



Clinical presentation of comorbid obsessive-compulsive disorder and posttraumatic stress disorder in Latin American individuals

Caitlin M. Pinciotti^{a,*}, Erica K. Buckland^a, Vissente Tapia-Cuevas^b, Maritza J. Romero^c, Diana Obando^c, Melanie Longhurst^d, Natalia A. Pereira Morales^e, Jacey L. Anderberg^{a,f}, Renee M. Frederick^{a,g}, Vanessa Zavala Cruz^a, Dayan Berrones^a, Josselyn S. Muñoz^{a,h}, Hannah C. Moore^a, Carolina Cappi^{i,j,k}, Ogechi C. Onyeka^a, Andrew D. Wiese^a, Latin American Trans-Ancestry INitiative for OCD genomics (LATINO), Brazilian Obsessive-Compulsive Spectrum Disorder Working Group (GTTOC), James J. Crowley^l, Eric A. Storch^a

^a Psychiatry and Behavioral Sciences, Baylor College of Medicine, Houston, TX, United States

^b Centro Interdisciplinario de Neurociencia de Valparaíso, Valparaíso, Chile

^c Facultad de Ciencias del Comportamiento, Universidad de La Sabana, Chía, Colombia

^d Department of Psychiatry, Texas Tech University Health Sciences Center El Paso, El Paso, TX, United States

^e José Perales - Clínica Privada, Santa Cruz, Andres Ibañez, Bolivia

^f Department of Psychology, University of Nebraska-Lincoln, Lincoln, NE, United States

^g Department of Psychology, University of Houston, Houston, TX, United States

^h John Sealy School of Medicine, University of Texas Medical Branch, Galveston, TX, United States

ⁱ Department of Psychiatry, Rutgers University - Robert Wood Johnson Medical School, New Brunswick, NJ, United States

^j Department of Psychiatry, Rutgers University - New Jersey Medical School, Newark, NJ, United States

^k Institute and Department of Psychiatry, Universidade de São Paulo, São Paulo, São Paulo, Brazil

^l Department of Genetics, University of North Carolina at Chapel Hill, Chapel Hill, NC, United States

ARTICLE INFO

Keywords:

Obsessive-compulsive disorder
Posttraumatic stress disorder
Comorbidity
Clinical presentation
Latin Americans

ABSTRACT

Comorbid obsessive-compulsive disorder (OCD) and posttraumatic stress disorder (PTSD) is associated with more a severe overall clinical presentation compared to OCD without PTSD. However, existing research has largely focused on White, non-Hispanic/Latino populations, limiting generalizability of this complex comorbidity to diverse ethnic groups. Using data collected from the multisite Latin American Trans-ancestry INitiative for OCD genomics (LATINO) study, this study sought to replicate and extend previous findings regarding the clinical presentation associated with comorbid OCD and PTSD (OCD + PTSD). Differences in OCD severity, OCD symptom dimensions, OCD-related insight, avoidance, pathological doubt, and quality of life were compared across 1995 Latin American adults (*M* age = 31.54) with OCD alone (31.6%), OCD with other comorbidities (54.6%), and OCD + PTSD (13.8%), and psychiatric comorbidities were compared between participants with OCD + PTSD and OCD with other comorbidities. Replicating and extending prior research, individuals with OCD + PTSD had more severe clinical presentations across all domains, with the largest effect size found for quality of life. Consistent with previous research, these findings indicate that the presence of PTSD is associated with worse OCD clinical severity among Latin Americans, underscoring the necessity for comprehensive assessment strategies and integrated treatment approaches.

1. Introduction

Obsessive-compulsive disorder (OCD) and posttraumatic stress disorder (PTSD) are characterized by distressing, intrusive thoughts and

images that cause significant distress and urges to engage in behaviors to suppress, prevent, or neutralize the resulting distress or feared outcomes (American Psychological Association, 2022; Fletcher et al., 2020). Trauma exposure is common among individuals

* Corresponding author. Department of Psychiatry and Behavioral Sciences, Baylor College of Medicine, 1977 Butler Blvd., Houston, TX, 77030, United States.
E-mail address: caitlin.pinciotti@bcm.edu (C.M. Pinciotti).

with OCD (Cromer et al., 2007; Gershuny et al., 2008) and OCD and PTSD frequently co-occur, with comorbidity rates between 23 and 39% among those seeking treatment for anxiety or mood concerns (Brown et al., 2001; Fontenelle et al., 2012; Gershuny et al., 2008; Torres et al., 2016). Compared to those with OCD without PTSD, comorbid OCD and PTSD (OCD + PTSD) is associated with a more severe clinical presentation (Fontenelle et al., 2012; Pinciotti et al., 2022; Pinciotti & Orcutt, 2020) and may be associated with poorer treatment outcomes (Gershuny et al., 2002; Pinciotti et al., 2024; Sasson et al., 2010).

