Obsessive Compulsive Self-Syntonicity of Symptoms Scale: Development, Reliability and Validity

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ABSTRACT

One of the difficulties encountered by therapists working with individuals with obsessive-compulsive (OC) symptoms/disorder is the resistance of OC symptoms to change. A factor that may affect the prognosis for such individuals is the extent to which their symptoms result in positive or negative functional consequences. The current study describes the development, reliability, and validity of a new scale – the Obsessive Compulsive Self-Syntonicity of Symptoms Scale (OCSSSS) - that measures the positive and negative functional consequences of OC symptoms. Items were generated by the principal investigator and major professor after examining the research literature for OC and related disorders. Fifty-four items were generated, which yielded a robust, seven component structure through principal components analysis. Items were rated on a 1-5 Likert scale (1=extremely inconsistent - 5=extremely consistent) with an option of 'not applicable' (coded as '0'). Higher scores on the OCSSSS indicated more perceived functional consequences of OC symptoms in an individual's daily life. The sample consisted of 634 students, who responded to an advertisement describing general examples of OC symptoms and who completed several measures online, including: 1) Yale Brown Obsessive Compulsive Scale, Self Report (Y-BOCS-SR); 2)Obsessive Compulsive Inventory Revised (OCI-R); 3) University of Rhode Island Change Assessment (URICA); 4) self-report of frequency of prior/current therapy; evaluation of the effectiveness of prior therapy; evaluation of the expected effectiveness of future therapy; and willingness to participate in future therapy; and 5) social/work adjustment. The OCSSSS was reliable and most items correlated with total score. The OCSSSS's total score and individual component scores were correlated with symptom severity, symptom type, subjective evaluations of treatment experiences, willingness to participate in treatment, avoidance, work and social adjustment, and stage of change. Regression analyses indicated the OCSSSS significantly predicts stage of change, controlling for symptom severity.

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1.0 - Introduction

Individuals with OC symptoms vary in the extent to which they view their symptoms as problematic. The OCSSSS was developed to measure the extent to which an individual views his/her OC symptoms as desirable, consistent with self, and acceptable to others.

Estimates of obsessive compulsive disorder's (OCD) 12 month prevalence rates are approximately 1% (Barlow, 2008), with a lifetime prevalence ranging from 1.9-3.3% (Burnam, Golding, Karno, & Sorenson, 1988), indicating a substantial number of individuals suffering from either obsessive and/or compulsive symptoms. While substantial numbers of individuals suffer from OCD, recent research has also utilized nonclinical samples with OC symptoms. Burns, Formea, Keortge, and Sternberger (1995) found a striking similarity between clinical and nonclinical samples of individuals with OC symptoms and concluded that nonclinical samples are adequate for increasing our knowledge of OCD. While few investigations of the prevalence of OC symptoms in nonclinical populations have been undertaken, Frost, Steketee, Krause, and Trepanier (1995) found that only 9% of the individuals in their nonclinical sample reported no OC symptoms. In fact, these researchers found that the majority of their nonclinical sample reported multiple OC symptoms, and that the Y-BOCS interview can detect these symptoms in non-clinical populations. The generalizability of the results of this study, however, is limited, owing to the small sample size (Frost et al., 1995).

While early detection of OCD is critical for its treatment, studies have shown that individuals diagnosed with moderate to severe OC symptoms wait between 10-20 years after symptom onset before seeking treatment (Rasmussen & Tsuang, 1986), leading to symptoms that are highly integrated into individuals' lives. Symptoms that are highly syntonic/integrated with an individual's sense of self may be more resistant to change. Examining factors related to this syntonicity, therefore, may lead to efforts to reduce syntonicity and motivate individuals to seek early treatment.

While the research literature on OC symptoms points toward the self-dystonic nature of obsessive symptoms (Burns, Formea, Keortge, & Sternberger, 1996), but not compulsive symptoms, it is generally acknowledged that a subset of individuals with both types of OC symptoms view their symptoms as consistent with their views of self. Kozak and Foa (1994) posited that individuals who view their OC symptoms as rational do not respond to treatment as

well as those who view their symptoms as self-dystonic. The inclusion of the "with poor insight" qualifier to the diagnostic criteria for OCD in the DSM-IV-TR (American Psychiatric Association, 2000), does not adequately address the concept of self-syntonicity, but instead is focused on the individual's perception of their symptoms as rational.

Several constructs exist that have attempted to describe the tendency of some OC sufferers to hold tenaciously to the validity of their OC beliefs and behaviors, including "over-valued ideation" (Neziroglu, Stevens, McKay, & Yaryura-Tobias, 2001) and "delusional quality" (Eisen, Phillips, Baer, Beer, Atala, & Rasmussen, 1998). Few studies exist (Neziroglu et al., 2001; Eisen et al., 1998) on methods of assessment that identify attitudes towards OC symptoms regarding their rationality, acceptability, and consistency with one's self-concept.

An exception to this is a measure developed by Neziroglu et al. (2001), who developed the Overvalued Ideas Scale (OVIS); a standardized clinical interview that assesses the degree of value or acceptance individuals have toward symptoms that characterize OCD and body dysmorphic disorder. Overvalued ideas were theoretically linked to negative treatment outcomes (Neziroglu et al., 2001). Neziroglu et al. (2001) distinguished between their concept of overvalued ideas and insight as described in the DSM-IV-TR. Overvalued ideas relate to OC sufferers' beliefs about the rationality of their symptoms, while insight refers to their ability to see their disorder as the causal force behind their symptoms (Neziroglu et al., 2001). The OVIS was found to have a significant relationship with the compulsion sub-scale of the Yale-Brown Obsessive Compulsive Scale (Y-BOCS) (r=.53), but not to the obsessions scale (r=.13) (Neziroglu, et al., 2001). Neziroglu et al. (2001) evaluated the OVIS's ability to predict treatment outcomes using a sample with a primary diagnosis of OCD. However, the OVIS's relationship with treatment outcome was only significant for compulsions. While the OVIS appears to validly assess the degree to which OC sufferers view their symptoms as rational, it requires an expert interviewer and is limited to a single dimension.

Another measure designed to predict resistance to symptom change is the Brown Assessment of Beliefs Scale (BABS) (Eisen et al., 1998). The BABS was developed to determine the degree to which an individual's view of his/her symptoms has delusional quality. Delusional quality was identified through items evaluating the individual's convictions about his/her beliefs, perception of others' views of his/her beliefs, insight regarding his/her beliefs,

explanation of contrary views, attempts to disprove his/her beliefs, and the stability ("fixity") of the beliefs (Eisen et al., 1998). Each area was measured by an individual question on the BABS. Distinct from the OVIS, Eisen et al. (1998) used the BABS to assess the degree of poor insight, as described in the DSM-IV-TR, in individuals with OCD. The scale was found to be a reliable and valid measure of delusional quality (which Eisen et al. (1998)) argued is a continuum encompassing a construct similar to the DSM-IV-TR's poor insight), with the delusions factor accounting for 56% of the variance (Eisen et al., 1998). Test- re-test intra-class correlations produced a median stability quotient of .95. Further, one study showed the BABS was sensitive to change in symptom severity (showing a 51% decrease from pre- to post-treatment scores) (Eisen et al., 1998). Satisfactory convergent validity was found between the BABS and other measures of insight, including the Characteristics of Delusions Rating Scale (Garety & Helmsley, 1987). Divergent validity was also found via correlations with symptom severity scales, including the Beck Depression Inventory (BDI) total score and Y-BOCS total score (Eisen et al., 1998). These latter findings indicate that individuals with a delusional quality to their OC symptoms are likely to be more severely disturbed. However, the BABS require an expert to administer and measure a single dimension of insight.

Overvalued symptoms and delusional quality of OC symptoms are constructs that have been used to explain why individuals with OCD fail to improve in treatments known to be effective (Kozak & Foa, 1994). While important, these constructs and the scales used to measure them may not capture the full spectrum of motives for OC sufferers' to embrace the very symptoms causing them distress. Moreover, the OVIS and BABS were constructed to assess a small subset of individuals, at the extremes of faulty beliefs regarding their symptoms. Finally, the OVIS and BABS require a professional interviewer to administer and score them. Taken together these various scales evaluate several aspects of individuals' beliefs toward their symptoms, including the perceived rationality of obsessive thoughts (OVIS), the degree to which the disorder is seen as the driving force behind the symptoms (BABS), and the delusional quality of the symptoms (BABS). The OVIS and BABS measures are uni-dimensional and do not sample other possible factors related to individuals embracing their symptoms and the resulting

diminished motivation to change. To deal with some of these shortcomings, Van Kirk and Clum (2009) developed the OCSSSS in an attempt to measure more broad-based attitudes towards OC symptoms.

