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## Understanding and Evaluating Stereotypes towards Obsessive Compulsive Disorder Symptom Subtypes

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Understanding and Evaluating Stereotypes towards Obsessive Compulsive Disorder Symptom  
Subtypes

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Dissertation **submitted to the**  
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**in partial fulfillment of the requirements for the degree of**  
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## Abstract

Understanding and Evaluating Stereotypes towards Obsessive Compulsive Disorder Symptom

Subtypes

Gabriella T. Ponzini

Public stigma has detrimental impacts on those with obsessive compulsive disorder (OCD). Yet, stereotypes associated with OCD are poorly understood. Given the heterogeneity of OCD symptom presentations, a conceptualization of stereotypes associated with symptom subtypes is warranted to inform stigma reduction efforts.

In Study 1 ( $N = 60$ ), participants read one of five vignettes on OCD subtypes (Symmetry/Just Right, Contamination, Sexual, Harm/Aggression, or Scrupulous) prior to responding to Internet-delivered open-ended questions. Study 1 methods followed the qualitative description framework, such that data were derived from participant responses and findings were presented using participant language. Prior to final coding and theme evaluation, all qualitative codes were validated by a subset ( $n = 23$ ) of participants (i.e., Study 1 member check). An inductive content analysis was used to allow qualitative themes to emerge from Study 1 data. These methods followed the systematic, empirical approach of the postpositivist conceptual framework.

In Study 2, ( $N = 698$ ) participants completed an Internet-delivered quantitative survey in which they were randomized to read one of seven vignettes (OCD subtypes, Generalized Anxiety Disorder, Schizophrenia) prior to completing previously established stigma measures and an OCD stigma measure developed from Study 1 themes.

In Study 1, a total of fifteen themes and two subthemes emerged across conditions. Stereotypes associated with anxiety-relevant stigma (e.g., trivial symptoms, social awkwardness) most commonly emerged for Symmetry/Just Right and Contamination, while stereotypes associated with serious mental illness stigma (SMI; e.g., dangerous, disturbed) emerged for Harm/Aggression and Sexual Vignettes. The Scrupulous vignette was associated with both anxiety-relevant and SMI stereotypes. Additionally, unique themes (e.g., odd, nuisance, and withdrawn) that are not typically associated with anxiety or SMI-stigma also emerged.

For Study 2, data suggested that the Sexual and Harm/Aggression vignettes appeared to be associated with the greatest stigma across measures compared to all other vignettes. However,

the Scrupulous vignette was associated with the greatest stigma on the anxiety-relevant subscale of the OCD stigma measure. Across measures, the Sexual, Harm/Aggression, and Schizophrenia vignettes demonstrated similar stigma endorsements, which were often greater than the Symmetry/Just Right, Contamination, and GAD vignettes. Like Study 1, the Scrupulous vignette was associated with both groupings; that is, of autogenous (i.e., repugnant/unacceptable thoughts; Sexual and Harm/Aggression) and reactive obsessions (i.e., thought content perceived as rational; Contamination and Symmetry/Just Right). Further, and aligned with hypotheses, prior mental health treatment and more frequent contact with symptomatic individuals were associated with lower stigma across assessments.

Across studies, results suggested that OCD stigma shares stereotypes with anxiety-relevant and SMI stigma. Though stereotypes emerged for specific OCD subtypes (e.g., withdrawn, nuisance), these do not appear to be unique to OCD (given their shared occurrence for Schizophrenia and GAD on the OCD stigma measure). In general, these studies support groupings of autogenous and reactive obsessions with regards to their SMI and anxiety-relevant stigma endorsement. However, the Scrupulous vignette appears to be strongly associated with both SMI and anxiety-relevant stigma (and thus, both autogenous and reactive groupings).

Stigma reduction interventions for OCD should focus on macro-level stereotypes (i.e., stereotypes that exist *across* symptom groupings, such as perceptions of blame or a social outcast). Moreover, interventions should include psychoeducation about obsessional content and be targeted to address contextual factors (e.g., sociodemographic characteristics, cultural considerations, symptom presentations) relevant to the population of interest to allow for frequent contact, and thus, stigma reduction.

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## Understanding and Evaluating Stereotypes towards Obsessive Compulsive Disorder Symptom Subtypes

### **Public Stigma and Psychological Disorders**

Imagine you walk into a room with the following three people: a person with schizophrenia, another with an anxiety disorder, and the last with obsessive compulsive disorder (OCD). What stands out to you about each of these individuals? How can you identify which person has what disorder? Likely, you pictured three people who differed in their appearances, behaviors, and/or mannerisms. While the differences you assigned to each person may not initially be of importance, these automatic attributions can also represent the foundations of public stigma.

Individuals with psychological disorders are often characterized by their mental illness, such that the public reduces affected individuals from whole persons to discounted ones (i.e., stigmatized; Goffman, 1963). In the sociocognitive model of stigma (Corrigan et al., 2003), negative attributions (i.e., stereotypes) about individuals with mental illness are formed via social learning (Vinacke, 1957). First, signals about a group of individuals (e.g., shared symptoms, deficits in social skills, irregular appearances, or behaviors; Corrigan & Kleinlein, 2005) allow for a separation between “us” and “them” (Link & Phelan, 2001). Then, categorizations, impressions, and expectations about such individuals are developed and adopted by society (i.e., social knowledge structures; Corrigan & Kleinlein, 2005). The resulting stereotypes (or the automatic, negative beliefs about affected individuals) incite emotional reactions (i.e., prejudice). Lastly, and aligned with Weiner and colleagues’ (1988) attribution theory (i.e., perceived causality of one’s behavior leads to related affective and behavioral responses), these cognitive

(stereotypes) and affective (prejudices) responses to individuals with mental illness result in discriminatory behaviors.

Decades of research have demonstrated the harmful effects of public stigma on employment and housing opportunities, health disparities, treatment-seeking, and self-stigma (i.e., the internalization of public stigma attitudes) across psychological disorders (Chaudoir et al., 2013; Corrigan et al., 2006; Corrigan & Kleinlein, 2005; Corbiere et al., 2011; Hipes et al., 2016). Yet, public stigma is malleable and effective interventions exist to reduce its negative impacts (Corrigan et al., 2012; Dalky, 2012; Griffiths et al., 2014). Specifically, interventions focused on addressing stereotypes and prejudice via psychoeducation (i.e., dispelling myths and providing factual content about psychological disorders) and contact (i.e., facilitated, positive engagements with affected individuals) have been the most effective at reducing discriminatory intentions (Corrigan et al., 2012; Dalky, 2012; Griffiths et al., 2014). Still, much of this research has focused on stigma reduction for types of serious mental illness (SMI; i.e., schizophrenia or psychosis).

Although individuals with schizophrenia and related disorders encounter particularly damaging stereotypes (e.g., perceptions of dangerousness, incompetence, and permanence, or no chance of recovery; Sheehan et al., 2017), individuals with more common psychological disorders also encounter stigma (Parcesepe & Cabassa, 2013). For example, research has demonstrated that stereotypes exist for anxiety disorders and often center on perceptions of weakness, attention-seeking, and symptom invalidation (Curcio & Corboy, 2020; Schofield & Ponzini, 2020). Further, research has demonstrated that among treatment-seeking individuals, the magnitude of stigma encountered across psychological disorders is similar even when the content of the stereotypes differs (e.g., perceptions of dangerousness vs. perceived weakness; Patten et



al., 2016). Provided that effective stigma reductions require targeted efforts (Watson & Corrigan, 2005), evaluating and subsequently addressing stereotypes specific to disorders may be necessary to reduce their associated stigma.

### **Public Stigma and Obsessive Compulsive Disorder**

OCD, for example, is a disorder that has only recently gained attention in the public stigma literature. OCD is a chronic psychological disorder (Eisen et al., 2010) affecting roughly 2.3% of individuals in the United States (Ruscio et al., 2010). Individuals with OCD endure recurrent and distressing thoughts, images, and/or urges (i.e., obsessions) that are often followed by repetitive behaviors and/or mental acts (i.e., compulsions) to reduce the associated distress (American Psychological Association, 2013). However, unlike many psychological disorders that have significant overlap in symptom presentations across sufferers, the content of obsessions and compulsions vary widely across those diagnosed (McKay et al., 2004).

To help conceptualize similar themes across symptom presentations, OCD symptom subtypes have been identified. Although prevalence rates for OCD symptom subtypes are not well-established, the National Comorbidity Survey Replication (NCS-R; Ruscio et al., 2010) indicated rates in individuals with a lifetime diagnosis of OCD (2.3%) as: Contamination (25.7%), Sexual and Religious (30.2%), Harm (24.2%) and Ordering (57.0%). Accordingly, symptom subtypes have been refined to include Contamination (e.g., preoccupation with cleanliness or germs/illnesses), Sexual (e.g., inappropriate, or unwanted sexual acts), Scrupulous (e.g., violation of one's moral/religious code), Harm/Aggression (e.g., violence towards oneself or others), and Symmetry/Just Right (e.g., a need for exactness/perceptions of asymmetry)<sup>1</sup>.

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<sup>1</sup> The present studies utilizes these symptom categorizations, which are based on the Yale Brown Obsessive Compulsive Symptom Checklist (YBOCS-SC; Goodman et al., 1989). The YBOCS-SC is used to assess OCD in clinical patients and has been used in the available literature to categorize symptom subtypes (Ponzini & Steinman, 2021).

When presented as a unitary construct (i.e., “individuals with OCD”) public impressions of OCD are relatively benign compared to other psychological disorders (i.e., SMI; Chasson et al., 2018). Such perceptions are likely due to media portrayals of OCD, which present individuals as comical and eccentric (e.g., someone who likes things neat/clean; Adrian Monk from *Monk*, Sheldon from *Big Bang Theory*) and incite beliefs that “everyone is a little OCD” (Pavelko & Myrick, 2015). Unfortunately, these portrayals result in largely inaccurate and conceptually narrow beliefs about OCD as a diagnosis, thus greatly minimizing the suffering of affected individuals (Fennell & Boyd, 2014). However, beliefs associated with accurate representations of obsessions and compulsions appear to be more complex and insidious than those that exist for OCD as a diagnosis (Ponzini & Steinman, 2021). That is, a recent review of vignette studies evaluating public stigma for OCD revealed that stigma appears to differ across symptom subtypes (Ponzini & Steinman, 2021). This review found that Harm/Aggression and Sexual OCD subtypes were most associated with perceptions of dangerousness and a self-reported desire for social distance, akin to schizophrenia. While review conclusions suggest that these OCD subtypes encounter more damaging stereotypes and discrimination compared with other subtypes (i.e., Contamination, Symmetry/Just Right, and Scrupulous), the available literature is limited by its assessments of public stigma.

To date, evaluations of OCD stigma have been assessed by measures designed to capture SMI stigma (e.g., the Attribution Questionnaire, Corrigan et al., 2003). While this assessment may be appropriate for some OCD symptom subtypes that resemble SMI to lay individuals (e.g., Harm/Aggression and Sexual; McCarty et al., 2017; Snethen & Warman, 2018), other OCD symptom subtypes (e.g., Contamination, Symmetry/Just Right) more closely resemble anxiety disorders. That is, there appear to be differences in perceptions of autogenous obsessions (ego-

dystonic, or repugnant/unacceptable thoughts: Sexual, Harm/Aggression, and Scrupulous), which are viewed as going against social norms like SMI (Brakoulias et al. 2013), and reactive obsessions (thoughts perceived as rational: Contamination and Symmetry/Just Right), which are likened to the worry associated with generalized anxiety disorder (Lee & Kwon, 2003). In this way, previous assessments may have only captured a fragment of the stereotypes encountered by individuals with OCD (Ponzini & Steinman, 2021).

In addition to failing to evaluate stereotypes typically associated with anxiety disorders (e.g., perceptions of weakness, symptom invalidation; Curcio & Curboy, 2020; Schofield & Ponzini, 2020), it is also plausible that stereotypes exist for OCD that are not seen for other psychological disorders. For example, there may be beliefs that individuals with OCD are morally deficient (e.g., for those with Scrupulous OCD) or perfectionistic (e.g., for those with Symmetry/Just Right OCD), which contribute to subsequent prejudice and discrimination. To the authors' knowledge, there are no available studies that evaluate stigmatizing beliefs towards individuals with OCD without limiting participant responses to assessments developed to measure stigma for other disorders. As such, current knowledge about OCD stigma is insufficient; a greater understanding of stereotypes associated with OCD symptom subtypes is warranted to determine whether differences in stereotype endorsement should be used to inform stigma reduction efforts.

### **Current Studies**

The aims of the current studies were two-fold: Study 1 aimed to define the stereotypes associated with OCD symptom subtypes and Study 2 aimed to quantitatively evaluate differences in stereotype endorsement across OCD symptom subtypes and other stigmatized psychological disorders (i.e., Generalized Anxiety Disorder and Schizophrenia). Study 1 employed a qualitative

descriptive design and utilized content analyses to garner a comprehensive understanding of the beliefs associated with OCD symptom subtypes. Then, Study 2 provided methodological triangulation (i.e., using multiple methods to study a phenomenon; Bekhet & Zauszniewski, 2012) via quantitative assessments of stereotypes associated with OCD and other disorders. The overarching goal of these studies was to gain a greater understanding of the public stigma associated with OCD symptom subtypes, which will inform future studies with respect to assessing and addressing public stigma for OCD.

### **Study 1 Overview**

#### **Methodological Framework**

While a majority of studies evaluating public stigma employ quantitative methods, recent efforts have demonstrated the need for and importance of qualitative stigma research (Stutterheim & Ratcliffe, 2021). Qualitative explorations of stigma allow for a detailed understanding of the complexities of stigma (e.g., the heterogeneity of stigmatizing beliefs), deeper community engagement (e.g., collaborative efforts to understand and dismantle stigma), and provide assurance that subsequent quantitative methods are appropriate and stigma reduction efforts are targeted (Stutterheim & Ratcliffe, 2021).

Accordingly, Study 1 utilized a qualitative description (QD) methodological framework to evaluate beliefs associated with OCD. QD studies allow researchers to gather “rich, straight descriptions” (Neergaard et al., 2009, p. 2) of participant perceptions, which provide an in-depth understanding of others’ views (Sandelowski, 2010). Whereas other qualitative methods interpret participant descriptions to convey information, QD is low-interference (i.e., conclusions from the data are derived from participant responses, and findings are presented using participant language; Sullivan-Bolyai et al., 2005). Studies that utilize QD are particularly useful for topics

with limited background information and/or studies that aim to inform future quantitative research (Al-Busaidi, 2008; Pope & Mays, 1995). Thus, the limited research assessing stereotypes specifically associated with OCD lends itself to QD methodology.

QD methods have been used in previous stigma research to detail the beliefs towards other psychological disorders. For example, Riffel and Chen (2020) employed QD to describe the attitudes, knowledge, and behaviors of healthcare students towards individuals with mental illnesses. Other studies describe stereotypes associated with individuals with bipolar disorder (Michalak et al., 2011), individuals with mental illness in long-term care facilities (Tzouvara et al., 2017), and caretakers of those with mental illness (Bonsu & Yendork, 2019) using QD methods. However, to the author's knowledge, no such studies exist to examine beliefs about individuals with OCD.

### **Conceptual Framework**

In addition to the application of the QD methodological framework, Study 1 will be guided by the postpositivist conceptual framework. Postpositivism encourages the evaluation of qualitative data as empirical and reductionistic (Creswell & Poth, 2018). Research guided by the postpositivist framework utilizes “systematic data collection and analysis procedures to ensure rigor” (Creswell & Poth, 2018, p. 34). Rigor in qualitative research has been defined as study credibility (i.e., trustworthiness of the data based on the use of multiple methods, such as triangulation or member checking), transferability (i.e., the applicability of the data to other, related settings or participants), dependability (i.e., clarity in the reporting of methods and data, which are able to be replicated), and confirmability (i.e., examination and transparency of the researcher's experience relative to the research process; Lincoln & Guba, 1985). In using QD

methods guided by the postpositivist framework, the present study seeks to rigorously identify and report on participant beliefs about OCD.

### **Study 1 Aims**

The primary aim of Study 1 was to define stereotypes associated with OCD symptom subtypes using participant descriptions. Symptom subtypes (rather than varied symptoms) were used to allow for a direct comparison across common symptom groupings that vary in their content (e.g., Contamination versus Sexual OCD). Moreover, the symptom subtypes that were selected (Symmetry/Just Right, Contamination, Sexual, Harm/Aggression, and Scrupulous) reflect those used in previous research (see Ponzini & Steinman, 2021) as well as the symptom groupings on the Yale-Brown Obsessive Compulsive Scale and Checklist (Goodman et al., 1989). Accordingly, to identify stereotypes across OCD symptom subtypes, participants were randomized to read one of the five vignettes prior to responding to Internet-delivered qualitative questions probing their beliefs about the individual presented in the vignette<sup>2</sup>. A between-subjects design was selected to limit participant burden and prevent comparison across vignettes.

### **Study 1 Methods**

#### **Study 1 Materials**

*Study 1 Vignettes.* Participants read a case vignette describing a character, John, who is experiencing one of the five OCD symptom subtypes (Symmetry/Just Right, Contamination, Sexual, Harm/Aggression, and Scrupulous). Each vignette presented obsessions and compulsions consistent with one symptom subtype. All vignettes met DSM-V diagnostic criteria (APA, 2013) for OCD. Vignette equivalence (Evans et al., 2015) was achieved by varying only the

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<sup>2</sup> Surveys delivered via online platforms have several benefits including: increased diversity in participant perspectives that increase the quality and validity of responses (Braun et al., 2017), improved disclosure and participation regarding sensitive topics due to participants *feeling* anonymous (Terry & Braun, 2017), and reduced participant burden (Braun et al., 2017; Braun et al., 2020; Terry & Braun, 2017).

information about OCD symptoms in the vignette (i.e., all extraneous details remained constant). All vignettes were approximately 100 words in length, had a readability level of 6-7<sup>th</sup> grade (below 8<sup>th</sup> grade, or the average American reading level; Doak et al., 1998), and described the same character “John” whose obsessions center around his children<sup>3</sup>.

To ensure the vignettes were valid in their presentations of OCD, three Ph.D.-level clinical psychologists and two clinical psychology doctoral students across institutions (with professional *and* lived experience of OCD) were involved in vignette development and refinement. Finalized vignettes were approved by all reviewers, with agreement that vignettes depicted accurate and equally severe presentations of OCD symptom subtypes. See Appendix A for OCD vignettes.

*Study 1 Qualitative Survey.* Open-ended qualitative survey questions were developed in accordance with guidelines from Creswell and Poth (2018). The central (i.e., broad questions addressing the research question) and sub-questions (i.e., questions used to further specify the central questions) were derived under the guidance of a qualitative expert (E.C).

Pilot testing of qualitative questions explored whether the developed questions elicited stigmatizing beliefs about individuals with OCD. To gather representative pilot data<sup>4</sup>, a convenience sample was recruited via Facebook ( $N = 53$ ). Responses from this pilot test allowed study authors to revise questions to better capture stigma about OCD (e.g., the initial question

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<sup>3</sup> The character name “John” was selected because it is the third most common male name in the last century (Social Security Administration, 2021) and has previously been used for vignettes in stigma research (e.g., Corrigan et al., 2003).