However, with few exceptions (e.g., Fontenelle et al., 2012), our emerging understanding of the clinical characteristics associated with OCD + PTSD is largely based on research conducted with primarily white and non-Latino samples. This represents a notable gap because it limits generalizability of findings to Latino samples and contributes to the lack of representation of Latino individuals in OCD clinical trials (Wetterneck et al., 2012; Williams et al., 2010). Beyond a need to improve diverse representation in research, cultural factors can influence OCD severity, presentation, and clinical features (Matsunaga & Seedat, 2007; Taylor & Jang, 2011; Tramonti et al., 2021; Williams et al., 2017). For example, differences in severity and prevalence of obsessive-compulsive symptom (OCS) dimensions have been observed between Mexican and white individuals from the U.S. (Berman et al., 2020) and among Brazilians relative to other cultures (Fontenelle et al., 2004); and OCD-related impairment and distress differs between Costa Ricans and white individuals from the U.S. (Chavira et al., 2008; for a review, see Morris et al., 2024). Although these studies focused on OCD outside the context of PTSD, high rates of trauma exposure in some Latin American countries could additionally impact the presentation and clinical features of OCD + PTSD among Latino individuals (e.g., Borges et al., 2014). Indeed, conditional risk for PTSD following trauma is higher, PTSD severity is greater (Alcántara et al., 2013), and the course of PTSD illness appears more chronic among Latino populations compared to other racial and ethnic groups (Sibrava et al., 2019), potentially contributing to greater overall impairment and worsened quality of life. Accordingly, the present study sought to replicate and extend emerging findings about the clinical presentation of OCD + PTSD in a large Latino sample.

1.1. Severity

Individuals with comorbid OCD + PTSD report more severe OCD symptoms overall compared to those with OCD without PTSD, yet the severity of PTSD symptoms does not appear to differ significantly between those with OCD + PTSD and those with PTSD without OCD (Pinciotti & Orcutt, 2020; Pinciotti, Wetterneck et al., 2022). Severity of OCD symptoms is also higher among those who develop OCD after PTSD compared to those who develop OCD before PTSD (Fontenelle et al., 2012). As emerging research has suggested that OCD + PTSD symptoms are likely to be *dynamically* related in content or function (Pinciotti, Wadsworth, Ayton, Fontenelle, & Van Kirk, 2025), these findings could illustrate the elevated severity associated not only with the additive stress of multiple comorbidities but the unique complexity of overlapping symptomatology.

Taken together, findings suggest that while the addition of OCD does not meaningfully change the severity of PTSD symptoms, the addition of PTSD does meaningfully change the severity of OCD symptoms, making them more severe presumably in response to a traumatic event. This may be why the effect of trauma exposure on severity of compulsions is stronger than the effect of trauma exposure on severity of obsessions (Miller & Brock, 2017; Pinciotti & Fisher, 2022) – posttraumatic OCD compulsions are theorized to serve trauma-related functions, including the prevention of future trauma and the “healing” from past trauma (Pinciotti, 2023). Importantly, these associations persist even when controlling for the presence of additional comorbid psychiatric disorders, including mood, anxiety, substance use (Fontenelle et al., 2012; Ojserkis et al., 2017; Pinciotti et al., 2022), somatic symptom, and

impulse control disorders (Fontenelle et al., 2012).

1.2. Clinical presentation

Beyond OCD severity, several studies have sought to determine whether comorbid OCD + PTSD is associated with a unique pattern of OCS dimensions, including those related to cleanliness (e.g., contamination obsessions and cleaning compulsions), symmetry (e.g., not-just-right sensations and compulsions involving repeating, ordering, and counting), forbidden or taboo thoughts (e.g., aggressive, sexual, and religious obsessions and reassurance seeking and confessing compulsions), and responsibility for harm (e.g., fears of accidental harm to oneself or others and associated checking compulsions; Abramowitz et al., 2010). However, these studies have failed to find a singular, characteristic pattern of OCS (Pinciotti & Orcutt, 2020; Pinciotti, Wetterneck et al., 2022), likely because the effect of trauma exposure on OCD is trauma-, person-, and context-specific (Miller & Brock, 2017; Ojalehto et al., 2023; Pinciotti et al., 2021). Namely, the manner in which trauma exposure and subsequent PTSD symptoms impact OCS is contingent on the context in which the trauma occurred and how it is experienced and interpreted by the individual.