The OCSSSS is based broadly on measures developed to examine anorexia nervosa (AN) (Rieger & Stephen, 2006; Serpell, Teasdale, Troop, & Treasure, 2004), also known for its intransigence to treatment. Two approaches have been used to help explain why a number of individuals with AN resist changing their self-perception of extreme thinness as normal, even when at risk of dying. The Anorexia Nervosa Stages of Change Questionnaire (ANSCQ) was developed by Rieger and Touyz (2006) in order to assess the factors underlying individuals' motivation to change their AN symptoms. The ANSCQ is a self-report questionnaire consisting of 20 questions, each of which asks the participant to rate his/her readiness to change AN symptoms based on the stages of change model (Rieger and Touyz, 2006). The questions were found to load on three factors, including attitude toward: 1) weight gain, 2) eating, shape, and weight concerns, and 3) ego-alien aspects (perceived as "subjectively adverse aspects of AN" (Rieger & Touyz, 2006)), each of which accounted for 54%, 9.2%, and 5.1% of the variance respectively (Rieger & Touyz, 2006). Another attempt to get at the resistance of AN sufferers to change led to Serpell et al. (2004) development of the Pros and Cons of Anorexia Nervosa scale (P-CAN), a 50 item, self-report questionnaire designed to create a "quantitative measure of both positive (valued) and negative aspects of AN (Serpell et al., 2004). The 50 statements describe different ways in which AN influences individuals' lives. Each of these statements are rated by the individual on a five point scale ranging from agree strongly to disagree strongly. The 50 statements of this scale were divided among six positive subscales and 4 negative subscales, each of which evaluates different aspects of the disorder. The six positive subscales include safe/structured, appearance, fertility/sexuality, fitness, communicate emotions/distress, and special/skill. The negative subscales are trapped, guilt, hatred, and stifles emotions. Safe/structured and the appearance subscales evaluated the extent to which individuals describe AN as dependable or helping them increase their confidence/feel more attractive. Fertility/sexuality relates to the perceived benefits of not experiencing periods/PMS (Serpell et al., 2004). The extent to which AN facilitates individual communication of feelings is evaluated by the communicate emotions/distress subscale, while the fitness subscale evaluates perceived

increases in energy or fitness due to AN. The final positive subscale (special/skills) describes the ability of AN to make people feel they have a special skill or something that makes them better than others. The negative subscales describe individuals' depressed feelings (trapped), feelings of guilt about AN, making others worry (guilt), distaste for AN (hatred), and perceived limited emotional expression due to AN (stifles emotions) (Serpell et al., 2004). The P-CAN showed significant test-retest reliability (.60-.85) and internal consistency between .86-.89 (Serpell et al., 2004). A correlation analysis of the P-CAN supported the idea of increased symptom severity being related to the ego-syntonic nature of those symptoms.

The OCSSSS was modeled on the PCAN scale and evaluates several functional aspects related to experiencing OC symptoms as an integral part of the self as well as perceptions of the functional costs and benefits of OCD symptoms. Evaluation of these motives may lend insight into why OC sufferers delay their entrance into treatment and are resistant to change once treatment is entered.

Five domains were identified as representative of the reasons individuals with OC view their symptoms as consonant with their selves. These include negative attributes of symptoms, positive attributes of symptoms, desirability to change, experiencing OC behaviors as part of self, and social acceptability of the symptoms. Items were generated based on these five functional domains by a graduate student in the doctoral program and a licensed, practicing psychologist. Each item is presented in statement form (based on the precedent set by the P-CAN) and developed based on personal and clinical experience with OC symptoms. The OCSSSS uses a 5 point Likert scale similar to that of the P-CAN to evaluate each statement, with a not applicable option (coded as '0').

Motives for viewing OC symptoms as consonant with self are hypothesized to predict severity, type of symptoms, readiness for change, decision to seek change and response to change measures. They are further predicted to relate to level of general adjustment, as individuals who view psychopathology as normal are likely to be at odds with those around them. In the literature on OC disorders and symptoms, there are very few mentions of the link between an individual's view of his/her OC symptoms as consistent or alien to their sense of self

and motivation to change or seek help. The present study evaluates the component structure of the OCSSSS and its relationships with the above identified constructs in order to elucidate the role of syntonicity in OCD.

2.0 - Method

2.1 - Participants

Participants were 634 students from Virginia Tech, who responded to advertisements briefly describing the study. Each participant was 18 years of age or older and currently enrolled in a psychology course at Virginia Tech, which offered extra credit. The mean age of the sample was 19.42 years, with a ten year range. The sample population classified themselves as primarily white (80.9%), female (72.2%), and single (97.3%).

2.2 - Procedure

Each participant completed an Informed Consent prior to completing the first phase of the study. Following completion of the Informed Consent, participants were presented with online versions of the OCSSSS, Y-BOCS SR, Work and Social Adjustment Scale, Obsessive Compulsive Inventory Revised (OCI-R), URICA stages of change questionnaire, items measuring past treatment seeking behaviors, previous treatment effectiveness, willingness to engage in future treatment, and future expectations of treatment effectiveness for their OC symptoms. Those who completed phase one of the study were invited to complete phase two, a two week online follow-up. Phase two included a second online administration of the OCSSSS.

Extra credit was given to each participant for his/her participation in the study. Two credit points were given to those who completed phase one of the study. A third point was awarded for those who completed the follow-up administration of the OCSSSS (phase two). Those who participated in the initial round of assessments were entered into a raffle for a chance to win one of four $25.00 gift cards.

2.3 - Measures

OCSSSS (See Appendix A). The OCSSSS was constructed to measure motives for considering OC symptoms synchronous with OC sufferers' sense of self. It is composed of 54 items thought to identify five different groups of motives. The items are rated using a Likert format (from 1=extremely inconsistent to 5=extremely consistent with not applicable being recorded as '0'). Items were generated by a practicing clinical psychologist and a master's-level

graduate student in a clinical psychology program, using their own experience with sufferers with OC symptoms, and extrapolating from treatment motivation literature on AN. The component structure, reliability, and validity of the OCSSSS will be assessed in this study.

Y-BOCS-SR . The Yale-Brown Obsessive Compulsive Scale is considered the gold standard of assessment for obsessive compulsive symptoms. An intra-class correlation of inter-rater reliability for the Y-BOCS was found to be .99 (Taylor, 1995). Internal Consistency estimates ranged between .69 and .91 and test-retest reliability estimates ranged from .81-97 (Taylor, 1995). The Y-BOCS also showed good convergent validity (mean r=.51) (Taylor, 1995). A study by Steketee, Frost, and Bogart (1996) compared the Y-BOCS interview standard to the Yale Brown Obsessive Compulsive Scale Self-Report (Y-BOCS-SR). Their study found the Y-BOCS-SR to have good psychometric properties, in some cases better than the interview. Internal Consistency was found to be .84 or higher, with excellent test-retest reliability, and comparable content validity to the Y-BOCS interview. The self report was found to have good convergent validity with the original Y-BOCS interview with correlations of .75 for the total score and .69 and .65 for obsessions and compulsions subscales, respectively (Steketee et al., 1996).

Obsessive Compulsive Index. The Obsessive Compulsive Index (OCI) is a self report measure comprised of 42 items stretching across 7 subscales. These subscales include washing, checking, doubting, ordering, obsessing, hoarding, and mental neutralizing (Foa, Kozak, Salkovskis, Coles, and Amir, 1998). The OCI showed good internal consistency with full scale coefficients ranging from .86-.95 and the majority of the subscales exceeding .70 (Foa et al., 1998). Foa et al. (1998) found high test-retest reliability regarding frequency and distress for both individuals suffering from OC symptoms and "non-patient populations". A revised version of the OCI will be used in this study, the OCI-R.

The University of Rhode Island Change Assessment. The University of Rhode Island Change Assessment (URICA) is a self-report scale designed to determine an individual's readiness to change. Pre-contemplation, contemplation, action, and maintenance factors accounted for 58% of the variance based on principal components analysis (McConnaughy, Prochaska, Velicer, 1983). Internal consistency was found to be in the high range for each of the four scales: pre-contemplation (.88), contemplation (.88), action (.89), and maintenance (.88)

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(McConnaughy et al., 1983). The URICA was found to be a good measure to evaluate readiness to change in individuals' with OC symptoms. Villano (1998) found individuals who attended a "social support only" group were consistently in the contemplation stage, while individuals who had just begun a new treatment for their OC symptoms scored higher on the action stage (and in some cases the contemplation stage). Individuals who fully engaged in treatment (more than four sessions) scored higher on the action and maintenance stages of change (Villano, 1998).