<sup>4</sup> An initial pilot test occurred in an undergraduate sample ( $N = 13$ ). However, the undergraduate students’ responses demonstrated a positively biased understanding of OCD, given their membership in Dr. Steinman’s lab (a research lab whose focus is on OCD and its treatment). Thus, this pilot data was not used to refine questions.

“*How would you describe John’s thoughts and behaviors,*” was revised to “*How would you describe John to a friend?*”<sup>5</sup>.

The final nine questions for the qualitative study consisted of two central questions and eight sub questions. The central questions aimed to have participants describe their beliefs associated with the OCD symptom subtypes. These questions were followed by sub-questions that sought to understand OCD stereotypes more broadly (i.e., via assessment of one’s opinions, expectations, and perceptions of others’ beliefs). All questions were reviewed to ensure that readability was below an 8<sup>th</sup> grade reading level, no questions were double-barreled or double-negative, and items were phrased as “what” and “how” instead of “why” to avoid cause and effect language (Creswell & Poth, 2018). See Appendix B for central and sub-questions.

### **Study 1 Data Quality Assurance**

To ensure data quality for Study 1<sup>6</sup>, the author consulted with an mTurk data quality expert (Dr. Shane Littrell). In accordance with his recommendations, the author implemented “botchas” (i.e., pre-screen items designed to prevent survey farmers and bots from participating in the survey; Littrell & Fugelsang, 2021). “Botchas” are completed prior to survey participation and require participants to demonstrate different skills, such as re-arranging words, unscrambling sentences, and identifying items from pictures. Additionally, “botchas” ensure participant attention to detail given the specificity of their instructions (e.g., “Do not include any punctuations and make sure there is no space after the last word of the sentence.”). Previous research has demonstrated improved data quality with the use of these and other data protections

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<sup>5</sup>. Questions were modified to reduce participant confusion (i.e., when participants indicated they did not know how to answer the question(s) in pilot data), to elicit stigmatizing responses (e.g., asking participants to describe John to a friend to help increase disclosure), and to simplify question wording.

<sup>6</sup> An initial batch of data ( $N = 30$ ) was collected via Amazon’s Mechanical Turk (mTurk). However, the data was not useable given that over two-thirds of responses were non-sensical, had survey questions copy-and-pasted as answers, and/or demonstrated a lack of English proficiency.



(Littrell & Fugelsang, 2021). As such, all subsequent data collections included the use of “botchas.”

### **Study 1 Participant Eligibility Criteria**

Participants for Study 1 were recruited through the CloudResearch platform (formerly known as TurkPrime; Litman et al., 2017) via mTurk<sup>7</sup>. Recruiting participants through the CloudResearch platform allowed for additional data protection measures (e.g., the use of “approved CloudResearch participants,” who are vetted mTurk workers that have shown evidence of attention and engagement in prior studies), thus furthering the quality of the collected data.

To be eligible for participation, individuals must have been able to proficiently read and write in English (determined via self-report). Additionally, eligible participants were CloudResearch approved, resided in the United States, had a HIT approval rate greater than 99% (i.e., proportion of their completed studies “approved” by requesters, indicating participant response quality), and completed under 500 HITs to reduce the number of non-naïve participants (i.e., individuals exposed to common experimental manipulations and stimuli; Meyers et al., 2020). Lastly, all participants must have successfully completed the pre-screen “botchas” to progress to the survey; if they did not, they were not permitted to take the survey.

Participants were recruited in batches to allow for appropriate data coding and thematic saturation to occur (see Data Analytic section below). In the first batch ( $n = 30$ ), eligible participants were ages 18 and older. To ensure diversity in age and education in subsequent

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<sup>7</sup> Amazon’s Mechanical Turk (mTurk) is frequently employed in public stigma research and has been used to assess public stigma for OCD symptom subtypes (McCarty et al., 2017; Homonoff & Sciotto, 2019). Research has demonstrated no differences in completion time, word count, and completeness of responses for open-ended surveys across mTurk and in-person samples (Behrend et al., 2011).

batches<sup>8</sup>, we stratified recruitment. That is, in batch 2a ( $n = 15$ ), eligible participants were ages 50 and older, and in batch 2b ( $n = 15$ ), eligible participants had education levels below a bachelor's degree (i.e., Associate's degree and lower). These batches were collected simultaneously and will be referred to as "batch two."

### **Study 1 Participant Characteristics**

The final sample of 60 participants was randomly assigned to read one of the five vignette conditions: Symmetry/Just Right ( $n = 10$ ), Contamination ( $n = 16$ ), Sexual ( $n = 11$ ), Harm/Aggression ( $n = 13$ ), or Scrupulous ( $n = 10$ ). Participants self-reported their gender identities as 60% male, 36.7% female, 1.7% transgender, and 1.7% preferred not to answer. The ages of participants ranged from 19 – 67 ( $M = 37$ ,  $SD = 15.09$ ) and on average, they completed 15.49 years of education (range of 12 – 20 years). Self-reported racial identities were as follows: 70% White, 13.3% Black or African American, 8.3% Asian, 3.3% American Indian, 1.7% Native Hawaiian or Pacific Islander, and 3.3% preferred not to answer. A total of 6.7% of the sample reported Hispanic or Latinx ethnicity. For diagnostic history, 31.7% of participants endorsed at least one prior diagnosis of a mental illness. Self-reported diagnoses included: depression ( $n = 15$ ), any anxiety disorder ( $n = 10$ ), bipolar disorder ( $n = 3$ ), OCD ( $n = 2$ ), post-traumatic stress disorder ( $n = 2$ ), and any personality disorder ( $n = 1$ ). With regards to previous psychological treatment, half (50%) of the sample endorsed no prior treatment, while 13.3% endorsed past therapy, 6.7% medication, 26.7% combined (therapy + medication) treatment, and 3.3% preferred not to answer. No participants were excluded from analyses. See Table 1 for demographic characteristics across vignette conditions.

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<sup>8</sup> In reviewing the data from Batch 1, participants were overwhelmingly young (i.e., average age in their 20s) and well educated (i.e., average education level of graduate school). Thus, subsequent batches were stratified in their recruitment based on age and education.

## Study 1 Procedure

Following participant consent and successful “botcha” completion, a cover story was presented to participants to reduce social desirability in open ended responses (e.g., Ponzini & Schofield, 2019; Lewis-Beck et al., 2004). The cover story read as follows: “*We are a team of filmmakers who are creating a movie entitled “The Mind That Makes Us.” This movie is about a man named John, who is trying to find his place in the world. You will read a brief description of John and provide us with feedback on his character. Your feedback will help inform our character development.*” After reading this cover story, participants were randomly assigned to read one of the five OCD vignettes. Participants were instructed to read the vignette carefully, as they would not be able to return to the vignette when responding to subsequent questions.

Next, participants responded to qualitative survey questions and one additional question to maintain the cover story (“How long do you think this movie about John should be?”). Participants then responded to demographics questions (e.g., race/ethnicity, gender, age, education, psychiatric diagnosis, and treatment history). At the end of the survey, participants were asked whether they were interested in participating in a follow-up survey to gather additional information about their perceptions of John’s character. If participants responded “yes,” they were compensated \$2.00 for their time and informed that they would receive a notification for the follow-up survey (described below). If participants responded that they were not interested in participating in the follow-up survey, they were compensated with \$2.00 and debriefed about the nature of the study.

## Study 1 Initial Data Analysis

*Study 1 Content Analysis.* To systematically evaluate survey responses in Study 1, an inductive content analysis was employed. Content analysis is the most often utilized approach to

analyze QD methods (Kim et al., 2018; Sandelowski, 2000). For an inductive approach, categories (i.e., codes) are derived from the data (as opposed to deductive analyses where the data is applied to previously established categories; Elo & Kyngas, 2007). Then, codes are mapped onto higher-order categories and grouped according to shared concepts (Elo & Kyngas, 2007). Such analyses allow for replication of analytic methods, which can enhance the validity of conclusions drawn from the data (Krippendorff, 1980). This approach is recommended for studies that are not theory-driven and have limited previous research (Elo & Kyngas, 2007). For the present study, the unit of analysis for which codes were derived was the participants' full responses for each survey question (i.e., at least one code was assigned for each survey question response per participant). All codes were developed using participant language in open-ended responses.

*Study 1 Data Coding.* Nvivo (Nvivo Software, 2020) was used for data management and coding purposes. The codebook was developed by GP and her undergraduate research assistant (MS) on the first batch of data<sup>9</sup>. The codebook was developed for use across all vignette conditions; it listed all possible codes (e.g., “incompetent), as well as the operational definition for those codes (e.g., “difficulty completing tasks, not having necessary skills, unprofessional, inability to function”), and representative quotes from participants. The codebook was revised as additional data were reviewed. Data was reviewed after each batch of data collection to allow for codebook development and the determination of data saturation.

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<sup>9</sup> A practice codebook was developed prior to the actual codebook for training purposes. That is, for training in qualitative coding prior to Study 1, the Facebook-collected pilot data was used by the study author and her research assistant (MS) under the instruction of qualitative expert (Dr. Elizabeth Claydon). In addition to identifying the coding structure and analysis plan that would be used for Study 1 data (see text), GP and MS used this pilot data to define strategies for identifying stereotypes in qualitative responses (i.e., how to separate a categorical label, such as “anxious,” from a stereotype, such as “germaphobe”), and learn how to develop codes, code the data, and utilize a codebook to prepare for actual data analyses.

Following the first batch of data collection, GP and MS collaboratively reviewed data from two randomly selected participants per vignette condition (i.e., ten participants total selected using a random number generator) to develop an initial list of qualitative codes for the codebook. Then, GP and MS independently coded data from one randomly selected participant per vignette condition (i.e., five participants total). Following their independent coding, GP and MS reviewed their codes until they reached 100% agreement. Then, the codebook was revised to reflect coding agreements. After the second batch of data collection, GP and MS independently coded two randomly selected participants per vignette condition (i.e., ten participants total). Following their independent coding, GP and MS reviewed their codes until they reached 100% agreement. The codebook was revised again to reflect coding agreements.

Thematic saturation was used to determine the end of data collection. Saturation is said to occur when no new themes arise from the data and there is enough information to replicate study findings (Fusch & Ness, 2015). For the present study, saturation was defined as no new codes being added to the codebook, which occurred after two batches of data collection. Saturation was determined by GP, MS, and Drs. Steinman and Claydon following a review of the codebook and the associated data.

### **Study 1 Initial Data: Follow-up Member Check**

Lincoln and Guba (1985) indicate that seeking participant feedback (i.e., member checking) is critical to ensure the validity of qualitative data. Accordingly, all participants who reported interest in participating in a follow-up survey ( $n = 57$ ; 95% of participants from Study 1) were emailed through CloudResearch to participate in the member check. A total of 23 participants (40% of interested participants from Study 1) completed the member check. Participants in the member check had been previously assigned to the Symmetry/Just Right ( $n =$

4), Contamination ( $n = 8$ ), Sexual ( $n = 3$ ), Harm/Aggression ( $n = 4$ ), and Scrupulous ( $n = 4$ ) vignettes in Study 1.

Participants were introduced to the survey with the following information, “*After collecting feedback from a number of people, we developed a list of words and phrases people used to describe John. We are interested in your opinions on whether most people would agree with these words and phrases.*” Participants were asked to indicate the ID number provided to them, which was associated with their vignette condition in Study 1 (e.g., in the follow-up email, participants assigned to the Contamination vignette were instructed to enter “2” as their ID number upon starting the survey). This allowed participants to provide feedback *only* on the qualitative codes that were specifically associated with their vignette in Study 1.

Participants then re-read their vignette from Study 1. After, they were presented with a series of statements (e.g., “John is a worry wart”) that reflected the codes endorsed in Study 1 for their specific vignette. Participants were presented with a similar number of statements for each symptom subtype (i.e., between 17 and 23 statements per condition). After being presented with each statement, participants were asked to respond with one of the following options: 1) “Most people would agree with this phrase,” or 2) “Most people would NOT agree with this phrase. Instead, they would say...”. If participants selected option two, they were asked to specify what they believed others would say. A dichotomous response style was chosen to calculate participants’ agreement with developed codes. Additionally, open-ended feedback allowed for developed codes to be modified and new codes to be added to the codebook based on participant responses.

Lastly, after responding to condition-specific stereotypes, all participants were asked to list any other words or phrases that people would use to describe John that had not previously

been listed. Then, all participants were compensated \$1.50 and debriefed about the nature of the initial study and member check.

### **Study 1 Initial Data: Follow-up Data Analysis**

*Study 1 Results from Member Check.* A summarization of the results from the member check can be found in Table 2. Across conditions, most participants agreed with the codes developed. A review of the open-ended responses associated with a “disagree” response also suggested that for most statements, there was some stereotype agreement without full endorsement. For example, for the code “incompetent” for the Symmetry/Just Right vignette, a participant who disagreed wrote “it [his thoughts/behaviors] can sometimes interfere with certain duties,” suggesting partial stereotype agreement (rather than disagreement).

Subsequently, stereotypes identified in the member check that had been suggested more than once by participants to describe John (e.g., neurotic) were added to the codebook. Additionally, wordings of previous codes were revised to better reflect participant suggestions (e.g., original code: need for control, revised code: overbearing). No codes were removed from the codebook given the general agreement with codes across symptom subtypes. See Appendix C for the final codebook.

### **Study 1 Final Data Analysis**

*Study 1 Final Coding and Interrater Reliability.* Following the member check and the edits to the codebook, GP and MS completed the final coding of the qualitative data. GP independently re-coded all data, while MS independently re-coded 20% of the remaining data (i.e., data that had not previously been coded; per the recommendation of Loewen & Plonsky, 2015). Prior to collaborative review, an inter-reliability analysis was conducted to determine the proportion of agreement between GP and MS final coding ( $\kappa = .80$ ), which indicated substantial

agreement. Then, differences in coding were reviewed, and a final agreement on 100% of codes was reached.

*Study 1 Theme Development.* Consistent with content analyses, themes were identified for each of the OCD symptom subtypes by grouping individual codes according to shared concepts (Elo & Kyngas, 2007). Given that all qualitative questions were aimed at identifying stereotypical beliefs about the symptom subtypes, codes were analyzed across open-ended responses for each participant (i.e., each stereotype was counted only once per participant). To identify the main themes for each subtype, the frequency of coded responses (i.e., number of times “trivial” was coded across participants for Symmetry/JR) was identified. Given the large number of codes per symptom subtype (range between 20 and 27), the author decided to focus on the most strongly endorsed codes for analysis. That is, codes endorsed by at least half of participants within each symptom subtype were evaluated for shared concepts and grouped to develop themes (e.g., “unpredictable” and “violent” to form “dangerous”) and subthemes (i.e., specifiers for larger themes) for that subtype. Consistent with QD methods, all language for themes was pulled from participant descriptions.

### **Study 1 Results**

Across symptom subtypes, there were unique and shared stereotypes endorsed. Each of the themes associated with the symptom subtypes is presented below with representative participant quotes. The selected quotes were initially chosen by GP and were then reviewed by MS and Drs. Steinman and Claydon for representativeness. The numbers beside the participant quotes represent de-identified participant ID numbers. Additionally, the themes are presented in order of participant agreement (i.e., themes listed first have the greatest shared agreement). For



brief summaries of stereotypical depictions of each symptom subtype using participant language, see Table 3.

### **Symmetry/Just Right**

*Trivial Concerns (Theme).* Overwhelmingly, participants believed John is someone who needs to relax, worry less, and think “bigger picture.” Participants minimized his experience of anxiety by indicating his worries were trivial in the grander scheme of life:

*“John is obsessed with small stuff.” (1)*

*“John needs to relax and stop worrying so much about the pictures and focus more on his children.” (3)*

*Problematic Thoughts and Behaviors (Theme).* Participants saw John as someone whose thoughts and behaviors are problematic and require professional assistance:

*“John seems to have a mental issue with things being uneven.” (30)*

*“In my opinion, John has some mental problems that he might need help with...” (35)*

*Nuisance (Theme).* John was identified as someone who would be difficult to be around due to his presenting symptoms. Participants believed he could be annoying and create stress for others:

*“He would probably be fine to talk to in small doses, but he’s hard to get to know well because his energy can stress other people out.” (1)*

*“John would be someone that would be difficult to get along with at first. He is someone that you need to take time to acclimate with.” (32)*

*Odd (Theme).* Participants described John as someone who is strange, quirky, and awkward. Individuals believed he would engage in atypical behaviors, which center on task repetition:

*“John may be jittery and awkward. I think he would probably repeat words and phrases and just seem odd.” (3)*

*“...he used to be normal and one day he just started acting strangely and became obsessed with fixing crooked things.” (36)*

*Kind Person (Theme)*. John was identified as someone whose symptoms enabled him to be polite, genuine, and caring towards other. These beliefs were especially evident with regards to his family:

*“I would say that John seems like a caring person and that he wants to make sure his children are safe.” (35)*

*“John’s family would probably say that he was a good son and brother, and that he is thoughtful...” (35)*

*Kind Person... If he isn’t triggered (Sub theme)*. Although participants felt John would be good to others, they also believed he could be easily triggered, which may change his behaviors. That is, people would come to identify his abnormalities if he became distressed:

*“I would expect him to be a polite guy. I think he would come across as normal for the most part but some of his behaviors would seem a bit off if he is triggered by something.” (2)*

*“I think as long as you went somewhere without many uneven things or things that can be made uneven, he would be a nice, normal person that cares about his family.” (36)*

## **Contamination**

*Problematic Thoughts and Behaviors (Theme)*. Participants saw John as someone whose thoughts and behaviors are problematic and require professional assistance:

*“John is a really nice guy, but he’s got issues. He loves his kids and wants to do right by them, but he is also an extreme germaphobe. He needs help, but don’t think his problem is something you can just talk him out of. He knows his “issue” is a problem, but try as he might, he just can’t seem to get over it.” (10)*

*“I think John’s friends would say that they are concerned about him. They would probably say that he needs to get help in order to start behaving normally once again.” (7)*

*Trivial Concerns (Theme)*. John was perceived as having trivial concerns, with regards to his fears about germs and contamination. Participants indicated he needs to worry less and focus on different aspects of his life:

*“An extreme germaphobe who has a very unjustified fear of spreading disease.”* (43)

*“...He probably has a low quality of life because he is focused on the wrong things.”* (4)

*Incompetent Employee (Theme)*. Participants did not believe John would be capable of carrying out his necessary work responsibilities. They believed he would be unproductive due to his compulsions:

*“I think John would have trouble holding down a job. Unless he is a remote worker, I think his employers might think he is trying to get out of work by spending all of his time in the bathroom (washing his hands).”* (10)

*“John’s employers likely think he is a bad employee because he spends too much time trying to stay clean, i.e., washing his hands for long periods of time.”* (42)

*Good Parent (Theme)*. John was viewed as someone who is a loving and caring parent. Participants found his concern for his children’s wellbeing as endearing:

*“John is a great guy. He has children that he really seems to care about. He tries to take care of himself the best he can.”* (6)

*“I think well of him since he is so concerned about the well-being of his children. I would he guess that he is a good dad...”* (40)

*Good Parent... Except for his Anxiety (Sub Theme)*. Although participants believed John would be a good father to his children, they also believed his anxiety may render him an ineffective parent. They noted that John may be overprotective, and his avoidance of triggers may negatively impact his kids:

*“They [John’s family] would probably say that his need to constantly be clean is starting to affect his relationship to his children.”* (7)

*“John really means well; he just loves and cares about his kids. But his anxiety over them getting sick gets to be a little bit too much sometimes. He can be avoidant and overprotective.”* (40)

*Distant (Theme).* Participants described John as someone who is distant from others.

