td>-0.30</td>
<td>-3.85</td>
<td>&lt; .01</td>
</tr>
<tr>
<td></td>
<td>Quadratic*</td>
<td>0.08</td>
<td>7.51</td>
<td>2,144</td>
<td>&lt; .01</td>
<td>-0.12</td>
<td>-0.54</td>
<td>0.59</td>
</tr>
<tr>
<td>Repeating/doubts</td>
<td>Linear</td>
<td>0.18</td>
<td>33.86</td>
<td>1,145</td>
<td>&lt; .01</td>
<td>-0.44</td>
<td>-5.82</td>
<td>&lt; .01</td>
</tr>
<tr>
<td></td>
<td>Quadratic*</td>
<td>0.18</td>
<td>16.83</td>
<td>2,144</td>
<td>&lt; .01</td>
<td>0.04</td>
<td>0.18</td>
<td>0.86</td>
</tr>
<tr>
<td>Checking/details</td>
<td>Linear</td>
<td>0.02</td>
<td>4.05</td>
<td>1,145</td>
<td>&lt; .05</td>
<td>-0.16</td>
<td>-2.01</td>
<td>0.05</td>
</tr>
<tr>
<td></td>
<td>Quadratic*</td>
<td>0.06</td>
<td>6.08</td>
<td>2,144</td>
<td>&lt; .01</td>
<td>-0.68</td>
<td>-2.81</td>
<td>0.01</td>
</tr>
</tbody>
</table>

*Quadratic term added to linear model

High achieving students in academic settings commonly reference their OCD characteristics in jest. These findings, however, suggest that this familiar joke may have some basis in fact. Students, advisors, and educators may benefit from consideration of the potentially beneficial outcomes associated with moderate levels of these behaviors. With this information, students would be able to monitor their own habits while studying, doing homework, or taking tests. Knowing that it is helpful to make a few checks on their progress, and then performing those checks, students may greatly enhance their academic confidence and possibly even their performance. Of course, it is important to remember that these findings are correlational and any reference to causal pathways is speculative. Further,
our analyses emphasized prediction of students’ subjective experience of academic success, motivation, and ability. This measure of academic self-concept has been found to correlate moderately with grade point average (Reynolds et al., 1980), but it will be important in future research to examine associations with various measures of actual academic performance.

The sample for this study was drawn from both traditional campus-based classes and distance education courses, and participants represented the range of undergraduate grades roughly equally. This feature is both a strength and a challenge. The recruitment strategy maximized diversity in terms of age, socioeconomic status, and other demographic factors. However, it is unclear to what extent the patterns of association among the variables may be different for traditional campus-based students versus nontraditional students; data were not collected in such a way as to facilitate comparison of students recruited via the two strategies. Examination of specific pathways between obsessive-compulsive symptoms and academic performance separately for distance education students and on-campus students, men and women, and for other demographic groups will clarify associations in the general college student population.

In summary, these findings are significant for several reasons. Conventional wisdom has regarded anything defined as obsessive-compulsive as problematic. However, because certain obsessive-compulsive symptoms are strongly associated with perfectionism and responsibility, two constructs that when exhibited at moderate levels have been shown to be associated with higher academic functioning, they can also be associated with higher academic functioning. It is important to better understand the personality types associated with better academic functioning so more of the population can strive for desired academic outcomes.

References
Cooper, J. (1970). The Leyton Obsessional Inventory. *Psychological Medicine, 1*, 48-64.