Despite the lack of unique OCS presentation uniformly characterizing comorbid OCD + PTSD, other clinical features have shown to differ between those with OCD + PTSD and those with OCD. In one longitudinal study, participants with OCD and a lifetime history of PTSD reported poorer insight into their OCD symptoms and worse quality of life compared to those with OCD and no history of PTSD (Ojserkis et al., 2017). Individuals with OCD + PTSD also exhibit greater psychiatric comorbidity overall (Ojserkis et al., 2017), including higher rates of suicidality and comorbid substance use, mood, anxiety, feeding/eating, somatoform, impulse control, and personality disorders compared to those with OCD without PTSD (Fontenelle et al., 2012; Ojserkis et al., 2017; Pinciotti, Wetterneck et al., 2022).

Avoidance plays a central role in the development and maintenance of both OCD and PTSD (Foa & McLean, 2016; Foa & Rothbaum, 2001). Despite this, the severity of PTSD-related avoidance does not appear to differ across individuals with OCD, PTSD, and comorbid OCD + PTSD (Pinciotti & Orcutt, 2020; Pinciotti, Wetterneck et al., 2022). In one sample, OCD compulsions were intuitively more severe among individuals with OCD + PTSD compared to those with PTSD, yet there was no evidence that OCD compulsions were more severe among individuals with OCD + PTSD compared to those with OCD (Pinciotti, Wetterneck et al., 2022). However, the measure used to assess compulsions severity in the study by Pinciotti and colleagues (2022) did not account for passive avoidance behaviors, which are prevalent among individuals with OCD (Pinciotti et al., 2023) and include avoidance of contact with feared objects, activities, people, or places (Storch et al., 2010). Explicit measurement of OCD avoidance behaviors beyond compulsions is needed to better understand whether PTSD intensifies OCD-related avoidance, as theorized.

Finally, there is some evidence to suggest that pathological doubt could be uniquely relevant to individuals with comorbid OCD + PTSD. Pathological doubt obsessions are more common in individuals who perceive their OCD was caused by trauma, likely due to trauma-related doubting and uncertainty (Pinciotti & Fisher, 2022), however it is unclear how these findings may translate to PTSD or whether the severity – not just the presence – of pathological doubt may differ across groups. Moreover, with the exception of Fontenelle and colleagues (2012), findings are based on North American, primarily white and non-Latino samples. Other study findings are based on comparisons between individuals with and without current or lifetime PTSD, so it is unclear how the presence or absence of other comorbidities beyond PTSD may impact comparative findings. Indeed, individuals with OCD and other comorbidities exhibit more severe clinical presentations compared to those with OCD alone (Hofmeijer-Sevink et al., 2013), yet it is unclear whether PTSD confers a risk for unique added clinical severity over and above the

additive effect of other psychiatric comorbidities.

1.3. The present study

The present study aimed to replicate and expand upon prior research by comparing the clinical presentation of OCD + PTSD across Latino individuals with OCD only, OCD with other comorbidities, and OCD + PTSD. We had two aims: (1) to compare OCD severity across the three diagnostic groups and (2) to compare the clinical presentation across the three diagnostic groups. With respect to the first aim, we predicted that participants with OCD + PTSD would exhibit more severe OCD overall than those with OCD only and OCD with other comorbidities, including more severe obsessions and compulsions. With respect to the second aim, we predicted that participants with OCD + PTSD would exhibit more severe checking, ordering, and obsessing symptoms, poorer OCD insight, more severe OCD-related avoidance and pathological doubt, and lower quality of life compared to those with OCD only and OCD with other comorbidities. Lastly, we predicted that those with OCD + PTSD would have higher rates of psychiatric comorbidities than those with OCD with other comorbidities.