They believed he would be quiet, standoffish, and socially awkward due to his obsessions and compulsions:

*“He wouldn’t shake my hand. I can imagine he wouldn’t make much eye contact and probably want to leave as quickly as possible. I don’t think he would be much of a conversationalist for fear of contamination. His hands would be in his pockets all the time and his shoulders a little hunched, as if trying to make himself smaller so as not to touch anything.”* (45)

*“I would describe John as someone who is not socially available because he so pre-occupied with germs.”* (5)

## **Sexual**

*Problematic Person (Theme).* John was viewed as a disturbed individual, who is a threat to others:

*“John is a disturbed individual who should have his children removed from his home.”* (48)

*“Well if they knew about the sexual arouse [arousal] they would think something was wrong with him and maybe even say he is a sick individual.”* (46)

*Odd (Theme).* Participants believed that John would present as someone who is strange, off, or troubled. They believed this would make him an outcast in society:

*“I would describe him like this, ‘I know this guy John and he’s a total weirdo...’”* (11)

*“John seems to struggle to act in a manner within conventional norms”* (17)

## **Harm/Aggression**

*Problematic Thoughts and Behaviors (Theme).* John was portrayed as someone whose thoughts and behaviors are problematic and require professional assistance:

*“My opinions on John are that he is not a bad person, however, I do believe that he needs to get help from a doctor to try and figure out exactly why he keeps having thoughts like this...” (49)*

*“I would say that he is dealing with a severe mental and emotional imbalance that requires professional help.” (54)*

*Withdrawn (Theme).* Participants believed John is isolated, quiet, and distant from others.

He was depicted by many as lonesome and a social outcast due to his symptoms:

*“I would expect that he would seem a bit backward and nervous. He wouldn't probably be very personable or talkative, keeping to himself. I'd think he'd be unable to focus on conversations very well and would be edgy.” (22)*

*“I don't think John would have many (any?) close friends because of his guilty secret. I think acquaintances would say similar generically good things about John: he's quiet, polite, keeps to himself most of the time. I didn't know him well.” (52)*

*Dangerous (Theme).* John was depicted as someone who has violent urges and may lose control of himself. He is viewed as relatively unstable and someone who may act on impulse:

*“I would describe John as unstable and frightening.” (24)*

*“I would be worried about John losing control of himself and harming his children. Makes me afraid of him.” (53)*

*Trivial Concerns (Theme).* John was perceived as someone who is unable to manage his distress and is concerned with trivial topics:

*“John is an anxious person that seems to get stressed out easily. Things such as cooking in the kitchen with his children even makes him stressed. He seems to take an inordinate amount of time going over the knives in his kitchen.” (53)*

*“They may have noticed that he's anxious at times, but, most likely, believe that's just one of John's personality quirks.” (4)*

*Kind Person (Theme).* Participants believed John would be perceived as a nice by others due to how he presents himself:

*“I would expect him to a nice person and possibly wave as I pass him.” (21)*

*“I think a new employee who works with John would say that he seems like a nice, quiet, mild mannered person.” (20)*

*Kind Person... On the Outside (Sub Theme).* However, participants agreed that his kind demeanor was not reflective of his true self. While they believed he would be nice in appearance, they noted that if you knew the “real” him, you would see his dark side:

*“Very much like Norman Bates in Psycho. Yes, I remembered. Much could be overlooked if you didn’t know him well, but if you did know about his fantasies you would probably see telltale signs of a psychological imbalance.” (52)*

*“...Some people appear very normal on the exterior and in certain environments. If I knew the details of his illness prior to meeting him- I would really study his communication and physical actions. If he were nutty from the get go, then my expectation would be that he has severe issues. If he seemed normal, and I did not know this storyline, I wouldn’t think twice.” (54)*

*Capable of Change (Theme).* Encouragingly, participants believed John could change the outcomes of his thoughts and behaviors with appropriate psychological treatment:

*“I would expect him to still be the same type of person [five years from now]. However, he would probably have more control over his violent urges, as he most likely sought some help.” (50)*

*“Hopefully John would have received some help [five years from now] and would be back to his normal self, spending time with his kids and obviously much happier.” (22)*

## **Scrupulous**

*Problematic Thoughts and Behaviors (Theme).* Participants saw John as someone whose thoughts and behaviors are problematic and require professional assistance:

*“I believe that John is probably suffering from a psychological condition. The nature of that is one I’m not qualified to pinpoint. However, if he doesn’t seek professional help, I’m confident he’ll destroy himself—and those around him--eventually.” (57)*

*“I would describe John as a man who loves the Lord, but is having a hard time battling his demons.” (29)*

*Trivial Concerns (Theme)*. John was described as someone who is plagued by his anxiety. Participants believed he needs to learn to better manage his distress:

*“John is highly stressed. He needs to relax and try to get over his anxieties.”* (55)

*“He is an over thinker.”* (26)

*Religious Zealot (Theme)*. Participants described John as being overly preoccupied with God’s approval. They viewed his rigid religiosity as a concern:

*“His coworkers could look at him at face value as an idiot Jesus freak that believes God will hurt his children if he doesn’t pray all of the time...”* (59)

*“John devotes too much time attempting to earn God’s approval.”* (56)

*Withdrawn (Theme)*. Participants believed John to be introverted, distant, and shy around others:

*“I would expect him to be really shy and keeps to himself most of the time.”* (27)

*“Someone who seems disconnected from the world.”* (29)

*Incompetent Employee (Theme)*. Participants did not perceive John as someone who can carry out work responsibilities. They believed he would be unproductive due to his praying and intrusive thoughts:

*“I’m sure he probably spends time at work praying and having anxieties about offending God. I could honestly see him as being more wound up at work because depending upon the job, that’s definitely a place that’ll make you use God’s name in vain. He’s probably a little bit unreliable because those intruding thoughts likely distract him.”* (28)

*“John’s employers would say that he is having difficulties completing his job duties.”* (29)

### **Interim Discussion**

The results from this QD study depict a range of stereotypes endorsed by participants across OCD symptom subtypes. While many stereotypes were negative in their attributions,

positive stereotypes (e.g., good parent) consistent with advantageous characteristics seen for OCD as a diagnosis (Pavelko & Myrick, 2020) were also defined. Importantly, however, the positive stereotypes that emerged had associated subthemes that appeared to undermine these characteristics (e.g., good parent *when* he isn't anxious; kind person *when* he isn't triggered). In general, it appeared that perceptions of positive attributes could not be fully expressed by participants in qualitative responses, given that the OCD symptom presentations were inextricably linked with pervasive anxiety and distress. Although some positive attributes were strongly endorsed on their own via the member check (e.g., "nice," and "good person," had 100% participant agreement when presented independent of other stereotypes for Symmetry/Just Right, Contamination, and Scrupulous vignettes), the open-ended responses revealed that such agreement was contingent on anxiety suppression. This finding is consistent with prior research suggesting that when symptoms are seen as potentially problematic (e.g., unnecessary anxiety), suppression of such symptoms is necessary to avoid stigmatization (Pavelko & Myrick, 2020).

*Overview of Study 1 Shared Themes.* Across OCD symptom subtypes, there were themes that emerged that were similar or shared. With regards to the Symmetry/Just Right, Contamination, Harm/Aggression, and Scrupulous vignettes, all participants believed that the John had "issues" that required treatment. Participants stated that his presenting symptoms (i.e., obsessions and compulsions) were problematic and atypical. Yet, for the Sexual vignette, participants described John *himself* (rather than his presenting symptoms) as problematic and a threat to society, indicating no difference between him as a person and his thoughts and behaviors. While there was a clear distinction between perceived normality and abnormality across vignettes (which, appeared to take on the "us" versus "them" differentiation commonly seen across stigmatized psychological disorders; Rusch et al., 2005), the stigmatization towards



the Sexual vignette clearly demonstrated the diminution of John from a whole person to a discounted one as a result of his symptoms (Goffman, 1963). In this way, the stigmatization of the Sexual vignette appeared to be the strongest among the other OCD symptom subtypes.

Alternatively, John's symptoms were trivialized across Symmetry/Just Right, Contamination, and Scrupulous vignettes. For each of these subtypes, John was perceived as a "worry wart," who needed to focus less on their respective obsessional themes and more on the bigger picture. Although John's experience was also trivialized in the Harm/Aggression vignette, participants trivialized his experience of anxiety (i.e., John is overly preoccupied with his concerns), rather than the content of his obsessions (i.e., impulsively stabbing his children). Across vignettes, the minimization of John's distress surrounding his obsessions and compulsions is consistent with the invalidating, dismissive, and skeptical views associated with anxiety disorders (Schofield & Ponzini, 2020).

John was also viewed as an incompetent employee for both the Contamination and Scrupulous vignettes. It is possible that the framing of the vignettes for these subtypes (e.g., repetitive hand washing and praying) incited beliefs that compulsions could be carried out anywhere, whereas compulsions noted for other subtypes (e.g., Harm/Aggression and counting kitchen knives) may be limited to a home-based setting (thus, not interfering with work-related tasks). Next, for both the Harm/Aggression and Scrupulous vignettes, John was depicted as being withdrawn from others with regards to his mannerisms (e.g., introverted, quiet, and isolated). It is likely participants viewed John as having a guilty secret, congruent with perceptions of autogenous obsessions as going against social norms (Brakoulias et al. 2013). Further, although withdrawn did not emerge as a theme for the Sexual vignette, it was endorsed by over a third of participants, suggesting that this is a relevant distinction between autogenous and reactive

obsessions (for which this theme did not emerge at all). Lastly, for the Symmetry/Just Right and Sexual vignettes, John was perceived as odd. Whereas John's oddities for Symmetry/Just Right were focused on his quirkiest and awkwardness, his oddities for the Sexual vignette centered on him being a troubled outcast. These differences appear to be aligned with the abovementioned differences in the "issues" participants noted for John in the Sexual (i.e., problematic person) and Symmetry/Just Right (i.e., person with problematic, trivial concerns) vignettes.

*Overview of Study 1 Unique Themes.* In addition to the shared themes demonstrated across subtypes, unique themes also emerged for individual symptom subtypes. For example, participants viewed John in the Symmetry/Just Right condition as being a nuisance to others. The belief that John is a nuisance is similar to beliefs that individuals with anxiety disorders are burdensome to their friends and family (Griffiths et al., 2011; Schofield & Ponzini, 2020). Another unique theme that emerged was the belief that John was distant from others due to his preoccupation with germs for the Contamination vignette. This theme differed from the withdrawn theme seen for Harm/Aggression and Scrupulous vignettes due it being centered on the content of his obsessions and compulsions (e.g., avoidant of germs), rather than his personality (e.g., avoidant of others). For the Contamination vignette, participants also uniquely viewed him as a good parent for caring about his children's safety. Yet, they expressed concerns about his ability to parent when he was "triggered." In this way, participants appeared to find John's concerns about his children's safety as acceptable, while also perceiving the intensity of his anxiety surrounding these concerns as abnormal.

The Harm/Aggression vignette was the only vignette strongly associated with perceptions of dangerousness *and* the only vignette strongly associated with potential for change, indicating participants' concern and hope for this character. Although perceptions of dangerousness were

akin to beliefs associated with individuals who have SMI (Corrigan et al., 2003), their beliefs about his ability to recover differ. That is, research suggests that individuals with SMI are often faced with perceived symptom permanence, which is likely due to perceptions that biological underpinnings are responsible for the development and maintenance of SMI (Sheehan et al., 2017). Encouragingly, however, for the Harm/Aggression vignette, participants viewed his symptoms as malleable.

Lastly, the Scrupulous vignette resulted in a unique stereotype about John's rigid religiosity and the impact it has on others. The belief about John's aggressive religious beliefs may represent a unique intersection between stigma associated with religious denomination and OCD tendencies. Given the limited research on scrupulous OCD and stigma, this relation warrants further exploration.

### **Interim Conclusions**

Together, results from this QD study suggest stereotypes were both shared and unique in their endorsement across OCD symptom subtypes. When considering the *most* endorsed stereotypes, the Symmetry/Just Right and Contamination subtypes appeared to be strongly associated with stereotypes common to anxiety-related stigma (e.g., symptom invalidation), whereas the Harm/Aggression and Sexual vignettes were associated with SMI stigma (e.g., dangerous, disturbed person). These data align with the differentiation between reactive obsessions (i.e., Symmetry/Just Right, Contamination) and autogenous obsessions (i.e., Sexual, Harm/Aggression) and their respective associations with anxiety disorders and SMI (Ponzini & Steinman, 2021). Interestingly, however, the Scrupulous vignette (autogenous obsession; Lee & Kwon, 2003) appeared to be equally associated with both SMI and anxiety-related stigma, which requires further exploration.

In addition to stereotypes that are commonly seen for anxiety disorders and SMI, OCD-specific stereotypes also emerged from the data. That is, perceptions of John as a social oddity, a nuisance, and withdrawn from others were seen across symptom subtypes. Likewise, the Scrupulous vignette was associated with zealot-like attributes, which to the author's knowledge, has yet to be associated with other psychological disorders with regards to stigma. Importantly, these stereotypes are not measured by previously established stigma assessments and indicate that OCD may also be associated with stereotype content that differs from other disorders.

Of note, while all OCD subtypes were associated with some stereotypes more than others, the Sexual vignette was only strongly associated with two stereotype themes. Unlike for other vignettes, there was significant heterogeneity in participants' responses for the Sexual vignette, such that participants endorsed a range of stereotypes (including but not limited to withdrawn, crazy, distracted) with less overlap in their endorsement. It is possible that participants were unsure how they and others should feel about John given the grotesque content of his obsessions (i.e., having sex with his children) and the extreme distress he experienced. Alternatively, social desirability may have affected participants' willingness to strongly endorse concerns about his character. Still, subsequent qualitative assessments regarding stigma towards Sexual OCD can provide greater insight into participants' responses towards this vignette.

In all, findings from the present study outline the range of stereotypes endorsed across OCD symptom subtypes. Encouragingly, the final themes that emerged across subtypes largely mapped onto qualitative codes that were strongly endorsed (75% or greater) by participants in the member check. Thus, the data presented herein provide a valid foundation for subsequent quantitative assessments of stigma related to OCD and its variations across symptom presentations.

## **Study 2 Overview**

### **Enhancing Validity via Methodological Triangulation**

The goal of Study 2 is to corroborate and complement the knowledge gained from Study 1 to guide future research (Morgan & Smircich, 1980) evaluating OCD stigma. By employing a quantitative design, Study 2 provides methodological triangulation, increasing the credibility and completeness of Study 1 findings (Hussein, 2009). While the qualitative methods in Study 1 allow for rich, broad descriptions of stereotypes associated with OCD symptom subtypes, the quantitative methods in Study 2 permit a systematic evaluation of OCD stigma. That is, whereas Study 1 derived meaning from the available data (inductive analysis; Elo & Kyngas, 2007), Study 2 tests and can verify the knowledge gained.

### **Extending the Literature: OCD and Other Psychological Disorders**

In addition to enhancing validity by providing triangulation, Study 2 also extends our current understanding of OCD stigma in relation to other psychological disorders. As previously noted, past research has focused on SMI stigma relating to OCD (e.g., perceived dangerousness, desire for social distance; Ponzini & Steinman, 2021). Yet, anxiety-related stigma (e.g., perceived weakness, laziness; Schofield and Ponzini, 2020) is likely also relevant for certain OCD symptom subtypes due to similar lay perceptions (e.g., reactive obsessions viewed like worry associated with anxiety disorders; Lee & Kwon, 2003; Ponzini & Steinman, 2021). Thus, Study 2 aims to compare stigmatizing beliefs associated with the vignettes depicting OCD symptom subtypes to vignettes for Generalized Anxiety Disorder (GAD) and Schizophrenia. Such an evaluation will expand the current knowledge of the stereotypes endorsed for OCD symptom subtype stereotypes and their relation to stereotypes associated with other psychological disorders.

## Study 2 Aims

Study 2 assessed public stigma for OCD with previously established, psychometrically sound measures associated with SMI stigma and anxiety-related stigma. Additionally, an OCD-specific stigma measure was developed from the themes derived in Study 1 to provide an exploratory assessment of the endorsement of OCD stigma across subtypes and other disorders. Study 2 also evaluated potential moderators of OCD stigma including participants' level of familiarity and previous mental health treatment, as prior research has indicated these affect stigma endorsement (i.e., less stigma for those with more frequent contact or previous mental health treatment; Ponzini & Steinman, 2021).

Accordingly, participants in Study 2 were randomized to read one of seven vignettes (OCD symptom subtypes, Schizophrenia, or GAD) prior to responding to a series of stigma assessments. All hypotheses and methods were pre-registered with the Open Science Framework prior to data collection and analysis (<https://osf.io/gezkq>). The following *a priori* hypotheses were proposed for Study 2:

1. Harm/Aggression, Sexual, and Scrupulous OCD vignettes (i.e., autogenous obsessions) will have greater endorsement of SMI stigma (i.e., higher scores on the attribution questionnaire; AQ-9) compared to Symmetry/Just Right and Contamination OCD vignettes (i.e., reactive obsessions)
2. Symmetry/Just Right and Contamination OCD vignettes will have greater endorsement of anxiety-related stigma (i.e., higher scores on the generalized anxiety stigma scale; GASS) compared to Harm/Aggression, Sexual, and Scrupulous OCD vignettes.

3. Individuals with greater prior contact with mental illness (i.e., higher scores on the level of contact scale) will endorse less stigma across OCD, Schizophrenia, and GAD vignettes.
4. Individuals with previous mental health treatment (i.e., endorsement of therapy, medication, or combined treatment history) will endorse less stigma across OCD, Schizophrenia, and GAD vignettes.

## Study 2 Methods

### Study 2 Participants

The inclusion and exclusion criteria for Study 2 were the same as for Study 1 (i.e., CloudResearch approved participants, passed “botchas,” aged 18 and older, English proficiency, a HIT approval rate greater than 99%, and a completion of less than 500 HITs). However, individuals who participated in Study 1 were not eligible for participation in Study 2 (excluded via CloudResearch parameters).

A total of 717 participants completed Study 2<sup>10</sup>. Of these participants, eighteen were excluded because their self-reported age was less than 18 years old ( $n = 1$ ), completion time for the study was less than five minutes ( $n = 3$ ), results demonstrated inattention (i.e., ten or more identical responses in a row;  $n = 6$ ), or they failed to pass the attention check question (i.e., identify the assigned condition;  $n = 9$ )<sup>11</sup>. Accordingly, the final sample consisted of 698 participants.