The Work and Social Adjustment Scale. The Work and Social Adjustment Scale (WSAS) is a five question, self-report scale measuring functional impairment in the realms of work and social adjustment. The WSAS was found to have ICC ranging from .70-.94 and good test-retest reliability, with a correlation of .73 (Mundt, Marks, Shear, and Greist, 2002). Mundt et al. (2002) found the WSAS to have a correlation of .61 with OC symptom severity (Mundt et al., 2002).

Measures of Treatment-Seeking Behavior (See Appendix B). Treatment seeking behavior was evaluated through use of online questions developed by the investigators. Item 1 asked the participant to list his/her past treatment experience. Item 2 evaluated the participant's perception of the effectiveness of past treatment on a 1-5 Likert scale, ranging from not at all effective to extremely effective. Item 3 used Likert scale ranging from 1-5 to determine the participant's willingness to engage in future treatment. The final question evaluated the individual's assessment regarding the possible effectiveness of future treatment for his/her OC symptoms, using a Likert scale ranging from 1-5.

2.4 - Data Analysis

To determine whether each item was related to the total score, item–total correlations were computed. Internal consistency reliability was assessed using the split-halves method (Cohen, 2008). Test-retest reliability was determined through subsequent administration of the OCSSSS to participants two weeks post initial assessment. Construct Validity of the OCSSSS was accomplished through: 1) principal components analysis; and 2) correlations between the OCSSSS and symptom severity (Y-BOCS-SR total and subscale scores); OCI-R; WSAS; treatment effectiveness and expectations; and relationship with the URICA.

An examination of the collected data revealed that a large portion of the individuals in the college sample reported scores of '0' for "not applicable" across multiple items. 18,265 responses were coded as '0', across 634 participants, over 54 items. The number of '0' responses lead to a bias in the resulting principal components analysis. The inclusion of the '0' values in the principal components analysis violated the assumption requiring the use of an ordinal scale for measuring a construct. The use of the "not applicable" responses (indicated by '0') created a nominal scale because "not applicable" is a categorical variable. To avoid violating this assumption and the biasing factor of the '0' responses, three methods of dealing with '0' values were employed. The first method was to record the '0' responses as missing data and use principal components analysis with pairwise deletion, to maximize the sample size. This was justified since '0' indicates a "not applicable" response, in which the item is not appropriate for the individual. The second method substituted a '3' (which was scored as "neutral") for the '0' values, an approach justified by representing similar constructs with the same value on an ordinal scale. Individuals who responded to items with "not applicable" could be considered as evaluating the item as not relevant to them, with a judgment of "neutral" in terms of its functional consequences. A frequency histogram of the number of responses for each value (between 1 and 5) did not show a normal distribution. Because the responses were not normally distributed, this method was not used as the primary method when conducting the principal components analysis. The third method employed was to code the '0' responses as missing data and use a mean imputation to replace all missing values with the case mean. While this method was suitable for testing the robustness of the principal components analysis, it was not suitable for use as the primary method of addressing missing values. The replacement of '0' with the mean fundamentally changes the individual's answer to each statement. A '0' response indicated the statement did not apply to the individual, and it is possible that a person with no OC symptoms could answer '0' to all statements. By replacing '0' with the mean you artificially indicate each statement applies to everyone, even those who have no OC symptoms. This may further bias the results of the principle components analysis. The three principal components analyses were remarkably robust, with similar results found across all three methods. The pairwise deletion and mean substitution methods evidenced nearly identical results.

3.0 - Results

3.1 - Principal Components Analysis

The principal components analysis utilizing pairwise deletion, grouped the 54 items into seven components, accounting for 58.59% of the variance: 1) General Positive Consequences (23.01%), 2) General Negative Consequences (19.49%), 3) Social Negative Consequences (4.09%), 4) Social Isolation (3.61%), 5) Keeping People Safe (3.35%), 6) It's O.K. (2.65%), and 7) Residual Negatives (2.40 %). The decision of which components to include was determined by: 1) evaluating the Scree Plot and using components with a base eigan value greater than one; 2) using items with component loadings of .40 or greater for the first factor and .35 for the remaining factors, and that did not load higher on any other component; and 3) using those components with at least three items. Two subsequent principal components analyses were conducted and are reported below:

Results of the principal components analysis using mean imputation produced a seven component solution accounting for 48.95% of the total variance. The seven components were similar to the seven components found using the pairwise deletion method (see Table 1). Robustness of the component solution was further supported with the third principal components analysis in which '0' was re-coded as '3'. This accounted for 47.69% of the total variance with a five component solution (see Table 1).

3.2 - Reliability

The item-total correlations were computed with '0' included to maximize sample size (n=505). The majority of the item-total correlations were in the moderate-high range, with all correlations above .5. However, by including '0' in the analysis we have maximized the item-total correlations. To test for robustness of the item-total correlations, the analysis was run a second time with '0' being computed as missing data. Correlations were in the moderate to high range (r≥.30, n=45), with the exception of six items. These include items 3 (r=.12), 17 (r=.12), 18 (r= -.02), 45 (r=.27), 50 (r=.27), and 51 (r= -.05).

Reliability was evaluated through the split-halves method with '0' included in the analysis (n=505). This resulted in an alpha correlation of .92, between the odd and even forms (each with 27 items), and a Spearman-Brown Coefficient for equal length of .96. Split-half reliability was analyzed again with '0' coded as missing data, resulting in an alpha correlation of

.79 (n=45) and a Spearman-Brown Coefficient for equal length of .88 (n=45). Further, split-half reliability analyses were conducted on each component. Moderate-high alpha correlations ($r \geq .70$) were evidenced for all seven components. Spearman-Brown Coefficients for equal length were high ($r \geq .75$) across all seven components when '0' was included in the response data. The robustness of these reliability estimates was tested for each factor through split-half reliability analyses in which '0' was coded as missing data. Moderate-high alpha correlations ($r \geq .60$) were again evidenced for each factor, along with moderate-high ($r \geq .70$) Spearman-Brown Coefficients for equal length.

Test-retest stability analyses showed the OCSSSS to have good reliability in a two week follow-up condition. Moderate-high correlations ($r \geq .60$, n=267) were evidenced for all seven OCSSSS components. Further, the OCSSSS evidenced good overall stability with a high test-retest correlation for total score ($r=.72$, n=267).

3.3 - Validity

Validity was assessed through correlational analyses between total and component scores on the OCSSSS and symptom severity, symptom type, work and social adjustment, treatment expectations, and stage of change. The OCSSSS total score was correlated with symptom severity (see Table 2) on both the Y-BOCS-SR total score and OCI-R total score. The OCSSSS total score was more highly correlated with the Y-BOCS-SR compulsion subscale than the obsessions subscale, however, the difference between the two correlations was not significant. Correlations between the OCSSS and specific symptom subtypes on the OCI-R were higher for obsessing and ordering subscales than with neutralizing, washing, checking, and hoarding subscales (see Table 3).

Components of the OCSSSS were individually correlated with scores on the Y-BOCS-SR and OCI-R total and subscale scores (See Tables 2 and 3). All correlations were significant. Component 3 (Social Negative Consequences), was the most highly correlated with total severity on the Y-BOCS-SR while Component 6 (It's O.K.), evidenced the lowest correlations with the Y-BOCS-SR total score and the OCI-R total score. All other OCSSSS components showed large correlations with total symptom severity, on both the Y-BOCS-SR and OCI-R.

Overall, the OCSSSS components were more highly correlated with compulsive symptoms than with obsessive symptoms on the Y-BOCS-SR, however, this difference was only statistically significant for component 1 (Z=-2.02, p≤.05). Component 6 (It's O.K), evidenced a small correlation with the Y-BOCS-SR obsession subscale and a low moderate correlation with the Y-BOCS-SR compulsion subscale. Each OCSSSS component also correlated with symptom type (see Table 3), with component 5 (Keeping People Safe) having large correlations with the checking and obsessing symptom subtypes on the OCI-R. Each OCSSSS component showed generally lower correlations with the hoarding and mental neutralizing symptom subtypes on the OCI-R, with correlations in the low to moderate range.

Next evaluated were the relationships between OCSSSS total and component scores and work and social adjustment. As expected, total scores on the WSAS were correlated with the OCSSSS. The OCSSSS total score and WSAS total score were highly correlated (see Table 4), while OCSSSS components evidenced moderate to high correlations with the WSAS total score, with the exception of component 6, which evidenced a low, yet significant correlation. Negatively biased OCSSSS components showed higher correlations with the WSAS than OCSSSS components that were positively biased.