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<sup>10</sup> Effect sizes available for OCD symptom subtypes across stigma measures range from small to large (Ponzini & Steinman, 2021). Using G\*Power (Faul et al., 2007), an appropriate sample size of 605 participants was estimated to find a small effect with 90% power and a standard alpha of .05. To account for outliers and/or problematic data, we planned to recruit a sample of 700 total participants.

<sup>11</sup> The attention check question was added to the survey after the submission of the OSF preregistration. Due to this, exclusion based on failing to pass this attention check question is not listed in the preregistration.

Of these 698 participants, individuals were randomly assigned to read the Symmetry/Just Right ( $n = 102$ ), Contamination ( $n = 112$ ), Sexual ( $n = 104$ ), Harm/Aggression ( $n = 94$ ), Scrupulous ( $n = 92$ ), GAD ( $n = 101$ ), or Schizophrenia ( $n = 93$ ) vignettes. Participants were majority female (62.8%); however, all gender identities were represented: 34% male, 1.4% nonbinary, 0.60% transgender, 0.40% not listed (i.e., agender). Participant ages ranged from 18 – 70 years old ( $M = 34.46$ ,  $SD = 10.35$ ) and they held, on average, slightly less than a Bachelor's degree in terms of education ( $M = 15.39$ ,  $SD = 2.56$ ; range from 9 – 25 years). Self-reported racial identities were as follows: 71.5% White, 12.6% Black or African American, 6.6% Asian, 0.60% Middle Eastern/North African (non-White), 0.40% Native Hawaiian or Pacific Islander, and 0.30% American Indian. Additionally, 5.4% of racial identities were not reported, and 2.6% of participants preferred not to answer. A total of 12% of the sample reported Hispanic or Latinx ethnicity<sup>12</sup>.

Over half (55%) of the sample indicated past treatment seeking (i.e., medication,  $n = 41$ ; therapy,  $n = 108$ ; or combination treatment  $n = 235$ ). Further, over a third of participants (37.8%) indicated a previous diagnosis of a mental illness; self-reported diagnoses included a depressive disorder ( $n = 132$ ), any anxiety disorder ( $n = 126$ ), bipolar disorder ( $n = 27$ ), post-traumatic stress disorder ( $n = 22$ ), attention deficit and hyperactivity disorder ( $n = 21$ ), OCD ( $n = 17$ ), a personality disorder ( $n = 6$ ), a schizophrenia-related disorder (e.g., schizoaffective, psychosis;  $n = 5$ ), a substance use disorder ( $n = 5$ ), an autism spectrum disorder ( $n = 2$ ), and/or an eating disorder ( $n = 2$ ). A number of participants ( $n = 97$ ) endorsed two or more comorbid diagnoses. See Table 4 for demographic characteristics across vignette conditions.

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<sup>12</sup> Data were collected in three batches (Batch 1:  $n = 300$ ; Batch 2:  $n = 150$ ; Batch 3:  $n = 250$ ) and demographic data were reviewed after each batch to determine whether subsequent batches required stratification. Given the heterogeneity of participant demographic characteristics present following each batch, stratification of recruitment based on age and education (as in Study 1) was not necessary (as deemed by GP and SS).



## Study 2 Vignettes

Vignettes depicting OCD symptom subtypes were the same as Study 1. For the GAD and Schizophrenia conditions, vignettes were developed to match OCD vignettes with regards to the text structure (i.e., roughly 100 words, 6-7<sup>th</sup> grade reading level, extraneous content kept at a minimum), demonstration of DSM-V diagnostic criteria (APA, 2013), and description of the (“John”) whose symptoms center around his children. For the GAD and Schizophrenia vignettes, six PhD-level clinical psychologists across multiple institutions were involved in vignette refinement (i.e., three respective experts per vignette). Finalized vignettes were approved by all reviewers, with agreement that vignettes depicted accurate presentations of GAD or Schizophrenia. See Appendix D for Schizophrenia and GAD vignettes.

## Study 2 Measures

*Attribution Questionnaire (AQ-9; Corrigan et al., 2003)*. The attribution questionnaire (AQ) is one of the more commonly employed public stigma measures across psychological disorders (Fox et al., 2018). From the initially developed 27-item scale, Corrigan and colleagues (2003) identified nine items (i.e., AQ-9) that most strongly loaded onto each of the measured stereotypes: perceptions of blame, anger, pity, willingness to help, dangerousness, fear, desire for avoidance, segregation, and coercion towards the vignette character. Study 2 utilized the AQ-9 to assess stereotypes that are commonly associated with SMI (e.g., schizophrenia, bipolar disorder).

Participants responded to the nine items on a 1 (*Not at All*) to 9 (*Very Much*) Likert-type scale. All items were summed for a total public stigma score. Higher scores on all indices indicate greater endorsement of the stereotypes. Of note, the AQ-9 has demonstrated acceptable to moderate internal consistency ( $\alpha = .62 - .82$ ), test-retest reliability ( $ICC = .73 - .87$ ), and convergent validity (compared with measures of affirming attitudes towards people with mental

illness, such as empowerment) across various samples (i.e., college students, community members, health care providers, and mental health providers; Corrigan et al., 2014). The AQ-9 demonstrated acceptable internal consistency in the present sample ( $\alpha = .76$ ).

While the items on the AQ were created to follow a character vignette for schizophrenia (i.e., Harry, a 30-year-old man), this measure was utilized following the vignettes developed for this study. Additionally, the character name for AQ items was changed from “Harry” to “John” to match the character presented in the vignettes. Revising measures in this way is commonplace for the public stigma literature (e.g., McCarty et al., 2017; Homonoff & Sciotto, 2019).

*Generalized Anxiety Stigma Scale (GASS; Griffiths et al., 2011)*. The GASS is a 20-item self-report measure assessing stereotypes towards individuals with GAD on personal (self-endorsed, “People with an anxiety disorder are just lazy”) and perceived (endorsed by others, “Most people think that people with an anxiety disorder are just lazy”) subscales. For the purposes of this study, only the personal subscale was utilized and items on the GASS were modified to say, “John is...” rather than “People with an anxiety disorder are...”.

The personal subscale on the GASS consists of 10 items which participants respond to on a 0 (*Strongly Disagree*) to 4 (*Strongly Agree*) Likert-type scale. Scores on the personal subscale of the GASS range from 0 – 40, and higher scores are indicative of greater stigma. The GASS has demonstrated strong internal consistency ( $\alpha = .86 - .91$ ), test-retest reliability (four months post initial assessment;  $r = .55 - .91$ ), and construct validity (Griffiths et al., 2011; Wei et al., 2015). The GASS demonstrated good internal consistency in the present sample ( $\alpha = .83$ ).

*OCD Stigma Measure (OSM)*. The stereotype themes that emerged in Study 1 reflected stereotypes assessed via measures of stigma for SMI (e.g., perceived dangerousness), anxiety disorders (e.g., symptom trivialization), and stereotypes that appear to be uniquely associated

with OCD (e.g., nuisance, odd, withdrawn) and are not captured via other stigma assessments. Accordingly, the author wanted to develop a measure that captures the spectrum of OCD stigma across the symptom subtypes measured in Study 1.

To do so, GP and MS developed three items for each of the fifteen themes that emerged in Study 1. Items were developed using participant language from open-ended responses (e.g., “John is weird.”). Following this, items were reviewed by Dr. Steinman, and three experts in OCD stigma across multiple institutions. Experts recommended the addition of four constructs that had been captured in previous research but did not emerge as themes for Study 1 (i.e., personal weakness, desire for social distance, blame, and shame). They also recommended the addition of items with stigma-heavy words (e.g., crazy, psycho), that may capture SMI-related stigma. Thus, a total of sixty items (20 total themes) were developed for this scale.

Participants in Study 2 responded to the 60 items on a 1 (*Strongly Disagree*) to 5 (*Strongly Agree*) Likert-type scale. Items across positive themes (i.e., Good Parent, Kind, Desire for Social Distance, Capable of Change) were reverse scored, such that greater scores indicated more negative perceptions.

To explore the factorial structure of the OCD stigma items, all 60 items were subjected to an exploratory factor analysis (EFA) with orthogonal rotation (Varimax). All data were assessed for sphericity (Bartlett, 1950; all  $p$ 's < .001) and the Kaiser-Meyer-Olkin measure of sampling adequacy (all KMO values >.94; Kaiser, 1974). Using the scree test (i.e., number of factors is determined by the number above the break point in scree plot; Costello & Osborne, 2005), as well as a review of the variance explained by the number of factors, a three-factor solution appeared to best fit the data. However, after a closer review of the data (among GP, SS, and Dr. Christa Lilly) authors identified that the third factor only had items loading from three themes

(out of twenty) and item and scale reliability analyses indicated improved reliability if at least one of those themes (i.e., religious zealot) were removed. Accordingly, to improve the factorial structure and reliability of the scale, the following themes (and their items) were removed prior to subsequent analyses: *problematic thoughts and behaviors*, *symptoms require treatment*, *capable of change*, and *religious zealot*. Further, these items (apart from *religious zealot*) focused on beliefs about symptoms and treatment rather than stereotypes related to the character himself. Thus, there was both theoretical and data-driven support for removal of these items.

The remaining 48 items were then re-subjected to an EFA with Varimax rotation. The Kaiser-Meyer-Olkin measure indicated sampling adequacy for the analysis,  $KMO = .95$ . Bartlett's test of sphericity indicated that an uncorrelated structure is appropriate,  $(1128) = 21788.25, p < .001$ . The maximum likelihood factor yielded a two-factor solution as the best fit for the data, accounting for 41.43% of the variance. Of the 48 items, only two did not meet the .32 cutoff for either factor; these items were discarded.

To encourage the future use of this measure and limit participant burden, the authors were interested in reducing the number of items used in the final scale<sup>13</sup>. Accordingly, items with highest loadings for each included theme were identified<sup>14</sup>. The final measure consisted of 16 items with no strong cross-loadings (.50 or above; Costello & Osborne, 2005) and individual loadings at .32 or above for each factor (Tabachnick & Fidell, 2001). See Table 5 for the final list of items and their factor loadings.

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<sup>13</sup> We acknowledge that prior research suggests that item reduction for measures should focus on maintaining the content validity of items rather than the minimization of participant burden (Rolstad et al., 2011). Still, given that all items were developed using participant language from Study 1, items were approved by experts in the field of OCD stigma, and each theme from Study 1 was associated with three synonymous items in the initial scale, the authors determined there was sufficient content validity to proceed with item reduction.

<sup>14</sup> Prior stigma research has also used this method to identify items for a shortened scale (Corrigan et al., 2003).

The scoring for the OCD stigma measure is based on these final 16 items. In addition to a total OCD stigma score (i.e., sum of all items), items that most strongly loaded onto each factor were independently summed for subscale scores<sup>15</sup>. The SMI subscale is comprised of the ten items that most strongly loaded onto the first factor. These items are associated with common themes associated with SMI stigma (e.g., disturbed, dangerous, insane). Likewise, the anxiety subscale is comprised of the six items that most strongly loaded onto factor two and are commonly associated with anxiety-related stigma (e.g., worry wart, at fault, burdensome). For all scores on the OCD stigma measure (total stigma, SMI, and anxiety), higher scores indicated greater stigma. The OSM Total Scale and the SMI Subscale had strong internal consistencies ( $\alpha = .86$  and  $.83$ , respectively). The internal consistency for the Anxiety subscale was adequate ( $\alpha = .67$ )<sup>16</sup>. See Appendix E for the OSM items and their associated Study 1 themes.

To assess for preliminary convergent and discriminant validity for the OSM measure (<https://osf.io/gezkkq>), we ran a series of bivariate correlations between the OSM Total Scale and the AQ-9 and GASS (convergent) as well as the OCI-12 (discriminant)<sup>17</sup>. As expected, results indicated that stigma as measured by the OSM was positively and significantly correlated with stigma on the AQ-9 ( $r = .67, p < .001$ ) and GASS ( $r = .71, p < .001$ ). Additionally, stigma as measured by the OSM was not significantly associated with OCD symptom severity as measured by the OCI-12 ( $r = .01, p = .85, 95\% \text{ CI } [-.07, .08]$ ).

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<sup>15</sup> Items with cross-loadings above  $.32$  ( $n = 6$ ) were evaluated for inclusion across both subscales and for only the subscale with the highest loading. Given recommendations by our expert biostatistician (Dr. Christa Lilly) to include items on subscales based on their highest loadings and the clarity of the results using subscales with independent items, the decision was made to keep items distinct for each subscale.

<sup>16</sup> The low internal consistency compared to the SMI subscale and OSM total scale is likely due to the low number of items. Item-level reliability analyses revealed that further item reduction would reduce the anxiety subscale alpha. Further, all items are moderately correlated with the full subscale ( $r$ 's  $> .53$ ), suggesting that the appropriateness of all included items.

<sup>17</sup> Previous research (Schofield & Ponzini, 2020) has demonstrated that symptom severity is a distinct construct from public stigma, and thus is an appropriate assessment of discriminant validity.

*Level of Contact Report* (Holmes et al., 1999). To determine participants' familiarity with the psychological disorders presented to them in the vignettes, the level of contact report was used. This checklist was developed to assess familiarity with SMI, with higher scores indicating greater contact and familiarity. Scores range from low levels of contact (e.g., 1 – “I have never observed a person that I was aware had a severe mental illness”) to the most intimate contact (e.g., 12 “I have a severe mental illness.”) Participants' scores on this checklist are based on their *greatest* level of contact; for example, if someone indicates “A friend of the family has a severe mental illness” (score of 9) and “I have watched a documentary on the television about a severe mental illness,” (score of 4), this participant will receive a familiarity score of 9. A panel of schizophrenia experts developed the scale rankings, and there was strong inter-rater reliability (IRR = .83) across rankings for the level of contact (Holmes et al., 1999).

Since the present study was interested in contact as a potential moderator for stigma, the items were modified to replace “SMI” with “symptoms like John.” In this way, participants reported on their contact with the vignette disorder or symptom subtype for which they read.

*Obsessive Compulsive Inventory-12 (OCI-12; Abramovitch et al., 2021)*. To assess for differences in OCD stigma for a symptomatic subgroup, the OCI-12 was utilized. The OCI-12 is a 12-item self-report scale that was developed to address limitations to the OCI-R (e.g., hoarding included as an OCD subtype despite its separation from OCD in the DSM-V; Foa et al., 2002). The OCI-12 captures OCD symptoms experienced across four symptom dimensions (washing, ordering, obsessing, and checking). Participants responded to items on a five-point Likert-type scale from 0 (*Not at all*) to 4 (*Extremely*) to indicate the amount of distress the associated OCD symptoms have caused them in the last month. A total score for the OCI-12 was derived from summing individual items. The recommended cutoff score to identify a likely presence of OCD

is a score of 11 or higher (Abramovitch et al., 2021), and this cutoff was utilized to characterize a symptomatic subgroup within the sample<sup>18</sup>. The OCI-12 is a psychometrically sound measure with good to strong internal consistency ( $\alpha = .71 - .89$ ), test-retest reliability ( $r = .74$ ), convergent and discriminant validity, is norm-referenced, diagnostically sensitive and accurate, and is sensitive to the effects of evidence-based treatments for OCD (Abramovitch et al., 2021). The OCI-12 demonstrated good internal consistency in the present sample ( $\alpha = .88$ ).

## Study 2 Procedures

Following participant consent and successful “botcha” completion, participants were randomly assigned to read one of the seven vignettes (OCD symptom subtypes, GAD, or schizophrenia). Next, participants responded to stigma measures (AQ-9, GASS, OSM) in a randomized order. Given that participants were unable to return to their assigned vignette while responding to stigma measures (due to randomization), participants answered a multiple choice question about the nature of their vignette (“Based on what you have read, which of the following describes our movie character, John”) after these assessments to determine information retention. Then, participants completed the Level of Contact Report, OCI-12, and demographics questions (see Study 1). Lastly, participants were debriefed about the nature of the study and were compensated \$2.50 for their time.

## Study 2 Data Analyses

All analyses were preregistered with the Open Science Framework (<https://osf.io/gezkg>).

Preliminary ANOVA and chi-squared analyses were run to determine if there were significant

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<sup>18</sup> Of our total sample, 326 participants (46.7% of the sample) met the recommended clinical cutoff for the presence of OCD symptoms. To assess whether contamination-related symptoms were heightened (due to the COVID-19 pandemic), subscale scores were calculated across the four symptom dimensions. The washing subscale ( $M = 2.15$ ,  $SD = 2.75$ ), however, was the lowest among the symptom dimensions: checking ( $M = 2.93$ ,  $SD = 2.64$ ), ordering ( $M = 3.76$ ,  $SD = 3.07$ ), and obsessing ( $M = 3.25$ ,  $SD = 3.20$ ). Implications for the number of symptomatic individuals in the present study are reviewed in the discussion section.

differences across conditions in demographic characteristics. Across all related demographics (age, race, gender, education, ethnicity, prior mental health treatment), there were no significant differences across conditions (all  $p$ 's > .11). Missing data were not problematic for this study (i.e., only two participants had any missing data), and thus were not addressed. Further, all data (except for the level of contact measure, see below) were normal in their distributions and there were no univariate outliers.

### Study 2 Results

**SMI Stigma (AQ-9).** A between-subjects ANOVA determined significant differences across vignette conditions (i.e., OCD subtypes, GAD, Schizophrenia) on the AQ-9,  $F(6, 690) = 59.26, p < .001, \eta_p^2 = .34$ . Tukey *post hoc* tests revealed the Sexual and Harm/Aggression vignettes were associated with the greatest SMI stigma. That is, for the Sexual vignette ( $M = 46.03, SD = 11.98$ ) SMI stigma scores were significantly greater than the Symmetry/Just Right ( $M = 31.7, SD = 10.11; p < .001$ ), Contamination ( $M = 29.43, SD = 8.50; p < .001$ ), Scrupulous ( $M = 35.52, SD = 10.92; p < .001$ ), GAD ( $M = 28.92, SD = 8.36; p < .001$ ), and Schizophrenia ( $M = 41.41, SD = 9.80; p = .03$ ) conditions. Likewise, the Harm/Aggression vignette ( $M = 47.54, SD = 11.16$ ) demonstrated significantly greater SMI stigma compared to the Symmetry/Just Right, Contamination, Scrupulous, GAD, and Schizophrenia vignettes (all  $p$ 's < .001). There were no significant differences between the Sexual and Harm/Aggression ( $p = .95$ ) vignettes. The Schizophrenia vignette demonstrated significantly greater SMI stigma scores compared to the Symmetry/Just Right, ( $p < .001$ ) Contamination ( $p < .001$ ), Scrupulous ( $p < .01$ ), and GAD ( $p < .001$ ) vignettes. Lastly, the Scrupulous vignette demonstrated significantly greater SMI stigma scores than the Contamination and GAD vignettes (all  $p$ 's < .001). The Symmetry/Just Right vignette was not significantly different from the Contamination, Scrupulous, or GAD vignettes



(all  $p$ 's > .12). Further, there was no significant difference between the Contamination and GAD vignettes ( $p = 1.0$ ). See Figure 1 for a graph of AQ-9 mean scores and standard errors of the means.

**Anxiety-Related Stigma (GASS).** A between-subjects ANOVA determined significant differences across vignette conditions on the GASS,  $F(6, 689) = 26.13, p < .001, \eta_p^2 = .19$ . Tukey *post hoc* tests revealed the Sexual vignette ( $M = 12.90, SD = 7.73$ ) as associated with the greatest anxiety-related stigma compared to all other vignettes: Symmetry/Just Right ( $M = 6.61, SD = 5.36; p < .001$ ), Contamination ( $M = 5.77, SD = 5.05; p < .001$ ), Harm/Aggression ( $M = 10.62, SD = 5.94, p < .01$ ), Scrupulous ( $M = 10.90, SD = 6.58, p < .01$ ), GAD ( $M = 6.51, SD = 5.26, p < .001$ ), and Schizophrenia ( $M = 10.01, SD = 5.23, p < .001$ ). The Harm/Aggression, Scrupulous, and Schizophrenia vignettes were also all associated with greater anxiety-related stigma than the Symmetry/Just Right, Contamination, and GAD, vignettes (all  $p$ 's < .01). There were no significant differences between Symmetry/Just Right, Contamination, or GAD vignettes (all  $p$ 's > .95). Additionally, there were no significant differences between the Scrupulous, Harm/Aggression, and Schizophrenia vignettes (all  $p$ 's > .95). See Figure 2 for a graph of GASS mean scores and standard errors of the means.

### **OCD Stigma (OSM).**

*Total OSM Scale.* A between-subjects ANOVA determined significant differences across vignette conditions on the Total OSM,  $F(6,689) = 17.16, p < .001, \eta_p^2 = .13$ . Tukey *post hoc* tests revealed the Sexual ( $M = 45.75, SD = 11.56$ ), Harm/Aggression ( $M = 44.47, SD = 9.02$ ), Scrupulous ( $M = 44.01, SD = 10.65$ ), and Schizophrenia ( $M = 44.51, SD = 9.41$ ) vignettes were associated with significantly greater stigma than the Symmetry/Just Right ( $M = 38.72, SD = 9.92$ ), Contamination ( $M = 38.60, SD = 9.74$ ), and GAD ( $M = 35.06, SD = 8.26$ ) vignettes (all

$p$ 's < .01). There were no significant differences between the Sexual, Harm/Aggression, Scrupulous, and Schizophrenia vignettes (all  $p$ 's > .97) or the Symmetry/Just Right, Contamination, and GAD vignettes (all  $p$ 's > .11). See Figure 3A for a graph of OSM Total mean scores and standard errors of the means.

*SMI OSM Subscale.* A between-subjects ANOVA determined significant differences across vignette conditions on the SMI OSM subscale,  $F(6,689) = 41.50, p < .001, \eta_p^2 = .27$ . Tukey *post hoc* tests revealed the Sexual vignette ( $M = 31.10, SD = 8.66$ ) was associated with significantly greater stigma than the Symmetry/Just Right ( $M = 22.63, SD = 6.39$ ), Contamination ( $M = 20.92, SD = 6.31$ ), Scrupulous ( $M = 25.35, SD = 7.71$ ), GAD ( $M = 19.15, SD = 5.60$ ), and Schizophrenia ( $M = 27.04, SD = 8.00$ ) vignettes (all  $p$ 's < .001). Additionally, the Harm/Aggression vignette ( $M = 29.27, SD = 6.98$ ) was associated with greater SMI stigma than the Symmetry/Just Right, Contamination, Scrupulous, and GAD vignettes (all  $p$ 's < .01). The Schizophrenia vignette was also associated with significantly greater stigma than the Symmetry/Just Right, Contamination, and GAD vignettes (all  $p$ 's < .001). Lastly, the Scrupulous vignette was associated with greater SMI stigma than the Contamination and GAD vignettes ( $p$ 's < .001), and the Symmetry/Just Right vignette was associated with greater SMI stigma than the GAD vignette ( $p < .01$ ). There were no significant differences between the Sexual and Harm/Aggression vignettes ( $p = .51$ ), Harm/Aggression and Schizophrenia vignettes ( $p = .30$ ), Scrupulous and Schizophrenia vignettes ( $p = .64$ ), Symmetry/Just Right and Contamination vignettes ( $p = .54$ ), or Contamination and GAD vignettes ( $p = .50$ ). See Figure 3B for a graph of OSM SMI mean scores and standard errors of the means.

*Anxiety OSM Subscale.* A between-subjects ANOVA determined significant differences across vignette conditions on the Anxiety OSM subscale,  $F(6,689) = 11.76, p < .001, \eta_p^2 = .09$ .

Tukey *post hoc* tests revealed the Scrupulous vignette ( $M = 18.66$ ,  $SD = 3.93$ ) was associated with significantly greater stigma than the Symmetry/Just Right ( $M = 16.10$ ,  $SD = 4.44$ ), Sexual ( $M = 14.66$ ,  $SD = 4.35$ ), Harm/Aggression ( $M = 15.21$ ,  $SD = 3.95$ ), and GAD ( $M = 15.91$ ,  $SD = 3.84$ ) vignettes (all  $p$ 's  $< .001$ ). The Contamination vignette ( $M = 17.68$ ,  $SD = 4.33$ ) was also associated with significantly greater stigma than the Sexual, Harm/Aggression, and GAD vignettes (all  $p$ 's  $< .04$ ). Further, the Schizophrenia vignette ( $M = 17.47$ ,  $SD = 4.30$ ) was associated with more stigma than the Sexual and Harm/Aggression vignettes. There were no significant differences between the Contamination and Scrupulous vignettes ( $p = .63$ ) or Scrupulous and Schizophrenia vignettes ( $p = .45$ ). All other relations were not significant (all  $p$ 's  $> .08$ ). See Figure 3C for a graph of OSM Anxiety mean scores standard errors of the means.

### **Moderators.**

*Previous Mental Health Treatment.* To determine whether prior mental health treatment (i.e., any prior treatment versus no prior treatment) impacted stigma across vignette conditions, we ran a series of two way between-subjects ANOVAs. With regards to SMI stigma on the AQ-9, results revealed a significant main effect of vignette condition  $F(6,655) = 56.70$ ,  $p < .001$ ,  $\eta_p^2 = .342$ , as well as a significant main effect of prior mental health treatment  $F(1, 655) = 13.81$ ,  $p < .001$ ,  $\eta_p^2 = .02$  for SMI stigma. The interaction effect was not significant,  $F(6, 655) = 1.23$ ,  $p = .29$ ,  $\eta_p^2 = .01$ . A post-hoc independent samples t-test revealed that individuals without prior mental health treatment ( $M = 38.71$ ,  $SD = 12.70$ ) had significantly greater stigma compared to individuals with prior mental health treatment ( $M = 35.66$ ,  $SD = 12.12$ ),  $t(667) = 3.15$ ,  $p < .01$ . The pattern of results remained unchanged for the effects of condition on SMI stigma.

For anxiety- stigma on the GASS, results also revealed a significant main effect of vignette condition  $F(6,655) = 25.22$ ,  $p < .001$ ,  $\eta_p^2 = .19$ , as well as a significant main effect of

prior mental health treatment  $F(1,655) = 25.01, p < .001, \eta_p^2 = .04$ . The interaction effect was not significant,  $F(6,655) = .93, p = .50, \eta_p^2 = .01$ . A post-hoc independent samples t-test revealed that individuals without prior mental health treatment ( $M = 10.42, SD = 6.40$ ) had significantly greater stigma compared to individuals with prior mental health treatment ( $M = 8.11, SD = 6.44$ ),  $t(667) = 4.60, p < .001$ . The pattern of results remained unchanged for the effects of condition on anxiety-relevant stigma.

Lastly, for the OSM (total score) results indicated a significant main effect of vignette condition  $F(6,655) = 16.83, p < .001, \eta_p^2 = .13$ , as well as a significant main effect of prior mental health treatment  $F(1,655) = 15.34, p < .001, \eta_p^2 = .02$ . The interaction effect was not significant,  $F(6,655) = 1.41, p = .21, \eta_p^2 = .01$ . A post-hoc independent samples t-test revealed that individuals without prior mental health treatment ( $M = 43.18, SD = 10.73$ ) had significantly greater stigma compared to individuals with prior mental health treatment ( $M = 40.17, SD = 10.20$ ),  $t(667) = 3.70, p < .001$ . The pattern of results remained unchanged for the effects of condition on OCD stigma.

*Contact.* To determine whether level of contact (i.e., infrequent versus regular contact) impacted stigma across vignette conditions, we ran a series of two-way between-subjects ANOVAs<sup>19</sup>.

On the AQ-9, there was a significant main effect of condition,  $F(6,682) = 45.44, p < .001, \eta_p^2 = .29$ , and a significant main effect of contact,  $F(1,682) = 6.10, p = .01, \eta_p^2 = .01$ . The

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<sup>19</sup> Descriptive statistics revealed a bimodal distribution for level of contact (LOC). We first tried to split the LOC variable into four quartiles; however, the group sizes were uneven, and the grouping of items did not make sense theoretically (e.g., the second quartile included only one item on watching a documentary about a symptomatic person). Accordingly, we instead split the LOC variable into two equal groups. In addition to appropriate distribution across groups ( $n$ 's = 303 for group 1 and 393 for group 2), there were also important theoretical differences between groups one and two. That is, group one, which consisted of items 1-4 on the LOC, focused on a lack of or infrequent contact with a symptomatic person, whereas group two (items 5-12) centered on more regular to intimate contact with a symptomatic person.

interaction effect was not significant,  $F(6,682) = 1.97, p = .07, \eta_p^2 = .02$ . A post-hoc independent samples t-test revealed that individuals with less frequent contact ( $M = 39.25, SD = 12.34$ ) had significantly greater stigma compared to individuals with more frequent contact ( $M = 34.06, SD = 12.02$ ),  $t(694) = 5.57, p < .001$ . The pattern of results remained unchanged for the effects of condition on SMI stigma.

On the GASS, there was a significant main effect of condition,  $F(6,682) = 20.98, p < .001, \eta_p^2 = .16$ , and a significant main effect of contact,  $F(1,682) = 5.70, p = .02, \eta_p^2 = .01$ . The interaction effect was not significant,  $F(6,682) = 1.10, p = .36, \eta_p^2 = .01$ . A post-hoc independent samples t-test revealed that individuals with less frequent contact ( $M = 10.12, SD = 6.38$ ) had significantly greater stigma compared to individuals with more frequent contact ( $M = 7.80, SD = 6.56$ ),  $t(694) = 4.69, p < .001$ . The pattern of results remained unchanged for the effects of condition on anxiety-relevant stigma.

On the OSM (total score), there was a significant main effect of condition,  $F(6,682) = 10.99, p < .001, \eta_p^2 = .09$ , and a significant main effect of contact,  $F(1,682) = 6.90, p = .01, \eta_p^2 = .01$ . The interaction effect was not significant,  $F(6,682) = .58, p = .75, \eta_p^2 = .01$ . A post-hoc independent samples t-test revealed that individuals with less frequent contact ( $M = 43.26, SD = 10.39$ ) had significantly greater stigma compared to individuals with more frequent contact ( $M = 39.14, SD = 10.24$ ),  $t(694) = 5.22, p < .001$ . The pattern of results remained unchanged for the effects of condition on OCD stigma.

**Symptomatic Subgroup.** Symptomatic subgroup analyses were run to determine differences in stigma across vignette conditions for OCD symptomatic individuals (i.e., scores greater than or equal to 11 on the OCI-12). A between-subjects ANOVA determined significant differences across vignette conditions for SMI stigma on the AQ-9,  $F(6,320) = 34.68, p < .001$ ,

$\eta_p^2 = .39$ . The pattern of results remained the same as the full sample, however, the Sexual ( $M = 47.73$ ,  $SD = 10.82$ ) and Harm/Aggression vignettes ( $M = 45.33$ ,  $SD = 10.83$ ) were no longer associated with greater stigma than the Schizophrenia vignette ( $M = 42.09$ ,  $SD = 10.12$ ,  $p$ 's  $> .07$ ). Additionally, the Schizophrenia vignette was no longer associated with greater stigma than the Scrupulous vignette ( $M = 36.85$ ,  $SD = 10.22$ ). All other results were unchanged.

A between-subjects ANOVA determined significant differences across vignette conditions for anxiety-related stigma on the GASS,  $F(6,320) = 13.15$ ,  $p < .001$ ,  $\eta_p^2 = .20$ . The pattern of results remained the same as the full sample, with a few exceptions. Tukey *post hoc* tests revealed the Sexual vignette ( $M = 14.92$ ,  $SD = 8.08$ ) was no longer significantly different from the Scrupulous vignette ( $M = 11.53$ ,  $SD = 7.32$ ,  $p = .14$ ). Additionally, the Harm/Aggression ( $M = 10.63$ ,  $SD = 6.45$ ) and the Schizophrenia ( $M = 10.39$ ,  $SD = 5.56$ ) vignettes were no longer significantly different from the Symmetry/Just Right vignette ( $M = 7.00$ ,  $SD = 5.52$ , all  $p$ 's  $> .07$ ). All other results remained unchanged.

A between-subjects ANOVA determined significant differences across vignette conditions on the OSM (total score),  $F(6,320) = 10.39$ ,  $p < .001$ ,  $\eta_p^2 = .16$ . Tukey *post hoc* tests revealed the Sexual vignette ( $M = 47.41$ ,  $SD = 11.15$ ) was associated with significantly greater OCD stigma *only* compared to the Symmetry/Just Right ( $M = 38.50$ ,  $SD = 9.84$ ), Contamination ( $M = 39.25$ ,  $SD = 7.54$ ), and GAD ( $M = 34.49$ ,  $SD = 7.18$ ; all  $p$ 's  $< .001$ ) vignettes. Additionally, the Harm/Aggression ( $M = 43.79$ ,  $SD = 9.19$ ), Scrupulous ( $M = 44.13$ ,  $SD = 11.20$ ), and Schizophrenia ( $M = 44.52$ ,  $SD = 10.61$ ) vignettes were only associated with greater stigma than the GAD vignette (all  $p$ 's  $< .001$ ). All other relations were no longer significant (all  $p$ 's  $> .05$ ).<sup>20</sup>

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<sup>20</sup> To determine whether there were relations between OCD symptoms and stigmatization across all assessments, a series of bivariate correlations were run. All correlations were not significant (all  $p$ 's  $> .06$ ), indicating OCD symptoms were not associated with stigma.

Additionally, a between-subjects ANOVA determined significant differences across vignette conditions on the OSM SMI subscale,  $F(6,320) = 20.57, p < .001, \eta_p^2 = .28$ . The pattern of results remained the same as the full sample, except the Harm/Aggression vignette ( $M = 28.44, SD = 7.07$ ) was no longer significantly greater than the Scrupulous vignette ( $M = 25.48, SD = 8.29, p = .40$ ).

Lastly a between-subjects ANOVA determined significant differences across vignette conditions on the OSM anxiety subscale,  $F(6,320) = 4.80, p < .001, \eta_p^2 = .08$ . The pattern of results remained the same as the full sample, except the Scrupulous vignette ( $M = 18.65, SD = 4.04$ ) was no longer significantly greater than the Sexual vignette ( $M = 16.16, SD = 4.44, p = .07$ ). Additionally, the Contamination vignette ( $M = 18.37, SD = 3.34$ ) was no longer significantly greater than the Sexual vignette ( $p = .11$ ). Finally, the Schizophrenia vignette ( $M = 17.61, SD = 5.00$ ) was no longer significantly greater than the Harm ( $M = 15.35, SD = 4.10$ ) or Sexual vignettes ( $p$ 's  $> .12$ ).

## Discussion

### Study 2 Discussion

Findings from Study 2 provide insight into the endorsement of stereotypical beliefs for OCD symptom subtypes, GAD, and Schizophrenia. Across measures assessing SMI stigma (AQ-9 and SMI subscale of OSM), the Sexual and Harm/Aggression vignettes appeared to be associated with the greatest stigma compared to all other vignettes. However, for measures assessing anxiety-related stigma (GASS and anxiety subscale of OSM), results were variable. That is, on the GASS, the Sexual vignette was most strongly associated with anxiety-related stigma compared to all other vignettes, whereas on the anxiety subscale of the OSM, the Scrupulous vignette was associated with the most stigma. Additionally, on the OSM total scale,

the Sexual, Harm/Aggression, Scrupulous, *and* Schizophrenia vignettes were equally stigmatized and associated with greater stigma than the Contamination, Symmetry/Just Right, and GAD vignettes. Together, findings represent complexities in stigma endorsement across OCD symptoms subtypes and other disorders<sup>21</sup>.

*Stigma Relations among OCD Subtypes.* In line with hypotheses, the Sexual and Harm/Aggression vignettes were associated with greater SMI stigma than the Contamination and Symmetry/Just Right vignettes. These findings further support the relations between autogenous obsessions and their perceived association with SMI-related beliefs (e.g., perceived dangerousness, desire for social distance; Brakoulias et al. 2013). Moreover, this finding is consistent with a recent systematic review on OCD subtypes and public stigma (Ponzini & Steinman, 2021), which found that Sexual and Harm/Aggression subtypes were reliably associated with increased desire for social distance and Harm/Aggression with perceived dangerousness.

Contrary to hypotheses, the Symmetry/Just Right and Contamination vignettes were *not* associated with greater anxiety-relevant stigma compared to the Sexual, Harm/Aggression, and Scrupulous vignettes. Although the Contamination vignette demonstrated greater anxiety-relevant stigma than the Sexual and Harm/Aggression vignettes on the anxiety subscale of the OSM, the Contamination and Symmetry/Just Right vignettes were associated with less stigma on the GASS. While these findings may point to discrepancies in the specificity of anxiety-related stigma, it may also highlight problems with measurement.

Specifically, the GASS was developed based on a thematic analysis of website text about anxiety-relevant stigma, which were written by mental health stakeholders (e.g., practitioners,

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<sup>21</sup> While the OSM stigma measure requires further evaluation to confirm its psychometric properties, the initial data are promising, and suggest that interpretation of results is appropriate.



individuals with lived experience) rather than members of the general public (Griffiths et al., 2011). Accordingly, it is possible that items on the GASS do not accurately represent public perceptions of anxiety disorders. Moreover, although the GASS shared several stereotypes (e.g., blame, perceived dangerousness, instability, symptom trivialization, shame, incompetence, and weakness) with the OSM, a greater number of these shared stereotypes loaded on to the SMI subscale compared with the anxiety subscale (five versus two, respectively). Whereas the items of the anxiety subscale of the OSM focus on stereotypes previously noted for anxiety disorders (e.g., trivialization, responsibility for symptoms; Schofield & Ponzini, 2020) and stereotypes associated with OCD in Study 1 (e.g., social withdrawal), the GASS includes stereotypes frequently associated with SMI (e.g., instability, dangerousness, incompetence; Sheehan et al., 2017). As such, it is unsurprising that results on the GASS were more aligned with those on the OSM SMI subscale than the anxiety subscale.