The OCSSSS total score was not significantly related to the insight item of the Y-BOCS-SR, though this item was negatively correlated with several OCSSSS components, including General Negative Consequences, Social Negative Consequences, and Social Isolation (see Table 5). However, avoidance (as rated by the Y-BOCS-SR) was significantly correlated to all OCSSSS components and the total score (see Table 5). Participant ratings of the effectiveness of previous treatments for their OCD were significantly correlated with the OCSSSS total score and all OCSSSS components (see Table 6). Willingness to undertake future treatment for OC symptoms was significantly related to the OCSSSS total score and each OCSSSS component (see Table 6), with negatively biased components evidencing the highest correlations. Future expectations of treatment effectiveness were significantly correlated with the OCSSS total and component scores. Higher correlations were found between ratings of previous treatment effectiveness, willingness to participate in future treatment, and expectation of the effectiveness of future treatments with the negatively biased OCSSSS components (component 2, 3, 4, and 7).

The final analyses evaluated relationships between the OCSSSS and stages of change, based on the URICA (see Table 7). The OCSSSS total score was moderately correlated with scores on the contemplation, action, and maintenance subscales, but not the pre-contemplation subscale. OCSSSS component scores that measured negative consequences of OC symptomatology were negatively correlated with the pre-contemplation subscale and positively correlated with the contemplation, action, and maintenance subscales. Component 1 (General Positive Consequences) evidenced significant correlations with the pre-contemplation subscale, contemplation subscale, and the action subscale, but not with the maintenance subscale. Component 4 (It's O.K.), was correlated with the pre-contemplation subscale but not the contemplation, action, or maintenance subscales. Overall, components measuring negative consequences for OC symptoms evidenced larger correlations than components with positive biases, with all stages of change.

3.4 - Regression

Hierarchical Linear Regression was conducted to further evaluate the predictive ability of the OCSSSS, above and beyond the contribution of symptom severity. The OCSSSS and symptom severity were regressed on the URICA's pre-contemplation, contemplation, action, and maintenance subscale scores. Symptom severity (Y-BOCS-SR total score) was imputed in the first block, with the negatively biased components (Components 2, 3, 4, and 7) in the second block, and positively biased components (Components 1, 5, and 6) in the third block.

When regressed on the pre-contemplation stage scores, the negatively biased components predicted a significant amount of variance (see Table 8), above and beyond symptom severity. Further, positively biased components added significant prediction to pre-contemplation scores above and beyond symptom severity and the negatively biased components (see Table 8). Components 1 (β=.075, t(629)=3.06, p=.002) and 2 (β=-.241, t(629)=-3.38, p=.001) evidenced significant beta coefficients with pre-contemplation stage scores.

Regressions on contemplation stage scores indicated the negatively biased components and positively biased components (see Table 9) accounted for a significant amount of variance in contemplation stage scores, beyond that of symptom severity. Significant beta coefficients were found for components 1 (β=-.104, t(629)=-3.40, p=.001), 2 (β=.341, t(629)=3.82, p=.000), and 4 (β=.259, t(629)=2.36, p=.019) with the contemplation stage scores.

Regressions on the action stage again indicated the negatively biased components and positively biased components (see Table 10) accounted for significant amounts of variance in the action stage scores, above and beyond that of symptom severity. Components 1 (β=-.063, t(629)=-2.14, p=.033) and 2 (β=.322, t(629)=3.77, p=.000) evidenced significant beta coefficients with the action stage scores.

A final regression of symptoms severity and the OCSSSS components on the maintenance stage scores indicated the negatively and positively (see Table 11) biased components accounted for a significant amount of variance in the maintenance stage scores, above and beyond symptom severity. Significant beta coefficients with the maintenance stage scores were found for components 1 (β=-.072, t(629)=-2.79, p=.005), 2 (β=.232, t(629)=3.10, p=.002), and 6 (β=-.123, t(629)=-2.18, p=.03).

4.0 - Discussion

The OCSSSS was shown to have a robust component structure. Principal components analyses, using three different approaches to deal with the nominal scale problem, supported a robust seven component structure. Principal component analyses using pairwise deletion and mean imputation methods resulted in nearly identical component structures. A principal component analysis coding '0' as '3' produced a five component solution, with four components identifiable in the other two analyses. The four negatively biased components – General Negative Consequences, Negative Social Consequences, Social Isolation, and Residual Negative Consequences - were all represented in a unified negative component in this latter analysis. The inconsistency in component solutions may be due to the lack of a truly normal distribution prior to the recoding process. While this method resulted in a five, instead of seven component solution, the three components entitled "General Positive Outcomes, Keeping People Safe, and It's O.K. were found across the three different principal component analyses. The component most closely representing General Negative Consequences in this third analysis subsumed the General Negative Consequences, Social Negative Consequences, Social Isolation, and Residual Negative Consequences components found in the other two principal component analyses. Overall, the seven components found in two of the analyses were well articulated and robust.

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The OCSSSS showed robustness in the item-total correlations, with 48/54 items in the moderate-high range when including only participants with all information. Five of the six items that fell below .30 when '0' was coded as missing data, were subsumed in component 6 (It's O.K.). This finding may indicate component 6 is not representative of the overall construct measured by the scale, and could be removed in future iterations. Overall, the OCSSSS appears to be measuring a consistent construct, supported by the finding of large item-total correlations ($r \geq .5$) across both analyses. The OCSSSS also showed high overall internal consistency, reliability, and stability. Furthermore, reliability and stability estimates were in the moderate-high range for all seven components, indicating that the components were also reliable and stable.

As described above, the OCSSSS was initially conceptualized as a measure of self-syntonicity, with the premise that those who experienced their symptoms as more syntonic (consistent with their sense of self) would be less likely to be in the contemplation, action, or maintenance stages of change, thus less likely to seek or commit to treatment. Analyses indicated the OCSSSS was better conceptualized as a measure of the positive and negative functional consequences of OC symptoms. This new conceptualization is consonant with scales used in the AN literature, such as the P-CAN, after which the OCSSSS was modeled. Where the P-CAN is used to evaluate how AN influences an individual's life, the OCSSSS appears to evaluate the degree to which an individual's OC symptoms were perceived as having a positive or negative functions in his/her daily life.

The validity of the instrument is supported by its relations to symptom severity, readiness to change, response to past treatments, and expectations regarding future treatment. As predicted, the OCSSSS and its components all evidenced moderate to large correlations with symptom severity as measured by the Y-BOCS-SR and OCI-R, indicating those with more severe OC symptoms experienced more functional consequences (both positive and negative). Both the obsession and compulsion subscales of the Y-BOCS-SR were significantly correlated with the OCSSSS, with compulsions evidencing slightly higher correlations than the obsessions subscale. Higher correlations with the compulsions subscale of the Y-BOCS-SR suggests that compulsive

symptoms may lead to more noticeable functional consequences than obsessive symptoms, however, this interpretation should be accepted with caution as the differences were not statistically significant.

Perceived negative functional consequences were more highly correlated with symptom severity than were positive functional consequences. This may indicate more severe OC symptoms result in greater negative functional consequences than positive consequences. However, some OC symptoms may generate positive functional consequences, such that more severe symptoms ensure a desired outcome. The results support this possibility through checking symptoms, which may provide assurance that a feared outcome does not occur. Checking symptoms were found to be the most highly correlated with component 5 (Keeping People Safe), supporting the idea that certain OC symptoms may be associated with positive functional consequences. When interpreting these results it must be kept in mind that the causal direction of the relationship between symptom severity and different functional consequences cannot be adequately determined. The relationship may flow in the opposite direction as theorized above, or a third determinant that was not controlled for may influence both symptom severity and the functional consequences.

The OCSSSS was also significantly correlated with the Work and Social Adjustment Scale, with negative components of the OCSSSS having the highest correlations. This is consistent with perceptions of negative impact of OC symptoms reflecting greater impairment in work and social functioning. People who perceive more negative consequences and few positive consequences may simply be reporting what they know – OC symptoms have negatively impacted their work and social functioning.

The OCSSSS was significantly correlated with evaluations of past treatment and willingness to participate in future treatment. Expected effectiveness of future treatment was most highly correlated with OCSSSS total score. However, past treatment effectiveness, expected effectiveness of future treatment, and willingness to participate in future treatment were all more highly correlated with negative functional consequences. One interpretation of these relationships is that negative evaluations of the consequences of OC symptoms acts as a motivator to seek treatment and expect that it will have positive consequences. Another interpretation suggests that perceived positive consequences of OC symptoms may reduce an

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individual's evaluation of treatment effectiveness and their expectations of future treatment effectiveness. Those who feel their OC symptoms provide positive functionality may be less willing to participate and commit to future treatment for their OC symptoms.