Additionally, the Scrupulous vignette only partially aligned with hypotheses (i.e., greater SMI stigma). That is, while the Scrupulous vignette was associated with more SMI stigma than the Contamination vignette on the SMI OSM subscale, it was also associated with the most anxiety-related stigma on the anxiety OSM subscale. One potential explanation for the shared stereotypes related to SMI and anxiety-relevant stigma also involves measurement considerations. Specifically, as noted by Siev and colleagues (2011), when autogenous and reactive obsessions were defined by Lee and colleagues (2003), authors used the revised Obsessional Intrusion Inventory; however, this measure does not include items specific to religious and moral obsessions (e.g., fear of God's wrath). Instead, items focus on sexual and harm/aggression obsessions; the "taboo" nature of these obsessions were extended to religious and moral obsessions, thus considering Scrupulous OCD an autogenous obsession. Interestingly,

however, when Siev and colleagues (2011) evaluated religion-focused obsessions, they found commonalities between Scrupulous OCD and both autogenous *and* reactive obsessions.

Moreover, in Study 1, qualitative data support a shared association of anxiety and SMI-related stigma for the Scrupulous vignette. Taken together, these data may indicate that Scrupulous OCD is not uniquely associated with autogenous or reactive obsessions, but with both groupings of symptom presentations.

*Stigma Relations among OCD subtypes and other disorders.* Relations among Schizophrenia, GAD, and the OCD subtypes were exploratory in nature; yet these evaluations allowed for comparisons between OCD subtypes and other, stigmatized disorders that have been viewed by the public as similar to OCD symptom presentations (i.e., autogenous obsessions and Schizophrenia and reactive obsessions and GAD; Brakoulias et al. 2013; Lee & Kwon, 2003). In all, these comparisons enable an understanding of the relativity of OCD stigma and can shed light on the importance of continued OCD stigma assessment and intervention.

Across most stigma assessments (AQ, GASS, SMI OSM subscale), the Sexual vignette was associated with significantly greater stigma than the Schizophrenia vignette. It is likely that the pedophilia-focused intrusive thoughts presented in the Sexual vignette were deemed as more unacceptable by participants than the delusions and hallucinations presented in the Schizophrenia vignette. Accordingly, future research will need to determine how various presentations of Sexual obsessions (e.g., obsessions surrounding sexual identities, pedophilia, violent sexual images) affect stigmatization towards Sexual OCD to direct stigma reduction interventions. Still, given that Schizophrenia is often regarded as a highly stigmatized disorder and Sexual OCD was often associated with greater stigma in Study 2, these data point to a need for an increased focus on stigma reduction for Sexual OCD.

In general, the GAD vignette did not significantly differ from the Symmetry/Just Right and Contamination vignettes across most stigma measures (AQ, GASS, OSM total). However, the GAD vignette was associated with less SMI stigma compared with the Symmetry/Just Right vignette on the SMI OSM subscale and less anxiety-relevant stigma compared with the Contamination vignette on the anxiety OSM subscale. Likely, this is due to the overall low levels of stigma associated with GAD and the specificity of some stereotypes assessed on the OSM for OCD that may not be as relevant for GAD. Still, the closeness in stigma scores across GAD, Symmetry/Just Right, and Contamination vignettes supports the perceived similarities between reactive obsessions and the worry associated with GAD (Lee & Kwon, 2003), and the associated anxiety-relevant stigma associated with these symptom presentations.

*Moderators of Mental Health Treatment and Contact.* Consistent with hypotheses, prior mental health treatment was associated with less stigma across all assessments. This finding supports prior research demonstrating decreased stigma for Harm/Aggression OCD in adolescents with any prior treatment experience compared to those who had never received services (García-Soriano & Roncero, 2017). Although most studies focus on how stigma *reduces* treatment seeking behaviors (Sickel et al., 2014), future research might consider the ways harnessing past treatment experience can be used as a stigma reduction technique. It is possible that prior treatment experience enhances the perceived treatability of mental illnesses, normalizes distress and/or symptoms, or increases empathy towards individuals with psychological disorders. Relatedly (and consistent with hypotheses), Study 2 found that more frequent contact with the symptoms presented across vignettes was associated with less stigma for all assessments. These findings highlight the importance of contact as an important stigma reduction tool across psychological disorders and symptom presentations.

*Symptomatic Subgroup Considerations.* With regards to symptomatic subgroup analyses, results demonstrated similar patterns to the full sample; however, differences between the Sexual, Harm/Aggression, Scrupulous, and Schizophrenia vignettes were no longer significant across the AQ-9, GASS, and OSM total scale. Further, significant differences between the Scrupulous and Harm/Aggression vignettes were no longer significant on the OSM SMI subscale, and on the OSM anxiety subscale, the Sexual vignette was no longer significantly different from the Scrupulous, Contamination, or Schizophrenia vignettes. Seeing that all analyses were appropriately powered, symptomatic individuals appeared to stigmatize autogenous obsessions with more equal intensities compared with the full sample. Still, correlations between OCD symptom severity and stigma endorsement were non-significant across measures, suggesting that overall, OCD symptoms were not associated with stigma in the present study.

Importantly, however, the rate of individuals who were symptomatic for OCD was significantly higher in the present sample (46.7%) than in the general public (twelve month prevalence, 1.2%; lifetime prevalence, 2.3%; Ruscio et al., 2010). Yet, the high prevalence rates of OCD symptoms in mTurk workers do not appear to be unique to this study. For example, Arditte and colleagues (2016) found that OCD symptoms were reported at nineteen times the twelve-month prevalence rate of OCD in their mTurk sample. Additionally, the COVID-19 pandemic has meaningfully impacted OCD symptoms; a recent systematic review found that OCD symptoms significantly worsened across symptom presentations in both the general public and clinical samples since the start of the pandemic, and especially during spikes in cases (Guzick et al., 2021). The data from Study 2 were collected during a period of the highest daily recorded rates of COVID-19 cases in the United States (late January – early February 2022;

CDC COVID Data Tracker, 2022). As such, it is unsurprising that symptoms of OCD were also heightened.

*OCD Stigma Measure Considerations.* The OSM measure developed from Study 1 themes appeared to share some stereotypes with previously developed anxiety-relevant (GASS) and SMI stigma measures (AQ-9). Themes such as blame, perceived dangerousness, and mental instability (e.g., “crazy”) were shared among all measures. Additionally, stereotypes including symptom trivialization, shame, incompetence, and weakness were shared among the GASS and the OSM, while a desire for social distance was shared between the AQ and OSM. The OSM also introduced unique stereotypes including perceptions of social withdrawal and isolation, seeming odd and disturbed, being a nuisance to others, uncaring, and an inadequate, overprotective parent.

While Study 2 did not utilize item-level analyses to determine whether the OCD-specific stereotypes that emerged in Study 1 were uniquely related to OCD subtypes in Study 2, the OSM as a whole did not appear to exclusively capture stigma related to OCD subtypes. For example, the Schizophrenia vignette was equivalent to the Sexual, Harm/Aggression, and Scrupulous vignettes, and the GAD vignette was equivalent to the Symmetry/Just Right and Contamination vignettes on the total OSM. These findings and the overlapping themes across measures may suggest that OCD stigma is largely made up of SMI and anxiety-relevant stereotypes.

Additionally, the number of items for SMI stigma compared with anxiety-relevant stigma (10 versus 6, respectively) on the OSM may indicate the measure as a whole is better suited to capture stigma associated with SMI. The greater levels of stigma associated with the Sexual, Harm/Aggression and Scrupulous vignettes compared with the Contamination and Symmetry/Just Right vignettes on the OSM total scale provide evidence for this. As such, use of

this measure to assess reactive obsessions and related, anxiety-relevant stereotypes may require the use of individual subscales rather than the total OSM scale.

Still, the findings from Study 2 call into question the need for the OSM above and beyond other, previously established stigma measures. The strengths of the OSM include the development of items from qualitative data, the review of the measure by OCD stigma experts, and the inclusion of SMI, anxiety, and OCD-related stereotypes in a single assessment. It remains unclear, however, whether the OSM enhances our ability to capture the endorsement of stigma related to OCD compared with other assessments. If the OSM were able to uniquely predict discriminatory behaviors towards individuals with OCD, then the measure would be an important addition to the literature. Accordingly, this would be an important direction for future research.

## **General Discussion**

The studies presented herein demonstrate the complexities of stigma as it relates to OCD subtypes and other disorders, as well as the utility of mixed-methods approaches to stigma assessment. In some ways, the stigmatization of OCD symptom subtypes follows the autogenous and reactive groupings; Sexual and Harm/Aggression OCD faced greater SMI-related stigma for both qualitative and quantitative assessments than Symmetry/Just Right and Contamination OCD. Yet, the relation between anxiety-relevant stigma and reactive obsessions that was pronounced in the qualitative studies was only partially supported in the quantitative assessment (i.e., via increased stigmatization of the Contamination vignette on the OSM anxiety subscale). While this may reflect measurement challenges, it may also suggest that stereotypes relevant for anxiety disorders and reactive OCD subtypes are also present for SMI and autogenous OCD subtypes.

These mixed-methods studies also demonstrate differences in the endorsement of stereotypes across studies. For example, the Sexual vignette was the most stigmatized across measures in Study 2 but was associated with the *least* number of strongly endorsed stereotypes in Study 1. Although social desirability may have affected participants' willingness to disclose stereotypes in open-ended responses, the range of stereotypes endorsed may also point to an array of stereotypical beliefs associated Sexual OCD. In other words, the Sexual OCD vignette might evoke *many* stereotypical beliefs, which leads to strong endorsement of stigma across quantitative measures and less overlap between participant responses on qualitative questions.

The use of both qualitative and quantitative assessments of stigma provided further insight into the nuances and intensities of the stereotypes related to OCD. Specifically, the qualitative data in Study 1 provided detailed information about the beliefs participants held about OCD subtypes and how stereotypes were endorsed (e.g., positive stereotypes, such as "Good Parent" could be endorsed *if* anxiety were reduced). Then, the quantitative data in Study 2 allowed for a greater understanding about the intensities with which stereotypical beliefs were endorsed. The combined use of qualitative and quantitative assessments of stigma enhanced our understanding of the stereotypes associated with OCD subtypes in ways that the studies on their own would not have individually permitted.

For example, the positive stereotype themes defined in Study 1 (e.g., Good Parent) and their related, negative subthemes (e.g., Good Parent... Except for his Anxiety) suggested that participants' endorsement of positive stereotypes was contingent on symptom concealment. Such nuanced evaluations of stereotypical beliefs would have been difficult to obtain with traditional quantitative assessments. Likewise, a summation of stereotypes to define overall stigma levels

across OCD subtypes, Schizophrenia, and GAD on various measures provided insight into the widespread stigmatization of the Sexual vignette that was not as apparent with Study 1 data.

*Implications and Future Directions.* These mixed-methods studies provide a foundation for understanding the stereotypes endorsed across OCD symptom subtypes and compared with other stigmatized psychological disorders. While data provide support for symptom groupings of autogenous (i.e., Harm/Aggression and Sexual) and reactive obsessions (i.e., Symmetry/Just Right and Contamination) relative to stigma endorsement, both SMI *and* anxiety-relevant stereotypes appear to be associated with autogenous obsessions (particularly for Scrupulous OCD). Lastly, although stereotypes unique to OCD subtypes emerged in Study 1, these stereotypes were also applicable to other disorders (as evidenced by the OSM data in Study 2).

Together, the data from these studies call into question whether evaluating and addressing subtype-specific stereotypes are necessary in the context of stigma reduction for OCD. Given the demonstrated similarities in stereotype endorsement across symptom groupings, interventions may be better suited to focus on macro-level stereotypes (i.e., stereotypes seen *across* similar symptom presentations). For example, interventions could address the most commonly endorsed stereotypes for autogenous obsessions (namely, Sexual and Harm/Aggression subtypes; e.g., perceived dangerousness, mental instability, social outcast, incompetence) and reactive obsessions (e.g., blame, symptom trivialization, and nuisance), as well as the range of stereotypes for Scrupulous OCD (which appears to be strongly associated with both symptom groupings). In focusing on macro-level stereotypes, stigma reduction efforts for OCD can be streamlined, such that the need for multiple, subtype-specific interventions are reduced.



Furthermore, it is evident that stereotype endorsement will depend on many, interdependent contextual factors, including symptoms, sociodemographic characteristics, power/status, culture, etc. (of both the stereotyped and the person who is stereotyping); attempts to understand and address all potentially relevant stereotypes for OCD symptom presentations would likely be futile. Rather, research should aim to identify how to target and adapt interventions based on contextual factors relevant to the specific populations for which stigma reduction is aimed (e.g., community members, providers, family members, symptomatic individuals).

Additionally, psychoeducation about the nature of obsessions and compulsions may be an important consideration for future stigma reduction efforts. While it is understandable that certain obsessions are more concerning due to their illegal and/or repugnant characteristics (e.g., fears of having sex with or stabbing children, as noted in our Sexual and Harm/Aggression vignettes), there may be stigma-reducing benefits to demystifying the similarities across subtypes. That is, future studies may seek to determine the effectiveness of stigma reduction efforts focused on discussions about the immense distress experienced by individuals across OCD symptom subtypes (García-Soriano & Belloch, 2013), the theorized role of values on obsessional content (i.e., core fears often target what people care most about, Huppert & Zlotnick, 2012), the absence of behavioral implications for obsessional thoughts (i.e., most people experience intrusive thoughts and dismiss them as meaningless, while those with OCD interpret such thoughts as meaningful, leading to compulsive behaviors to prevent the feared event from occurring; Abramowitz et al., 2020), and the lack of meaningful differences between the content of obsessional thoughts in treatment (i.e., exposure and response prevention is recommended regardless of obsessional content; Abramowitz, 2006). Encouragingly, previous

research has demonstrated that psychoeducation about OCD subtypes can reduce negative attitudes (e.g., Harm/Aggression OCD, Warman et al., 2015; Sexual OCD, Snethen & Warman, 2018), providing initial support for this stigma reduction strategy with regards to OCD.

Lastly, as demonstrated in Study 2 (and across much prior research; Corrigan et al., 2012; Dalky, 2012; Griffiths et al., 2014), frequency of contact with affected individuals is an important contributor to reduced stigma. In line with effective contact-based interventions, future interventions should aim to create opportunities for individuals with OCD and other members of the community to engage in activities directed at a shared goal, in which neither group has greater power (Corrigan, 2012; Corrigan & Watson, 2005). For example, a local support group for the OCD community (e.g., International OCD Foundation) may team up with the Board of Education to connect parents in a school district (both with and without OCD) to devise a strategy to help reduce underage drinking. While these types of interventions may be less amenable to widespread stigma reduction, their impacts can be powerful (Corrigan & Watson, 2005). In all, we call for the development of stigma reduction interventions that focus on macro-level stereotypes across OCD subtypes, provide psychoeducation about obsessional content, and are targeted based on population context to promote more frequent contact with individuals who have OCD.

*Strengths and Limitations.* The present studies were strengthened by including both qualitative and quantitative methods, which provided triangulation for the data. Additionally, the studies ensured content validity of vignettes and the OSM stigma measure through expert feedback, and the pretesting of all qualitative questions. Lastly, the studies employed rigorous methods (e.g., member checking for Study 1 and random assignment to condition and measure

randomization for Study 2), and all Study 2 methods and analyses were preregistered with OSF. Still, each of the studies had associated limitations.

Arguably the most critical limitation of the present study is the use of highly controlled vignettes. While such vignettes allowed for enhanced internal validity and appropriate comparison between groups, they limit our understanding of stigma to homogenous symptom presentations for a male character whose symptoms revolve around his children. In addition to the probable impact of more heterogeneous symptom presentations on stigma endorsement, stigma is also largely influenced by intersectional identities (e.g., race, gender, ethnicity, age, disability status); these identities can affect the stereotypes endorsed and the associated discrimination experienced by affected individuals (Oexle & Corrigan., 2018). Although the studies presented herein can provide a foundational understanding of the stereotypes associated with OCD, research evaluating the intersectional effects of sociodemographic characteristics, obsessional content, and/or comorbid physical and psychological disorders will provide depth to our understanding of OCD stigma and information to better target stigma for individuals with shared identities.

In addition, Study 1 was limited by the inability to conduct the follow-up study (i.e., member check) through video or telephone due to mTurk restrictions. Such restrictions limited participant feedback to dichotomous and brief, open-ended responses via online surveys. These responses did not allow for probing to gather additional information as to why participants agreed or disagreed with stereotype codes, or to understand how participants developed stereotypical views of the vignette characters. As such, it is plausible that stereotype codes could have been modified or improved for the final coding of qualitative data in ways that may have altered the final themes derived for Study 1. Additionally, although authors took a rigorous

approach to analyzing the qualitative data consistent with the postpositivist framework, the primary author who led the dating coding (GP) had extant knowledge of the stigma literature and common stereotypes for mental illnesses that may have influenced the coding scheme. The authors thus want to acknowledge their own potential biases in coding, which may have unintentionally affected the themes derived for Study 1. Lastly, while authors determined that evaluating the *most* endorsed stereotypes would permit meaningful themes to emerge for each subtype, we may have simultaneously limited our understanding of the themes associated with OCD stigma across subtypes. Future studies may seek to identify alternative ways of condensing large numbers of qualitative codes into themes for stigma-related research.

Further, Study 2 was limited by measurement considerations. For one, the lack of available measurement for OCD stigma led to the development of an assessment based on Study 1 themes. While the measure demonstrated encouraging initial psychometric properties (e.g., adequate to strong internal consistencies, convergent and discriminant validity), the overlap with other stigma assessments for SMI and anxiety-related stigma make its utility questionable; further research would be needed to determine its appropriateness as a mainstay OCD stigma measure (e.g., CFA, ability to predict discriminatory behaviors) are warranted. Furthermore, to ensure appropriate psychometrics, specific themes associated with OCD subtypes (e.g., religious zealot for Scrupulous OCD) were removed from the final measure. Accordingly, the measure may not be the best for assessing subtype-specific stigma and may instead capture stereotypes shared among OCD symptom presentations more broadly. Lastly, the GASS may not have been the most appropriate anxiety-stigma assessment (due to its overlapping content with SMI stereotypes), thus limiting our understanding of anxiety-relevant stigma across OCD subtypes, Schizophrenia, and GAD.

Overall, a limitation for the use of mTurk studies is that individuals endorse substantially more clinical symptoms than traditional, non-clinical samples (Arditte et al., 2016). In Study 2, this was especially apparent given the overly symptomatic sample, which demonstrated OCD symptoms at almost thirty times the twelve-month prevalence rate of OCD (Ruscio et al., 2010). Moreover, research has found that mTurk users are more highly educated and younger compared with probability samples (Ogletree & Katz, 2021). Although age and education were stratified for Study 1 recruitment, across studies, participant ages were slightly lower and education levels slightly higher than the national average (US Census Bureau, 2022). Encouragingly, however, the race and gender diversity of participants appeared to be reflective of the general population in the United States. While these data are consistent with the demographics commonly reported from mTurk samples (Michel et al., 2017), caution is warranted when considering the generalizability of these findings to the larger U.S. population or international samples.