The initial conceptualization of the OCSSSS was presented in terms of OC symptoms being syntonic with the self and, therefore, leading to un- readiness to change, based on a stage of change model. Conceptualizing the OCSSSS as measuring perceived functional consequences, also leads to an expectation of a relationship with readiness to change. The components measuring negative functional consequences were more highly correlated with the contemplation stage and negatively correlated with the pre-contemplation stage. Thus, those who score highly on these components of the OCSSSS are more active in considering treatment. Further significant correlations between these components and the action and maintenance stages also indicate individuals scoring highly on the negative functional components are more likely to take steps to overcome OC symptoms or work to maintain gains. Components 1 and 6 (General Positive Consequences and It's O.K.) were more highly correlated with the pre-contemplation stage than either the contemplation, action, or maintenance stages. These findings are consistent with the predicted relationship between positive functional consequences of OC symptoms and an individual's resistance to change those symptoms.

As discussed above, OC symptoms are characterized by their resistance to change, with many individuals seeking treatment well after their OC symptoms have become established (Rasmussen & Tsuang, 1986). Symptom severity has traditionally been viewed as a major motivating factor behind an individual's desire to change their symptoms, as more severe symptoms are generally more dabilitating. The OCSSSS has also been shown to be related to an individual's desirability to change their symptoms, based on their stage of change. This relationship indicates the functional consequences of the OCSSSS captures motivational factors that influence an indivdual's desirability to change their symptoms. Regression analyses of the negative and positive functional consequences on the stages of change controlled for symptoms severity, showing the OCSSSS's functional consequences to have predictive ability above that of symptoms severity. This indicates the functional consequences evaluated by the OCSSSS captures motivational factors that relate to an individual's desirability to change their symptoms that are distinct from the motivational features of symptom severity. Further, positive and

negative functional consequences may capture differential motivational features. While negative functional consequences may increase an individual's motivation to change their symptoms, moving them through the contemplation, action, and maintenance stages of change, postive functional consequences may serve to buffer these motivational factors, keeping individuals in the pre-contemplation stage by reducing their desire to change the OC symptoms. This is supported by the regression analyses, showing that individuals whose OC symptoms have more positive functional consequences in their daily life are less likely to be in the contemplation, action, or maintenance stages of change, thus less likely to be considering treatment for their symptoms. Those experiencing negative functional consequences from their OC symptoms are more likely to consider taking action to change their symptoms or currently seeking treatment/maintaining change in their symptoms, as evidenced by higher scores on the contemplation, action, and maintenance stages of change.

The OCSSSS differs from similar measures such as the OVIS and BABS in a few key ways. First, the OCSSSS is conceptualized as a measure of positive and negative functional consequences of OC symptoms. It evaluates what perceived consequences OC symptoms have in an individual's life and the extent to which these consequences have a positive or negative function. The BABS evaluates delusional quality, which is defined as a fixed belief continuum in the validity of the OC beliefs and compulsive remedies, that includes the DSM-IV-TR's construct of poor insight (Eisen et al., 1998). This delusional quality is based on the conviction of the validity of symptoms, and helps explain discrepancies between their beliefs and the views that others may hold regarding the rationality of their symptoms. The OVIS predicts resistance to change and treatment outcomes for compulsive symptoms through overvalued ideals. The OVIS measures the degree to which OC sufferers view their symptoms as rational, not the function they play in their lives. The OVIS and BABS are further differentiated from the OCSSSS in that they require an expert administrator where the OCSSSS is a self report measure. While the OCSSSS is conceptually distinct from the BABS, OVIS, and measures of symptom severity, it may add to the holistic explanation of why individuals resist changing their OC symptoms.

4.1 - Limitations

While the OCSSSS, as currently scored, showed robustness across analyses, thus indicating a coherent component structure, individuals may have been confused by the wording

of the response alternatives, with different participants imputing different meaning to the response alternatives. This conclusion is suggested by the large number of '0' responses, with some individuals responding to some questions as non-applicable and others as applicable, when the authors intent was to score all items of the instrument once OC symptoms were acknowledged. As discussed above, the inclusion of '0' as "not applicable" may have lead to biasing of the principal component analysis. The results of the principal component analyses should thus be interpreted with caution, as the statistical methods used to correct for the high number of "not applicable" responses are considered liberal, though theoretically defensible. To address this issue, a future version of the scale will omit the "not applicable" response, using only a 1-5 Likert scale in order to create an ordinal scale and clarifying the scale's instructions.

A second limitation, also related to the "not applicable" answer option, may have affected the reliability analyses. Because of options available using SPSS and methods used to address the '0' option, described above, the deletion methods employed in the internal consistency analyses and item-total correlations were not identical to those used in the primary principal components analysis. This problem was addressed by testing the robustness of the OCSSSS's reliability through two analyses, one including an answer of '0' in the analysis and one coding '0' as missing data. The split-halves reliability analyses were robust, with large correlations evidenced across both the alpha correlations and the Spearman-Brown Coefficients. Further robustness was demonstrated by the item-total correlation analyses which both included '0' and excluded '0' as missing data. Due to the limited sample size in the analysis excluding '0' as missing data, one should be cautious in determining component 6 to be weakly correlated with the rest of the scale, based on this item-total correlation alone. While the combination of both analyses for reliability and item-total correlations show the robustness of the OCSSSS, future analyses of the OCSSSS's reliability should be conducted on versions that exclude '0' as a response option.

A third limitation is the population for which the scale is intended. In the present study all individuals completed the measure, whether or not they had measurable OC symptoms. The scale is intended for use by individuals with clinical and sub-clinical levels of OCD, a group that was not the focus of the present study. Whether the component solution found in the present study holds for such a population is unknown, though future applications will target such

samples. This study also utilized a sample, comprised primarily of undergraduate females, all of whom were currently taking a psychology class. This limits the generalizibility to other community samples and should be tested further.

A final limitation is the unanswered question of whether the present measure is different than other measures of similar constructs. Given the nature of these other measures, including the OVIS and the BABS, it is likely that different constructs are being measured. Nonetheless, future studies need to assess overlap between measures and determine whether differential predictive validity exists for these various measures.

Future versions of the OCSSSS will improve on the current scale in a variety of ways. First, "not applicable" will be eliminated as a response option, to create better consistency within the scale and eliminate possible confusion regarding the role of '0' as a response option. This will also create a truly ordinal scale. Items that did not load on the above identified seven functional domains will be eliminated from the scale to make the scale more parsimonious. Those items that load on the Residual Negative Consequences component will also be eliminated, as the Residual Negative Consequences component was shown to be a comparatively weak component and did not add to the already present negatively biased functional domains.

4.2 - Clinical Implications

Following the AN literature and the precedent set by the P-CAN, the conceptualization of the OCSSSS regarding functionality of OC symptoms can help clinicians identify the areas of maximum functional impairment in client's lives, be it problems with social interactions, feelings of isolation, or other negative consequences resulting from their symptoms. This can assist in the development of appropriate treatment plans and capitalizing on these consequences as sources of motivation. Clinicians may also take a similar approach to treating OC symptoms as is done in AN by evaluating the positive functions that the client's symptoms serve, and help them find more productive ways to fill that role, hopefully reducing their reluctance to fully extinguish their OC symptoms. The relationship between the OCSSSS and an individual's stage of change allows clinicians to anticipate resistance to treatment and focus on the motivational factors that result from the negative functional consequences of OC symptoms in their lives.

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Table 1
OCSSSS Component Loadings

Components	PCA: Pairwise Deletion	PCA: Mean Substitution	PCA: '0' Recoded As '3'
OCSSSS Component 1: General Positive Consequences	3, 7, 20, 21, 23, 24, 27, 33, 35, 36, 38, 40, 41, 43, 48	7,20,21,23,24,, 27, 33, 35, 36, 38, 40 ,41, 43, 48	7, 20, 21, 23, 24, 27,33, 35, 36, 38, 40, 41, 43, 48, 50
OCSSSS Component 2: General Negative Consequences	5, 6, 8, 10, 26, 32, 37	5, 6, 8, 10, 26, 32, 37	5, 8, 10, 13, 15, 16, 19, 22, 26, 28, 29, 31, 32, 34, 42, 46, 47, 49, 52, 53, 54
OCSSSS Component 3: Social Negative Consequences	4, 13, 15, 16, 19, 49	15, 16, 19, 49	
OCSSSS Component 4: Social Isolation	42, 46, 47, 52, 53, 54	42, 46, 47, 52, 53, 54	
OCSSSS Component 5: Keeping People Safe	2, 25, 30, 39, 44	25, 30, 39, 44	2, 25, 39, 44
OCSSSS Component 6:It's O.K.	18, 45, 50, 51	17, 18, 45, 50, 51	17, 18, 45, 50, 51
OCSSSS Component 7: Residual Negatives	22, 29, 31, 34	22, 29, 31, 34	

Note. The principal component analysis that recoded '0' as '3' revealed five components. The fifth component did not match the other two principal component analyses