## **Conclusions**

These mixed-methods studies provide a framework for understanding the stereotypes endorsed across OCD symptom subtypes and compared with other stigmatized psychological disorders. Study 1 provided initial evidence for the appropriateness of symptom groupings of autogenous (i.e., Harm/Aggression and Sexual) and reactive obsessions (i.e., Symmetry/Just Right and Contamination) relative to the stereotypes endorsed (i.e., SMI and anxiety-related stereotypes, respectively). These data also showed Scrupulous OCD as strongly associated with both symptom groupings and their associated stereotypes. Study 2 supported these findings through demonstrated similarities in the intensity of stereotype endorsement across autogenous and reactive symptom groupings and Schizophrenia and GAD, respectively (with Scrupulous OCD again demonstrating similar endorsement across groups). Additionally, while Study 1

defined stereotypes specific to OCD subtypes (e.g., odd, nuisance, withdrawn), Study 2 findings indicated that such stereotypes were also associated with Schizophrenia and GAD.

In all, it is recommended that future stigma reduction interventions focus on macro-level stereotypes (i.e., stereotypes that exist *across* symptom groupings, such as perceptions of blame or a social outcast). Moreover, such interventions should include psychoeducation about obsessional content and be targeted to address contextual factors (e.g., sociodemographic characteristics, cultural considerations, symptom presentations) relevant to the population of interest to allow for frequent contact. It is the hope that the development of such interventions may allow for enhanced public stigma reduction for OCD.

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Table 1  
*Demographics for Study 1 Across Conditions*

Condition	<i>N</i>	Gender Identity <i>n</i> (% Male)	Race <i>n</i> (% White)	Age <i>M</i> ( <i>SD</i> )	Education <i>M</i> ( <i>SD</i> )	Prior Treatment <i>n</i> (% any treatment)
Symmetry/Just Right	10	6 (60%)	5 (50%)	34.33 (14.20)	13.78 (1.64)	6 (60%)
Contamination	16	11 (69%)	13 (81%)	39.25 (17.74)	16.31 (2.12)	8 (50%)
Sexual	11	5 (45%)	8 (73%)	35.09 (12.19)	15.55 (1.86)	2 (18%)
Harm/Aggression	13	7 (54%)	9 (69%)	38.69 (15.11)	15.92 (2.63)	6 (46%)
Scrupulous	10	7 (70%)	7 (70%)	35.70 (16.37)	15.10 (2.28)	8 (80%)

*Note.* Percentages rounded to nearest whole number. Reported percentages are based on participant majorities.

*Table 2*  
Results from Member Check

OCD Symptom Subtype	Codes from Member Check	Percent Agreement	Participant Responses (Disagreement and Added Labels)
<b>Symmetry/Just Right</b> ( <i>n</i> = 4)	Perception of a Problem, Trivial Symptoms, Symptoms Require Treatment, Nice, Obsessive, Nuisance, Withdrawn, Good Person, Symptoms Improve with Treatment, Good Parent	100%	
	Detail-oriented, Odd	75%	“OCD”
	Incompetent,	25%	“Sometimes [his symptoms] interfere with certain duties”
	Control Freak,		“Mentally ill”
	Normal,		“Odd”
	Crazy,		“Mental disorder”
	Symptom Permanence		“Improve with professional help”
Unfit Parent		0% “Overprotective”	
			<i>Additional words to describe John:</i> “Neurotic,” “Emotionally distant,” “Distractable,” “Mentally ill,” “Anxious”
<b>Contamination</b> ( <i>n</i> = 8)	Good Person, Trivial Symptoms, Germaphobe, Symptoms Require Treatment, Odd,	100%	

Symptoms Improve with Treatment, Tidy, Nice		
Obsessive	87.5%	“Obsesses over dirt and germs”
Perception of a Problem, Nuisance, Rigid	75%	“Anxiety issues” “Quirky but okay” “Unstable”
Worry Wart, Withdrawn, Incompetent	62.5%	“Mental problem” “Can be in his own world sometimes” “Requires more time because he is distracted”
Dangerous, Detail Oriented,		“Not dangerous” “Germaphobia prevents him from paying close attention to detail”
Good Parent	50%	“Has trouble developing/keeping relationships with his kids”
Crazy		“Has a mental problem”
Unfit Parent	37.5%	“Might not always be the best example for his kids”
Good Employee		“Can’t perform his job duties”
Symptom Permanence	25%	“He will be like this forever unless he gets treatment”

	Normal	12.5%	<p>“Damaged person with abnormal problems”</p> <p><i>Additional words to describe John:</i>                      “Troubled,” “Helpless,” “Weird,”                      “Unstable,” “Cautious”</p>
<b>Sexual</b> (n = 3)	Perception of a Problem, Symptoms Require Treatment, Distracted, Symptoms Improve with Treatment	100%	
	Withdrawn,	67%	“Anxious and worried”
	Odd,		“Neurotic”
	Good Person,		“Perverted”
	Incompetent,		“Capable but distracted”
	Criminal,		“Will not do anything illegal because he’s too anxious to act on it.”
	Unfit Parent		“He’s doing his best”
	Nice	33%	“Sicko and gross”
	Good Employee		“Struggling with something that is affecting his work”
	Rigid		“Too tightly wound”
Symptom Permanence		“He might get things under control after getting help”	
Good Parent		“Risk/threat to his kids”	
Crazy		“Just needs help”	
Trivial Symptoms	0%	<p>“He has a right to be anxious”</p> <p><i>Additional words to describe John:</i>                      “Sicko,” “Perverted,” “OCD”</p>	



<b>Harm/Aggression</b> (n = 4)	Obsessive, Perception of a Problem, Symptoms Require Treatment, Criminal	100%	
	Distracted,	75%	“Not only distracted but obsessed”
	Symptom Permanence,		“Needs help for his anxiety”
	Withdrawn,		“Withdrawn and distant due to his mental health issue”
	Violent,		“I don’t think he’d become violent. But there’s an edge to him that makes him uncomfortable”
	Crazy,		“He has many mental issues that need to be sorted out”
	Unfit Parent,		“Anxiety gets the best of him around his kids”
	Odd		“Very serious issues that can’t be described as odd or quirky”
	Nice,	50%	“Appears nice but violent thoughts control his mind”
	Good Parent,		“Is a threat to his kids”
	Good Person		“Dangerous”
	Good Employee,	25%	“Distracted employee”
	Rigid,		“Stressed if things are not in order”
Normal		“Good guy with an edge”	
			<i>Additional words to describe John:</i> “Mentally unstable,” “Severe mental issues”

<b>Scrupulous</b> <i>(n = 4)</i>	Nice, Rigid, Withdrawn, Perception of a Problem, Obsessive, Good Person, Distracted, Trivial Symptoms	100%	
	Crazy, Symptoms Require Treatment, Odd	75%	“Very religious” N/A “Normal human”
	Good Employee, Unpredictable, Incompetent, Symptoms Improve with Treatment, Symptom Permanence,	50%	“Relationship issues with coworkers” “Extremely predictable – the Bible keeps everything in orbit” “Anxiety probably gets in the way of his responsibilities” “Therapy is no guarantee” “God is full of mercy and forgiveness”
	Good Parent, Good Friend, Normal	25%	“His obsession gets in the way of good parenting” “His anxiety gets in the way of his friendships” “So twisted, I’m not sure there’s even a way for him to unravel”
			<i>Additional words to describe John:</i> “Disturbed,” “Brainwashed,” “Inferior,” “Shy,” “Twisted”

Table 3

*Brief Stereotypical Depictions of OCD Subtypes Using Participant Descriptions*

<b>OCD Symptom Subtype</b>	<b>Participant Description</b>
Symmetry/Just Right	John is worry-wart who has problems and needs to seek help. He is awkward and can be annoying to others. Although John is generally polite and kind, he can easily become distressed, which is when you will notice his issues.
Contamination	John has problems and needs to seek help. He is a germaphobe and a worry-wart, who is unproductive at his work due to his compulsive handwashing. John is quiet and socially awkward. Although he is a good parent who cares about his children's safety, he can be overprotective, and his anxiety can get in the way of his parenting.
Sexual	John is a problematic, disturbed person who is a threat to society. He is a social outcast, and someone who you would easily identify as being different from others.
Harm/Aggression	John has serious problems and needs to seek help. He is socially isolated and withdrawn in his interactions with others. John is unstable, and he could act on his violent impulses if triggered. He is unable to manage his anxiety, which makes him concerned with trivial things, like cooking. Although he appears nice on the outside, there is something much darker about his true persona. Still, if John can seek the appropriate help, he can avoid doing harm to himself and others.
Scrupulous	John has problems and needs to seek help. He is a worry-wart who is overly preoccupied with his religion. In general, he is introverted and shy. John is unproductive at work due to his intrusive thoughts about God and his rigid religiosity.

Table 4  
*Demographics for Study 2 Across Conditions*

Condition	<i>N</i>	Gender Identity <i>n</i> (% Female)	Race <i>n</i> (% White)	Age <i>M</i> ( <i>SD</i> )	Education <i>M</i> ( <i>SD</i> )	Prior Treatment <i>n</i> (% any treatment)
Symmetry/Just Right	102	61 (60%)	78 (76%)	35.29 (12.21)	15.47 (2.65)	57 (56%)
Contamination	112	76 (68%)	86 (77%)	34.87 (9.28)	15.63 (2.72)	58 (52%)
Sexual	104	58 (56%)	73 (70%)	32.10 (8.90)	15.28 (2.49)	57 (55%)
Harm/Aggression	94	51 (54%)	70 (74%)	35.72 (10.96)	15.71 (2.25)	56 (60%)
Scrupulous	92	62 (67%)	59 (64%)	35.55 (10.68)	15.14 (2.63)	58 (59%)
GAD	101	65 (64%)	68 (67%)	34.01 (10.26)	15.35 (2.56)	60 (60%)
Schizophrenia	93	65 (70%)	65 (70%)	33.82 (9.77)	15.13 (2.60)	55 (59%)

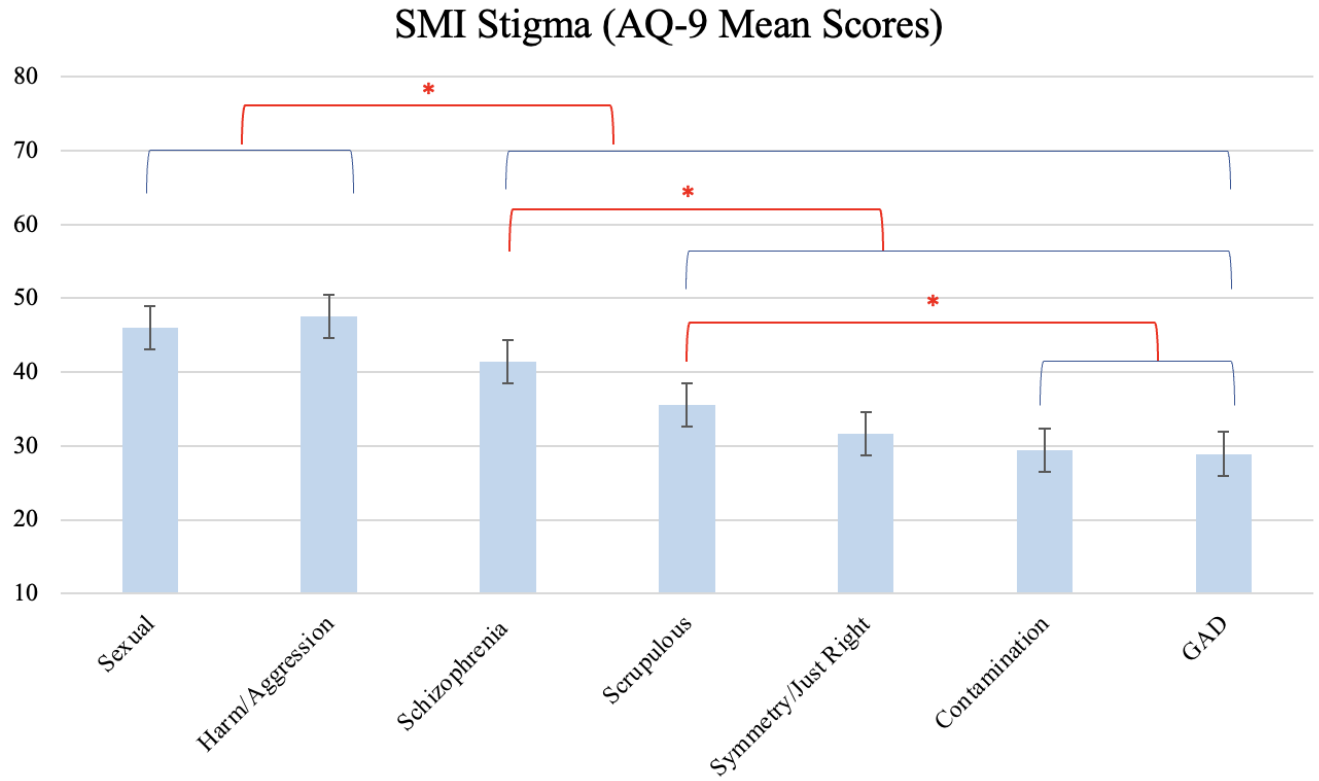
*Note.* Percentages rounded to nearest whole number. Reported percentages are based on participant majorities.

*Table 5*  
OSM Factor Loadings, N = 698

Items	SMI Subscale Loadings	Anxiety Subscale Loadings
John is not a capable employee	<b>0.489</b>	0.371
John does not have many close relationships	0.145	<b>0.396</b>
John is at fault for his problems	0.369	<b>0.465</b>
John is introverted	0.146	<b>0.387</b>
John is a good parent*	<b>0.571</b>	0.039
John is strange	<b>0.615</b>	0.471
John should be embarrassed about his issues	<b>0.616</b>	0.251
John is not safe to be around	<b>0.869</b>	0.049
John is a worry wart	-0.129	<b>0.634</b>
John is someone I would want my kids around*	<b>0.636</b>	0.01
John is a disturbed person	<b>0.705</b>	0.299
John is insane	<b>0.778</b>	0.326
John is annoying to be around	0.42	<b>0.585</b>
John is caring*	<b>0.511</b>	-0.122
John is overprotective of his children	-0.264	<b>0.576</b>
John is pathetic	<b>0.566</b>	0.412

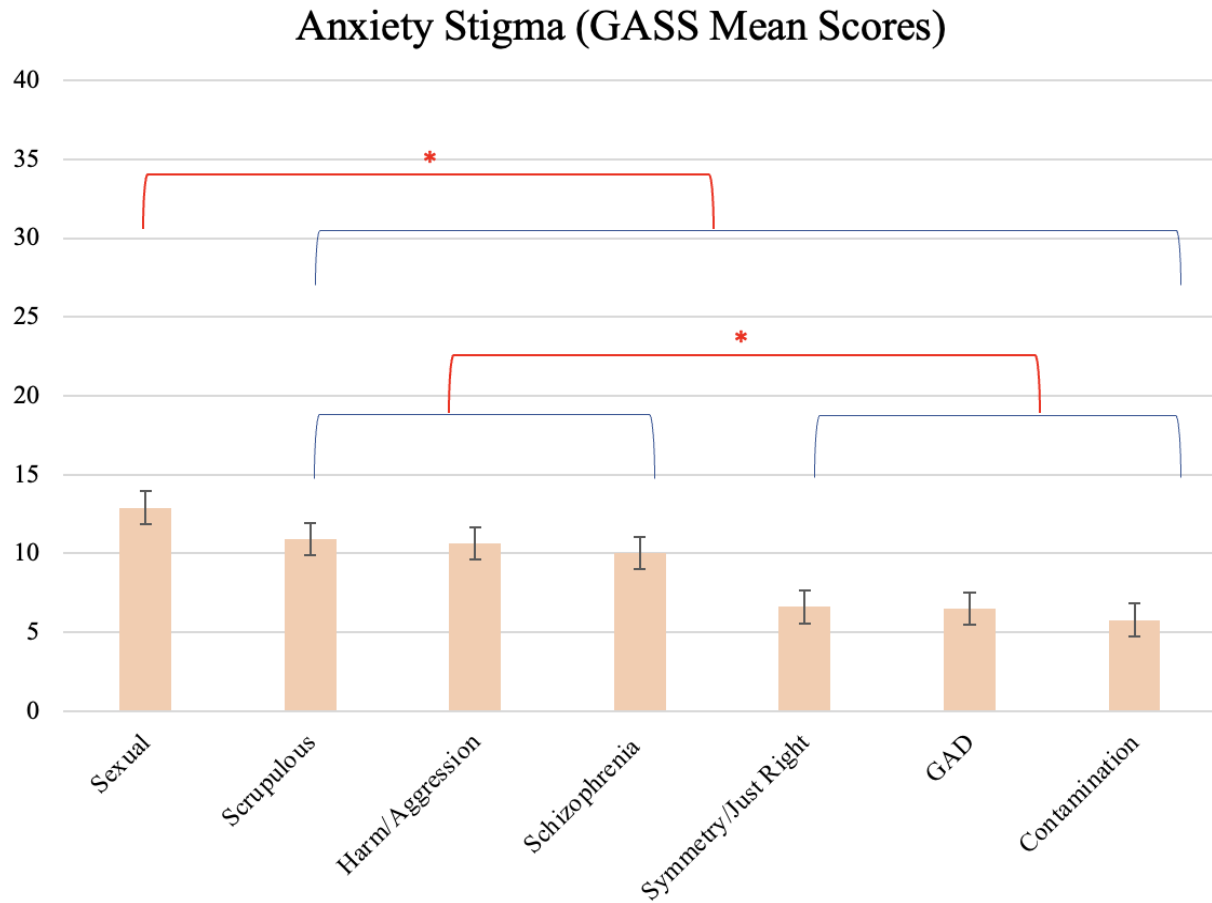
*Note.* (\*) indicate reverse scored item

Figure 1. SMI Stigma



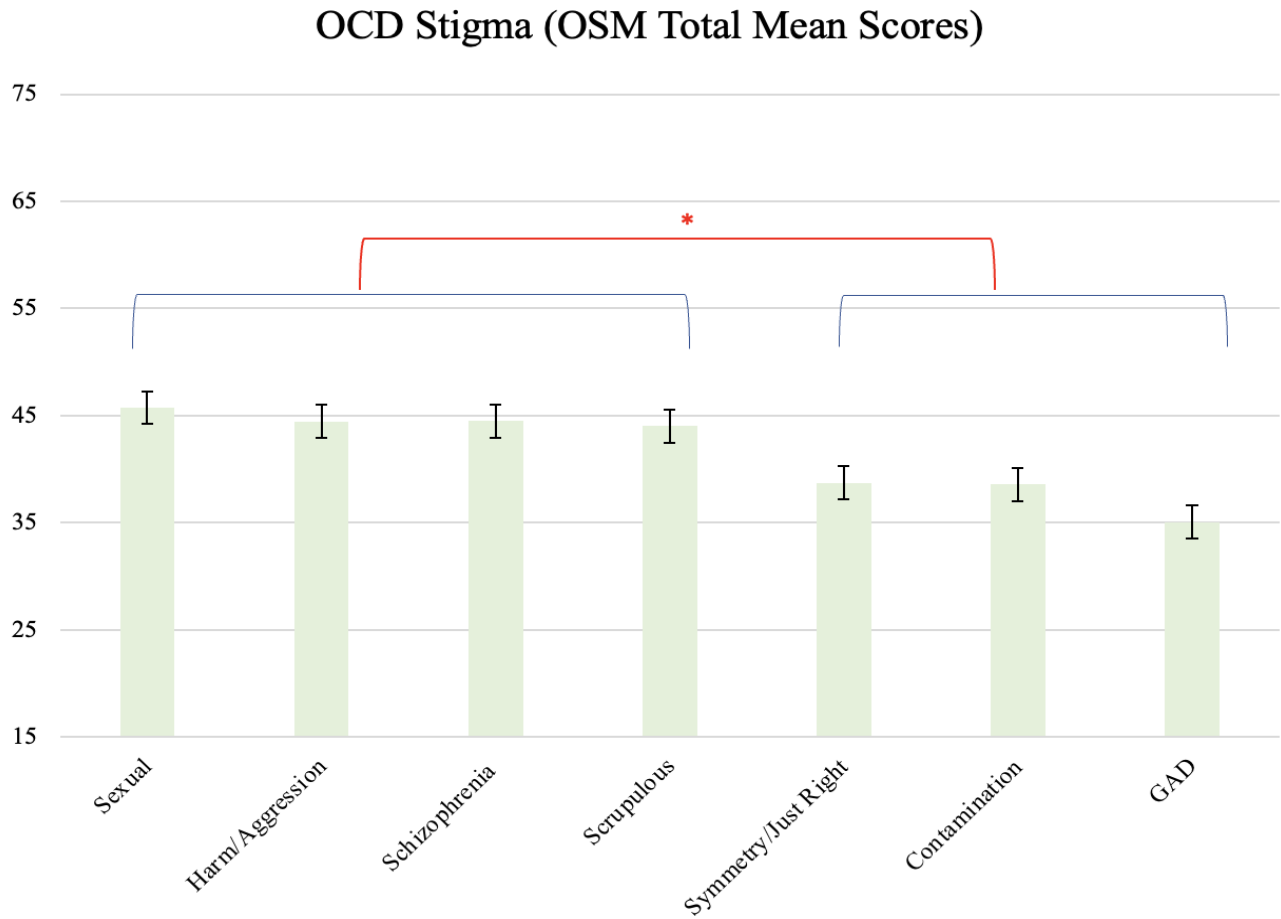
Note. \* Indicate significant differences of at least  $p < .01$ . Red bars show significant differences whereas blue bars show non-significant differences between conditions.