Table 2

Correlation Matrix for OCSSSS and Symptom Severity

Variable	OCSSSS Component 1	OCSSSS Component 2	OCSSSS Component 3	OCSSSS Component 4	OCSSSS Component 5	OCSSSS Component 6	OCSSSS Component 7	OCSSSS Total	OCI-R Total	Y-BOCS-SR: Obsessions Total	Y-BOCS-SR: Compulsions Total	Y-BOCS-SR Total
OCSSSS Component 1												
OCSSSS Component 2	.44**											
OCSSSS Component 3	.59**	.83**										
OCSSSS Component 4	.57**	.83**	.85**									
OCSSSS Component 5	.76**	.58**	.66**	.65**								
OCSSSS Component 6	.74**	.33**	.41**	.39**	.56**							
OCSSSS Component 7	.54**	.80**	.81**	.82**	.64**	.38**						
OCSSSS Total	.90**	.75**	.84**	.82**	.85**	.73**	.79**					
OCI-R Total	.55**	.55**	.60**	.59**	.59**	.37**	.52**	.65**				
Y-BOCS-SR: Obsessions Total	.41**	.53**	.56**	.53**	.44**	.30**	.48**	.55**	.52**			
Y-BOCS-SR: Compulsions Total	.50**	.52**	.53**	.53**	.45**	.37**	.50**	.59**	.58**	.56**		
Y-BOCS-SR Total	.53**	.60**	.62**	.60**	.51**	.38**	.56**	.65**	.63**	.88**	.89**	
Mean (SD)	21.13 (19.26)	5.38 (6.98)	4.80 (5.73)	4.65 (5.84)	5.48 (6.06)	8.37 (6.48)	2.77 (3.81)	60.53 (51.56)	14.98 (11.46)	4.86 (3.77)	3.50 (3.88)	8.37 (6.75)

Note.**Correlation is significant at the 0.01 level (2-tailed).

Table 3

Correlation Matrix for OCSSSS and Symptoms Type (OCI-R)

Variable	OCSSSS Component 1	OCSSSS Component 2	OCSSSS Component 3	OCSSSS Component 4	OCSSSS Component 5	OCSSSS Component 6	OCSSSS Component 7	OCSSSS Total	OCI-R: Checking	OCI-R: Hoarding	OCI-R: Neutralizing	OCI-R: Obsessing	OCI-R: Ordering	OCI-R: Washing	OCI-R: Total
OCSSSS Component 1															
OCSSSS Component 2	.44**														
OCSSSS Component 3	.59**	.83**													
OCSSSS Component 4	.57**	.83**	.85**												
OCSSSS Component 5	.76**	.58**	.66**	.65**											
OCSSSS Component 6	.74**	.33**	.41**	.39**	.56**										
OCSSSS Component 7	.54**	.80**	.81**	.82**	.64**	.38**									
OCSSSS Total	.90**	.75**	.84**	.82**	.85**	.73**	.79**								
OCI-R: Checking	.41**	.40**	.45**	.44**	.50**	.29**	.35**	.49**							
OCI-R: Hoarding	.33**	.28**	.34**	.32**	.35**	.26**	.27**	.38**	.48**						
OCI-R: Neutralizing	.33**	.37**	.40**	.40**	.38**	.19**	.37**	.41**	.46**	.38**					
OCI-R: Obsessing	.38**	.61**	.58**	.59**	.51**	.27**	.53**	.57**	.51**	.35**	.46**				
OCI-R: Ordering	.52**	.34**	.42**	.39**	.41**	.35**	.35**	.51**	.50**	.38**	.42**	.38**			
OCI-R: Washing	.37**	.40**	.42**	.45**	.40**	.22**	.42**	.46**	.48**	.29**	.41**	.54**	.40**		
OCI-R: Total	.55**	.55**	.60**	.59**	.59**	.37**	.52**	.65**	.78**	.67**	.70**	.74**	.74**	.71**	
Mean (SD)	21.13 (19.26)	5.38 (6.98)	4.80 (5.73)	4.65 (5.84)	5.48 (6.06)	8.37 (6.48)	2.77 (3.81)	60.53 (51.56)	2.52 (2.45)	3.10 (2.74)	1.52 (2.30)	2.29 (2.62)	3.74 (3.23)	1.82 (2.50)	14.98 (11.46)

Note **Correlation is significant at the 0.01 level (2-tailed).

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Table 4

Correlation Matrix for OCSSSS and WSAS

Variable	OCSSSS Component 1	OCSSSS Component 2	OCSSSS Component 3	OCSSSS Component 4	OCSSSS Component 5	OCSSSS Component 6	OCSSSS Component 7	OCSSSS Total	WSAS Total
OCSSSS Component 1									
OCSSSS Component 2	$.44^{**}$								
OCSSSS Component 3	$.59^{**}$	$.83^{**}$							
OCSSSS Component 4	$.57^{**}$	$.83^{**}$	$.85^{**}$						
OCSSSS Component 5	$.76^{**}$	$.58^{**}$	$.66^{**}$	$.65^{**}$					
OCSSSS Component 6	$.74^{**}$	$.33^{**}$	$.41^{**}$	$.39^{**}$	$.56^{**}$				
OCSSSS Component 7	$.54^{**}$	$.80^{**}$	$.81^{**}$	$.82^{**}$	$.64^{**}$	$.38^{**}$			
OCSSSS Total	$.90^{**}$	$.75^{**}$	$.84^{**}$	$.82^{**}$	$.85^{**}$	$.73^{**}$	$.79^{**}$		
WSAS Total	$.38^{**}$	$.69^{**}$	$.68^{**}$	$.72^{**}$	$.48^{**}$	$.23^{**}$	$.62^{**}$	$.60^{**}$	
Mean (SD)	21.13 (19.26)	5.38 (6.98)	4.80 (5.73)	4.65 (5.84)	5.48 (6.06)	8.37 (6.48)	2.77 (3.81)	60.53 (51.56)	4.21 (6.26)

Note**Correlation is significant at the 0.01 level (2-tailed).

Table 5
Correlation Matrix for OCSSSS and Insight/Avoidance

Variable	OCSSSS Component 1	OCSSSS Component 2	OCSSSS Component 3	OCSSSS Component 4	OCSSSS Component 5	OCSSSS Component 6	OCSSSS Component 7	OCSSSS Total	Y-BOCS: Insight	Y-BOCS: Avoidance
OCSSSS Component 1										
OCSSSS Component 2	$.44^{**}$									
OCSSSS Component 3	$.59^{**}$	$.83^{**}$								
OCSSSS Component 4	$.57^{**}$	$.83^{**}$	$.85^{**}$							
OCSSSS Component 5	$.76^{**}$	$.58^{**}$	$.66^{**}$	$.65^{**}$						
OCSSSS Component 6	$.74^{**}$	$.33^{**}$	$.41^{**}$	$.39^{**}$	$.56^{**}$					
OCSSSS Component 7	$.54^{**}$	$.80^{**}$	$.81^{**}$	$.82^{**}$	$.64^{**}$	$.38^{**}$				
OCSSSS Total	$.90^{**}$	$.75^{**}$	$.84^{**}$	$.82^{**}$	$.85^{**}$	$.73^{**}$	$.79^{**}$			
Y-BOCS: Insight	.010	$-.17^{**}$	-.12**	$-.12^{**}$	-0.05	.030	-0.07	-0.06		
Y-BOCS: Avoidance	$.25^{**}$	$.44^{**}$	$.41^{**}$	$.45^{**}$	$.31^{**}$	$.14^{**}$	$.36^{**}$	$.38^{**}$	-0.07	
Mean (SD)	21.13 (19.26)	5.38 (6.98)	4.80 (5.73)	4.65 (5.84)	5.48 (6.06)	8.37 (6.48)	2.77 (3.81)	60.53 (51.56)	1.96 (1.34)	.26 (.57)

Note. **Correlation is significant at the 0.01 level (2-tailed).

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Table 6

Correlation Matrix for OCSSSS and Treatment Ratings

Variables	OCSSSS Component 1	OCSSSS Component 2	OCSSSS Component 3	OCSSSS Component 4	OCSSSS Component 5	OCSSSS Component 6	OCSSSS Component 7	OCSSSS Total	Effectiveness of Past Treatments	Willingness to Participate in Future Treatment	Expected Effectiveness of Future Treatments
OCSSSS Component 1											
OCSSSS Component 2	.44**										
OCSSSS Component 3	.59**	.83**									
OCSSSS Component 4	.57**	.83**	.85**								
OCSSSS Component 5	.76**	.58**	.66**	.65**							
OCSSSS Component 6	.74**	.33**	.41**	.39**	.56**						
OCSSSS Component 7	.54**	.80**	.81**	.82**	.64**	.38**					
OCSSSS Total	.90**	.75**	.84**	.82**	.85**	.73**	.79**				
Effectiveness of Past Treatments	.10*	.35**	.26**	.32**	.16**	.09*	.26**	.23**			
Willingness to Participate in Future Treatment	.15**	.53**	.46**	.47**	.26**	.10*	.42**	.35**	.44**		
Expected Effectiveness of Future Treatments	.22**	.54**	.48**	.48**	.33**	.18**	.46**	.41**	.47**	.79**	
Mean (SD)	21.13 (19.26)	5.38 (6.98)	4.80 (5.73)	4.65 (5.84)	5.48 (6.06)	8.37 (6.48)	2.77 (3.81)	60.53 (51.56)	.29 (.94)	1.44 (.90)	.51 (1.08)

Note.**Correlation is significant at the 0.01 level (2-tailed).
Note.*Correlation is significant at the 0.05 level (2-tailed).

Table 7

Correlation Matrix for OCSSSS and URICA

Variable	OCSSSS Component 1	OCSSSS Component 2	OCSSSS Component 3	OCSSSS Component 4	OCSSSS Component 5	OCSSSS Component 6	OCSSSS Component 7	OCSSSS Total	Pre-Contemplation Total	Contemplation Total	Action Total	Maintenance Total
OCSSSS Component 1												
OCSSSS Component 2	.44**											
OCSSSS Component 3	.59**	.83**										
OCSSSS Component 4	.57**	.83**	.85**									
OCSSSS Component 5	.76**	.58**	.66**	.65**								
OCSSSS Component 6	.74**	.33**	.41**	.39**	.56**							
OCSSSS Component 7	.54**	.80**	.81**	.82**	.64**	.38**						
OCSSSS Total	.90**	.75**	.84**	.82**	.85**	.73**	.79**					
Pre-Contemplation Total	.13**	-.22**	-.13**	-.15**	.03	.14**	-.14**	-.01				
Contemplation Total	.08*	.42**	.33**	.38**	.21**	.05	.33**	.26**	-.34**			
Action Total	.08*	.34**	.27**	.28**	.19**	.05	.25**	.21**	-.22**	.82**		
Maintenance Total	.07	.40**	.32**	.35**	.20**	-.01	.32**	.23**	-.21**	.83**	.81**	
Mean (SD)	21.13 (19.26)	5.38 (6.98)	4.80 (5.73)	4.65 (5.84)	5.48 (6.06)	8.37 (6.48)	2.77 (3.81)	60.53 (51.56)	22.33 (6.20)	21/13 (8.22)	20.27 (7.46)	17.56 (6.88)

Note**Correlation is significant at the 0.01 level (2-tailed).

Note*Correlation is significant at the 0.05 level (2-tailed).

Table 8

Model Summary: Regression of Pre-Contemplation on Symptom Severity and OCSSSS

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.121[a]	.015	.013	6.139	.015	9.374	1	631	.002
2	.247[b]	.061	.053	6.012	.046	7.733	4	627	.000
3	.353[c]	.125	.114	5.818	.064	15.193	3	624	.000

a. Predictors: (Constant), Y-BOCS total

b. Predictors: (Constant), Y-BOCS total, OCSSSS negatively biased components

c. Predictors: (Constant), Y-BOCS total, OCSSSS negatively biased components, OCSSSS positively biased components

Table 9

Model Summary: Regression of Contemplation on Symptom Severity and OCSSSS

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.341[a]	.116	.115	7.727	.116	83.000	1	631	.000
2	.445[b]	.198	.192	7.385	.082	15.959	4	627	.000
3	.476[c]	.227	.217	7.269	.029	7.698	3	624	.000

a. Predictors: (Constant), Y-BOCS total

b. Predictors: (Constant), Y-BOCS total, OCSSSS negatively biased components

c. Predictors: (Constant), Y-BOCS total, OCSSSS negatively biased components, OCSSSS positively biased components

Table 10

Model Summary: Regression of Action on Symptom Severity and OCSSSS

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.266[a]	.071	.069	7.196	.071	47.949	1	631	.000
2	.354[b]	.126	.119	7.002	.055	9.842	4	627	.000
3	.371[c]	.138	.127	6.969	.012	2.986	3	624	.031

a. Predictors: (Constant), Y-BOCS total

b. Predictors: (Constant), Y-BOCS total, OCSSSS negatively biased components

c. Predictors: (Constant), Y-BOCS total, OCSSSS negatively biased components, OCSSSS positively biased components

Table 11

Model Summary: Regression of Maintenance on Symptom Severity and OCSSSS

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.339[a]	.115	.113	6.476	.115	81.873	1	631	.000
2	.420[b]	.177	.170	6.266	.062	11.755	4	627	.000
3	.467[c]	.218	.208	6.120	.042	11.137	3	624	.000

a. Predictors: (Constant), Y-BOCS total

b. Predictors: (Constant), Y-BOCS total, OCSSSS negatively biased components

c. Predictors: (Constant), Y-BOCS total, OCSSSS negatively biased components, OCSSSS positively biased components

Obsessive-Compulsive Self-Syntonicity Questionnaire

The Obsessive-Compulsive Self-Syntonicity Questionnaire is a self-report measure of the self-syntonicity (consistency with one's self-image) of an individual's obsessive-compulsive symptoms. The scale is comprised of 54 statements which are subdivided into five components: Perceived Positive Consequences of Obsessive-Compulsive Symptoms, Perceived Negative Consequences of Obsessive-Compulsive Symptoms, Desirability of Changing Obsessive-Compulsive Symptoms, Experience of Obsessive-Compulsive Behaviors as Part of Self, and Social Acceptability of Obsessive-Compulsive Symptoms.

Administration: The perceived social acceptability, consistency with self-concept (self-syntonicity), and desirability to change are also quantitatively measured. Individuals should be prompted to follow the instructions outlined on the first page of the questionnaire. Each person will rate how consistent/inconsistent each statement is with their perception of their symptoms over the last 30 days.

Scoring: Higher scores on the Obsessive-Compulsive Self-Syntonicity Questionnaire relate to an individual's view of their obsessive-compulsive symptoms in a positive light and as more consistent with their sense of self. To score the Obsessive-Compulsive Self-Syntonicity Questionnaire refer the Scoring Template.

Obsessive-Compulsive Self-Syntonicity Questionnaire

Obsessional thoughts (obsessions): intrusive or inappropriate thoughts, images, or ideas that are distressing and persistent; causing distress or anxiety.*

Please check all types of obsessional thoughts that apply:

☐	**Contamination**: Concern over being in contact with germs, dirt, or other substances due to a fear of negative consequences
☐	**Doubts**: Nagging/consistent thoughts
☐	**Order (or lack thereof)**: Consistent concern over things being in a certain place or in a certain order
☐	**Sexual**: Concerns/repetitive thoughts regarding sexual themes that cause discomfort/anxiety
☐	**Aggressive**: Concerns over controlling/committing aggressive acts

Compulsive behaviors (compulsions/rituals): Repetitive behaviors performed to reduce

feelings of anxiety, which may or may not be related to specific obsessions.*

Please check all types of compulsive behaviors that apply:

	Washing: Washing your hands/self longer than others in order to reduce discomfort
	Cleaning: continual cleaning of items/surfaces to reduce discomfort (i.e. washing the same cloths multiple times before wearing them)
	Ordering: Repetitively making sure everything is in its proper place/organized a certain way
	Checking: Repetitively making sure a task is completed (i.e. checking the stove repeatedly to make sure it was turned off)
	Hoarding: Keeping more items than necessary, even when not needed, for fear they will one day be useful (i.e. stockpiling empty shopping bags)

* Association, A. P. (2000). *Diagnostic and Statistical Manual of Mental Disorders: Fourth Edition text Revision.* Arlington, VA: American Psychiatric Association.

Instructions: Rate the following statements on a scale of 0-5 based on how consistent they are with your feelings regarding your obsessive and/or compulsive behaviors over the past 30 days. Use the following scale to rate each statement:

0	1	2	3	4	5
Not Applicable	Extremely Inconsistent	Partially Inconsistent	Neutral	Partially Consistent	Extremely Consistent

1. My obsessions and/or compulsions create anxiety.
2. My obsessive-compulsive behaviors help me be mindful of dangers.
3. I am happy with the quality of life my obsessions and/or compulsions provide.
4. My value as a person is attributable to my obsessive-compulsive behavior.
5. Bad things happen to me because of my obsessive-compulsive behavior.
6. I fantasize about a life where my obsessive-compulsive behaviors are gone.
7. My compulsive behaviors give me a sense of control over my life.
8. My obsessions and/or compulsions make my life miserable.
9. I don't want to stop performing my obsessive-compulsive rituals.
10. My obsessive-compulsive behaviors feel like they are being carried out by a person other than myself.
11. I would be reluctant to share the fact of my obsessive-compulsive behavior with someone I had just met
12. I don't want others to know I am embarrassed by my obsessions and/or compulsions.
13. My obsessive-compulsive problem limits my ability to engage in social activities.
14. I don't want to get rid of my obsessive thoughts.
15. My obsessive-compulsive behavior negatively affects my relationships with people close to me.
16. My obsessions and/or compulsions make it hard to get close to people.
17. I have not thought about a life free from my obsessive-compulsive behavior.
18. My obsessive-compulsive behaviors are socially acceptable.
19. My obsessive-compulsive behaviors stress people who are around me.
20. I am a better person because of my obsessive-compulsive behavior.
21. In general, good things happen because of my obsessive-compulsive behavior.
22. My activities are reduced by my obsessive-compulsive behavior.
23. My rituals are important to me.
24. My compulsive behaviors keep my life structured and orderly.
25. My obsessions and/or compulsions keep people I care about safe.