Figure 2. Anxiety-Related Stigma



Note. \* Indicate significant differences of at least  $p < .01$ . Red bars show significant differences whereas blue bars show non-significant differences between conditions.

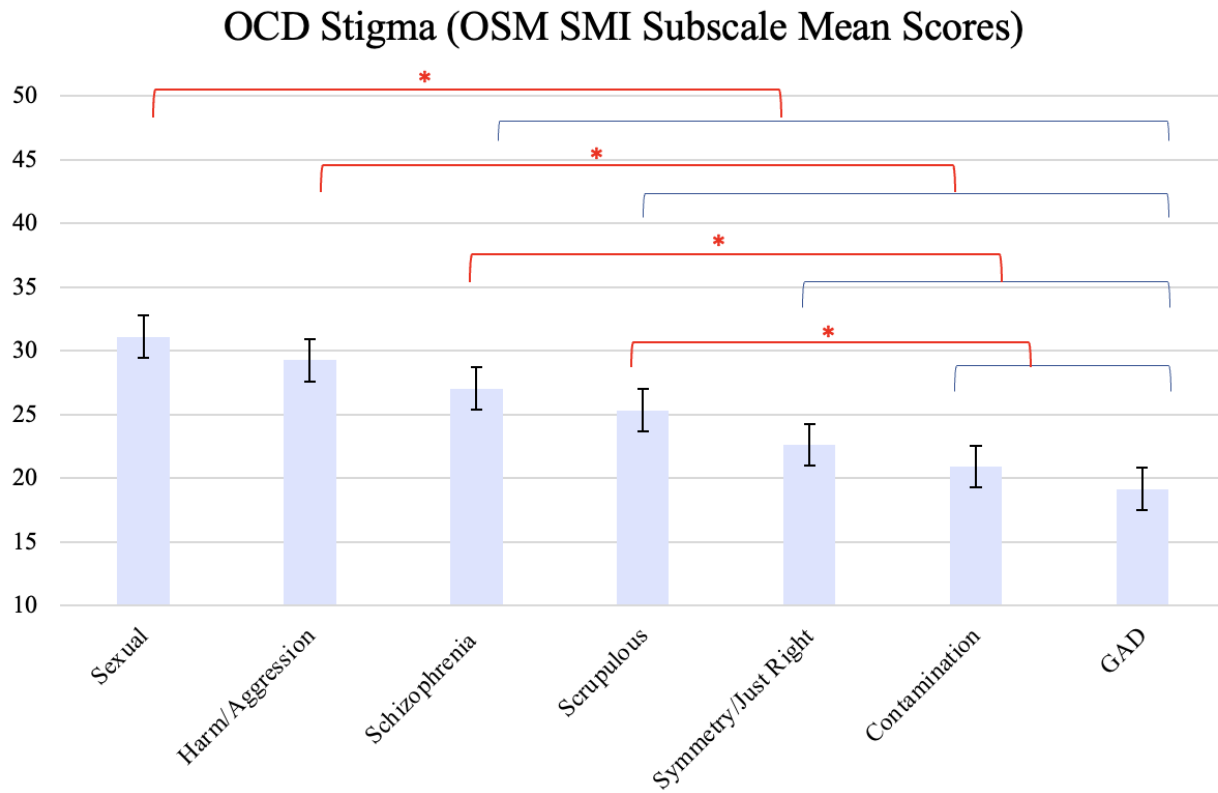
Figure 3A. OCD Stigma Total



Note. \* Indicate significant differences of at least  $p < .01$ . Red bars show significant differences whereas blue bars show non-significant differences between conditions.

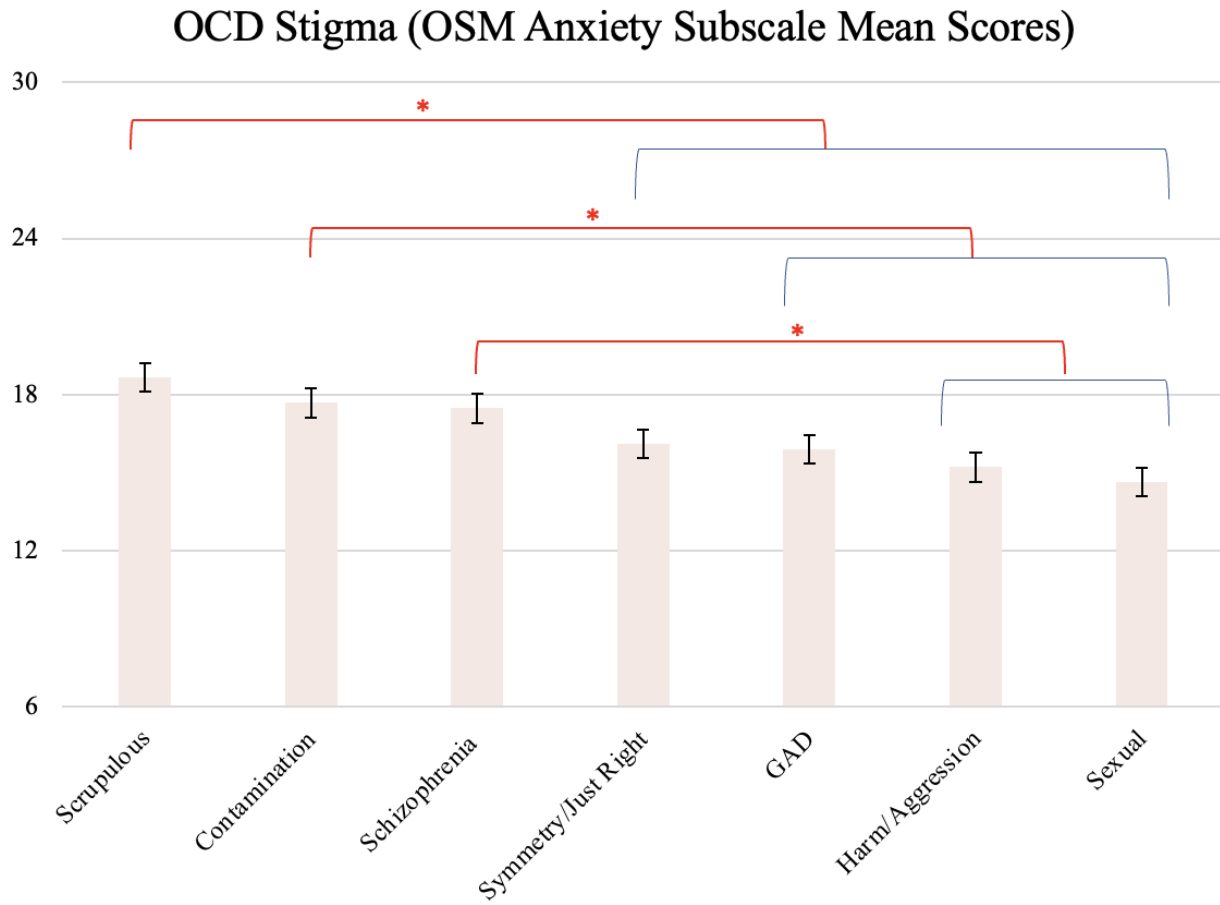


Figure 3B. OCD Stigma SMI



*Note.* \* Indicate significant differences of at least  $p < .01$ . Red bars show significant differences whereas blue bars show non-significant differences between conditions.

Figure 3C. OCD Stigma Anxiety



*Note.* \* Indicate significant differences of at least  $p < .01$ . Red bars show significant differences whereas blue bars show non-significant differences between conditions.

## Appendix A: OCD Vignettes

### **SYMMETRY/JR OCD:**

For five years, John has had frequent, unwanted thoughts about **things being uneven**. When **pictures of his children look crooked**, he becomes extremely distressed.

John has uncontrollable, anxiety-provoking thoughts about the **alignment of his pictures**. He fears that if he does not fix the pictures, **something bad will happen to his children**. John **spends hours each day moving the pictures** to look even. He feels relieved when the pictures look **“just right.”**

But, the thoughts and anxiety quickly return. Even though he knows his fears are unjustified, he cannot get rid of them. As a result, John has difficulty completing day-to-day tasks and has relationship problems.

### **CONTAMINATION OCD:**

For five years, John has had frequent, unwanted thoughts about **things being dirty**. When he is **with his children in public places**, he becomes extremely distressed.

John has uncontrollable, anxiety-provoking thoughts about **exposure to germs**. He fears that if he touches something contaminated, **he will give his children a deadly illness**. John **spends hours each day in the bathroom** washing his hands. He feels relieved when he has washed his hands enough times to **feel clean**.

But, the thoughts and anxiety quickly return. Even though he knows his fears are unjustified, he cannot get rid of them. As a result, John has difficulty completing day-to-day tasks and has relationship problems.

### **SEXUAL OCD:**

For five years, John has had frequent, unwanted thoughts about **inappropriate sex**. When he **reads to his children in their bedroom**, he becomes extremely distressed.

John has uncontrollable, anxiety-provoking thoughts about **impulsively having sex with his children**. He fears that having these thoughts mean he is **a bad person who would act on a sexual urge**. John **spends hours each day checking his body** for signs of arousal. He feels relieved when he sees that he is **not aroused**.

But, the thoughts and anxiety quickly return. Even though he knows his fears are unjustified, he cannot get rid of them. As a result, John has difficulty completing day-to-day tasks and has relationship problems.

**HARM OCD:**

For five years, John has had frequent, unwanted thoughts about **violent acts**.  
When he **cooks with his children in the kitchen**, he becomes extremely distressed.

John has uncontrollable, anxiety-provoking thoughts about **impulsively stabbing his children**.  
He fears that having these thoughts mean he is a **bad person who would act on an aggressive urge**.

John **spends hours each day counting all of the knives** in his kitchen.  
He feels relieved when he sees that **no knives are missing**.

But, the thoughts and anxiety quickly return.  
Even though he knows his fears are unjustified, he cannot get rid of them.  
As a result, John has difficulty completing day-to-day tasks and has relationship problems.

**SCRUPULOUS OCD:**

For five years, John has had frequent, unwanted thoughts about **offending God**.  
When **he reads his children the Bible**, he becomes extremely distressed.

John has uncontrollable, anxiety-provoking thoughts about **cursing God's name**.  
He fears that if he impulsively says God's name in vein, **God will punish his children**.  
John **spends hours each day reciting his prayers**.  
He feels relieved when he believes he has **prayed enough times**.

But, the thoughts and anxiety quickly return.  
Even though he knows his fears are unjustified, he cannot get rid of them.  
As a result, John has difficulty completing day-to-day tasks and has relationship problems.

## **Appendix B: Central and Sub Questions for Study 1**

### Central Questions:

1. What do you think people should know about John?
2. How would you describe John to a friend?

### Sub-Questions:

1. What are your opinions of John?
2. What do you think John's employers would say about him?
3. What do you think a new employee who works with John would say about him?
4. What do you think John's friends would say about him?
5. What do you think John's family would say about him?
6. What would you expect John to be like if you met him in person?
7. What would you expect John to be like in five years?

### Appendix C: Final Codebook Study 1

<b>Coding Label</b>	<b>Definition</b>
<b>Crazy</b>	Uses terms like “crazy,” “delusional,” or “unstable” to describe John
<b>Criminal</b>	Uses term “criminal” to describe John or discusses him in relation to jail or prison due to his thoughts/behaviors
<b>Dangerous</b>	Uses term “dangerous” to describe Johns as a person or his thoughts/behaviors
<b>Desire for Social Distance</b>	Expresses discomfort in being around or allowing others around John
<b>Detail Oriented</b>	Discusses John’s thoroughness, completeness of tasks, attention to detail (NOT related to a desire for cleanliness or orderliness)
<b>Distracted</b>	Uses terms like “distracted,” “unfocused,” “difficulty paying attention,” or “preoccupied,” to describe John
<b>Faithful</b>	Describes John as someone who is a religious man that is faithful to God
<b>Germaphobe</b>	Uses terms like “germaphobe,” “clean freak,” or “obsessive about germs” to describe John’s thoughts/behaviors
<b>Good Employee</b>	Uses terms like “good employee” or “hard worker” to describe John’s work ethic
<b>Good Person</b>	Uses terms like “good,” “enjoyable person to be around,” “good guy,” “kind,” “caring,” or “good person” to describe John
<b>Good Parent</b>	Uses terms like “good,” “great,” “loving,” or “caring” to describe John’s parenting abilities
<b>Incompetent</b>	Describes John as having difficulty completing tasks, not having the necessary skills to complete his work, unprofessional, or may highlight his inability to function
<b>Neurotic</b>	Describes John as high strung, needing perfection or control. Uses terms like “obsessive/obsessed,” or “control freak”
<b>Nice</b>	Uses terms like “nice,” “easy going” to describe John

<b>Normal Person</b>	Uses terms like “average,” or “normal” to describe John. Describes John as unsuspecting, or “like any other person”
<b>Nuisance</b>	Uses terms like “irritating,” “embarrassing,” “annoying,” to describe John. Describes John as someone who is difficult to be around, live with, or would be okay to spend time with only “in small doses”
<b>Odd</b>	Uses terms like “strange,” “abnormal,” “quirky,” “weird,” “odd,” or “off” to describe John
<b>Overbearing</b>	Describes John’s strong desire to control others. Describes him as “intense,” or suggests he has extreme expectations
<b>Overprotective</b>	Describes John’s excessive anxiety about his children’s wellbeing or his need for their safety at all costs
<b>Perception of a Problem</b>	Uses derogatory terms to describe John’s symptoms (“issues,” “problems”). Describes concern about John’s thoughts/behaviors, or denotes “there is something wrong with him”
<b>Pervert</b>	Describes his thoughts as distorted, disgusting sexual fantasies that are abnormal/unacceptable (NOT “inappropriate,” as this term was used in vignette)
<b>Rigid</b>	Uses terms like “disciplined,” “controlled,” “serious,” “careful,” “cautious,” or “uptight” to describe John
<b>Symptoms Improve with Treatment</b>	Describes John's symptoms as <i>improving</i> with “help,” “intervention,” “treatment,” or “therapy”
<b>Symptoms Require Treatment</b>	Describe that John needs “to get help” or “go to therapy” or “learn skills”
<b>Symptom Permanence</b>	Describes that John’s symptoms will maintain or get worse over time (NO mention of symptoms requiring treatment)
<b>Tidy</b>	Describes John as a clean, neat, or well-organized person
<b>Trivial</b>	Describes John’s thoughts/behaviors as “over the top.” Minimizes John’s symptoms and suggests he can “snap out of it.” Uses terms like “worry wart.”

<b>Unfit Parent</b>	Uses terms like “unfit” or “incapable” to describe John’s parenting abilities.
<b>Unpredictable</b>	Uses terms like “unpredictable,” “ticking time bomb,” “impulsive,” or “out of control” to describe John’s behaviors. Describes John as someone who “might do something” and that you “don’t know what will come next”
<b>Violent</b>	Describes John as someone who is capable of or will commit violent acts or acts of harm (NO mention of jail, prison, or criminality)
<b>Withdrawn</b>	Uses terms like “off-putting,” “reclusive,” “cold,” “shy,” “keeps to himself” to describe John

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## Appendix D: Schizophrenia and GAD Vignettes

### SCHIZOPHRENIA

For five years, John has had **beliefs that a secret cult is out to get him**.  
When he is **in public with his children**, he becomes extremely distressed.

John **believes that messages on billboards are meant especially for him**.  
He fears that **a cult is threatening him**.  
John spends hours each day **hearing voices saying the cult will hurt his children**.  
He feels relieved when his **children are safe at home**.

But, John **remains suspicious of everyone**.  
Even though **others do not hear these voices, he believes they are real**.  
As a result, John has difficulty completing day-to-day tasks and has relationship problems.

### GENERALIZED ANXIETY DISORDER

For five years, John has had **excessive worries about being a failure**.  
When he is **worrying late at night**, he becomes extremely distressed.

John has uncontrollable, anxiety-provoking thoughts **about many different things**.  
He fears **that if he makes the wrong decisions in his life, he will let his children down**.  
John spends hours each day **feeling on-edge, restless, and unable to concentrate**.  
He feels relieved when he **can distract himself from his thoughts**.

But, John's **worries** quickly return.  
Even though he knows his **worries are unlikely, he cannot stop thinking about them**.  
As a result, John has difficulty completing day-to-day tasks and has relationship problems.

**Appendix E: OCD Stigma Measure (OSM)**

Please indicate your agreement with each statement from 1 (Strongly Disagree) to 5 (Strongly Agree):

<b>Item</b>	<b>Corresponding Theme from Study 1</b>
John is not a capable employee	Incompetent Employee
John does not have many close relationships	Withdrawn
John is at fault for his problems	Blame
John is introverted	Distant
John is a good parent*	Good Parent
John is strange	Odd
John should be embarrassed about his issues	Shame
John is not safe to be around	Dangerous
John is a worry wart	Trivial Concerns
John is someone I would want my kids around*	Social Distance
John is a disturbed person	Sick
John is insane	Crazy
John is annoying to be around	Nuisance
John is caring*	Kind
John is overprotective of his children	Overprotective Parent
John is pathetic	Weak

*Note.* (\*) indicate reverse scored item