26. The quality of my life is negatively affected by my obsessive-compulsive behavior
27. My rituals help give me a feeling of control in my life.
28. When I talk about myself to others I make sure to mention my obsessive-compulsive behaviors.
29. My general health has been negatively affected by my obsessive-compulsive behaviors.
30. My obsessions and/or compulsions reflect my concern for the welfare of other.
31. My obsessions and/or compulsions are a financial burden.
32. I will do whatever necessary to stop my obsessive-compulsive behavior.
33. On balance, my obsessive-compulsive behavior has resulted in more positives than negatives.
34. My physical appearance is negatively affected by either my obsessions and/or compulsions
35. My obsessive-compulsive behaviors reinforce my sense of self.
36. My rituals keep me healthy.
37. I would like to eliminate the negative effects my obsessive-compulsive behavior has on others.
38. My obsessive-compulsive behaviors make me unique.
39. My obsessive thoughts alert me to risky situations.
40. My obsessive-compulsive behaviors reflect my value system.
41. My rituals are based on behaviors (organization; cleanliness) valued by others.
42. My obsessive-compulsive behaviors put me in a class by myself.
43. I like what my obsessive-compulsive behavior does for me.
44. My rituals prepare me for the unforeseen future.
45. The level of my obsessive-compulsive behavior is as low as I want it to be.
46. When I am engaged in my rituals I feel alienated from myself.
47. I feel left out because of my obsessions and/or compulsions.
48. My obsessive-compulsive behaviors have more positive than negative aspects.
49. People I know are critical of me because of my obsessive-compulsive behavior.
50. I am not trying to eliminate my obsessive-compulsive behaviors from my life.
51. My obsessions and/or compulsions do not define who I am.
52. My obsessive-compulsive behavior isolated me from others in social situations.
53. I don't even recognize myself when I am engaged in obsessive-compulsive behavior.
54. Other people do not understand my obsessions and/or compulsions.

Appendix B

Treatment Seeking Behavior

1. Please list all past treatment experiences related to your obsessive compulsive symptoms (including approximate dates of treatment).

    -
    -
    -
    -
    -

2. Evaluate the average effectiveness of your past treatments listed above. Use the scale provided below, circling the number that most closely resembles the average effectiveness.

Not Applicable	Not At All Effective	Very Little Effectiveness	Moderately Effective	Very Effective	Extremely Effective
0	1	2	3	4	5

3. Rate how willing you are to participate in future treatment for your obsessive compulsive symptoms by circling the corresponding number below.

Not Considering Treatment At All	Treatment Is Unlikely	Unsure	Considering Treatment	Treatment Is Likely
1	2	3	4	5

4. Rate how effective you believe future treatment for your obsessive compulsive symptoms would be by circling the number that corresponds with the expected effectiveness.

Not Applicable	Not At All Effective	Very Little Effectiveness	Moderately Effective	Very Effective	Extremely Effective
0	1	2	3	4	5

Appendix C

VIRGINIA POLYTECHNIC INSTITUTE AND STATE UNIVERSITY

Informed Consent for Participants

In Research Projects Involving Human Subjects

Obsessive Compulsive Self-Syntonicity of Symptoms Scale: Development, Reliability and Validity

I. Purpose of this Research/Project

The purpose of this project is to validate the Obsessive Compulsive Self-Syntonicity of Symptoms Scale (OCSSSS) and understand how it relates to motivation to change symptomotology. The OCSSSS was developed in order to help clinicians evaluate the extent to which individuals' view their obsessive compulsive symptoms as consonant with their sense of self, in order to help them understand why some individuals are more willing to invest in treatment to change their symptoms.

Subjects will be comprised of college level students from the Virginia Tech Community. One hundred subjects will be recruited from the Introductory Psychology class. Subjects will range from 18 years of age and older, all of whom are experiencing compulsive and/or obsessive symptoms

II. Procedures

The experimental session will be administered online via Virginia Tech's SONA system. Each participant will have an opportunity to complete three experimental sessions, the first of which will last approximately 60-90 minutes and the second of which will last approximately 15 minutes. If asked to participate in the third session, it will last approximately 35 minutes. The procedure is as follows:

Upon signing of the informed consent each participant will be administered the Yale-Brown Obsessive Compulsive Scale-Self Report, OCSSSS, Work and Social Adjustment Scale, Obsessive Compulsive Inventory, Measure of Treatment-Seeking Behavior, and the University of Rhode Island Change Assessment. Two weeks after the completion of the full assessment, each participant will again be presented with the OCSSSS as a follow up. Those whose score on the Yale-Brown Obsessive Compulsive Scale-Self Report in the top 15% will be administered

the Brown Assessment of Beliefs Scale, a pencil and paper version of the Obsessive Compulsive Inventory and Yale-Brown Assessment of Beliefs Scale-Self Report, and a second round of the OCSSSS.

III. Risks

Potential risks may include increased awareness of a problem by the participant and heightened anxiety. If your anxiety is hightened by participation in the study you may contact the reseasrchers. Following the completion of the study, each participant will be sent a debrief, explaining the purpose and findings of the study.

IV. Benefits

There are no direct benefits to the participant. Societal benefits exist in the further understanding of how obsessive compulsive symptoms relate to motivation to engage in treatment. The development of a scale to determine these barriers to motivation will greatly benefit clinicians by allowing them to focus on issues which are detrimental to the therapeutic process, thereby increasing treatment effectiveness and efficiency.

V. Extent of Anonymity and Confidentiality

All participant data will be de-identified by use of a personalized identification number. All information will be stored on a locked computer, with any paper copies stored in a locked cabinet Access to the information will be limited to the experimenters. At no time will the researchers release the results of the study to anyone other than individuals working on the project without your written consent. Upon completion of the study and analysis of the results, all identifying information will be deleted and/or shredded to assure anonymity. It is possible that the Institutional Review Board (IRB) may view this study's collected data for auditing purposes. The IRB is responsible for the oversight of the protection of human subjects involved in research. In situations where the subject is believed to be a threat to himself/herself or other confidentiality must be broken in order to ensure the safety of those parties.

VI. Compensation

Compensation will be provided for participation in the study in the form of course credit. Two points extra credit will be given upon completion of the informed consent and initial round of online questionnaires. If the participant completes the follow-up administration of the OCSSSS, a third point of extra credit will be given. Those who complete the Brown Assessment of Beliefs Scale and the paper and pencil version of the Obsessive Compulsive Inventory and Yale-Brown Obsessive Compulsive Scale-Self Report will be given a fourth point of extra credit. All participant who participate in the round of questionnaires will be entered into a raffle for a chance to win one of four $25.00 gift cards.

VII. Freedom to Withdraw

Participation is on a voluntary basis. Participants have the right to ask and discuss any questions or concerns that exist with the experimenter. Withdrawal from the study may take place at any point throughout the study without penalty. Participants will not be penalized by reduction in points or grade in a course and are free not to answer any questions or respond to experimental situations that they choose without penalty.

VIII. Subject's Responsibilities

I voluntarily agree to participate in this study. I have the following responsibilities: complete the online assessment measures and the Brown Assessment of Beliefs Scale, Obsessive Compulsive Inventory, and Yale -Brown Obsessive Compulsive Scale-Self Report Paper versions.

IX. Subject's Permission

I have read the Consent Form and conditions of this project. I have had all my questions answered. I hereby acknowledge the above and give my voluntary consent:

Chair, Virginia Tech Institutional Review
Board for the Protection of Human Subjects
Office of Research Compliance
2000 Kraft Drive, Suite 2000 (0497)
Blacksburg, VA 24060

_____ Date_____

Subject signature

_____ Date _____

Witness (Optional except for certain classes of subjects)

Should I have any pertinent questions about this research or its conduct, and research subjects' rights, and whom to contact in the event of a research-related injury to the subject, I may contact:

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