2. Method

2.1. Participants

Participants were recruited for the Latin American Trans-ancestry Initiative for OCD genomics (LATINO), an ongoing research collaboration across the United States and Latin American countries that seeks to establish a genetic registry study of OCD among individuals who identify as Latino, Hispanic, Brazilian, or Caribbean. The recruitment network for the LATINO study includes more than 50 recruitment sites at clinics, universities, psychiatric hospitals, day treatment programs, and/or partial hospitalization programs in Latin America, the United States, and Canada. Participants were also recruited through social media, research recruitment networks, organizational websites, and clinician referral. See [Crowley et al., 2024](#) for more details.

Eligible participants for the LATINO study included (1) those aged 7-89 years; (2) with symptoms of OCD; and (3) self-identification as Latin American, defined as having at least one grandparent of Latin American descent. Individuals who lacked decisional capacity to consent and participate were excluded. The present study represents an analysis of a subset of this data with 1995 adult participants aged 18 to 89 with a confirmed OCD diagnosis via structured diagnostic clinical interview.

2.2. Procedure

This study was reviewed and approved by an institutional review board at each of the participating sites. LATINO participants complete a battery of semi-structured clinical interviews conducted by a trained assessor, a series of self-report measures, and collection of a saliva sample. Instruments were available in English, Spanish, and Portuguese, and underwent a rigorous process of translation, back-translation, and cross-cultural adaptation to ensure validity. More specifically, for instruments unavailable in Spanish and/or Brazilian Portuguese, independent translations were performed by two investigators and a consensus was made by one specialist, with discordances reviewed by a second specialist. Back-translation was then performed by an English-certified proficient investigator, and this translation was evaluated by the author of the original instrument to ensure accuracy, with further adjustments made as necessary. Finally, the translated version was administered to approximately 40 participants during a test phase to ensure clarity and accuracy of the items. Further adjustments were made based on this feedback as needed. To ensure interrater reliability, data quality was assessed using REDCap flags and manual data checks. Study assessments were audio recorded and reviewed by site Principal Investigators for interrater reliability, who also provided supervision.

Unresolved scoring decisions during local site supervisions were escalated to an expert committee to achieve consensus about assessment scoring.

Raters receive training in each measure, including viewing several videotaped ratings of the Y-BOCS-II and practice independently rating each tape in their respective language. A score within 20% of the gold standard on the Y-BOCS-II is required to pass this phase. The expert committee of site Principal Investigators review and score all Y-BOCS-II assessment training videos to ensure standardization and accuracy. Ongoing office hours are held at Baylor College of Medicine to supplement on-site supervision. Measures were completed in participants' preferred language. Each participant attends an in person or virtual study visit via a secure video conferencing system. Participants were compensated up to \$50 USD for their participation, when permitted by the local IRB (some countries prohibited compensation).

2.3. Measures

The *Mini-International Neuropsychiatric Interview* (MINI; [Sheehan et al., 1998](#)) and the *Structured Clinical Interview for DSM 5 – Clinical Version* (SCID-5-CV; [First & Williams, 2016](#)) were used to determine diagnostic status. The MINI contains 17 psychiatric diagnosis modules based on ICD-10, DSM-IV (Spanish speaking countries), or DSM-5 criteria (English speaking countries). The SCID-5-CV contains 10 psychiatric diagnosis modules based on the ICD-10 and DSM-5 and was used for participants in Brazil. Both interviews have demonstrated excellent psychometric properties ([Osório et al., 2019](#); [Sheehan et al., 1998](#)). To maintain consistency between the interviews, comorbid psychiatric conditions were generated using only disorders assessed by both interviews and coded as present/absent: Major Depressive Disorder (MDD), Bipolar I Disorder, Bipolar II Disorder, Panic Disorder, Agoraphobia, Social Anxiety Disorder, Alcohol/Substance-Use Disorder, Psychotic Disorders, Mood Disorders with Psychotic Features, Anorexia Nervosa, Bulimia Nervosa, Binge Eating Disorder, Generalized Anxiety Disorder, Body Dysmorphic Disorder, Hoarding Disorder, Trichotillomania, Excoriation, Tourette's Disorder, and Tic Disorders. OCD and PTSD were also coded using the MINI and SCID-5-CV.

The *Obsessive Compulsive Inventory-4* (OCI-4; [Abramovitch et al., 2021](#)) is a four-item self-report measure of OCS dimensions, adapted from the 18-item Obsessive Compulsive Inventory-Revised (OCI-R; [Foa et al., 2002](#)), which was revised from the original 42-item Obsessive Compulsive Inventory (OCI; [Foa et al., 1998](#)). The OCI-4 contains four items that each assess severity of ordering, checking, washing, and obsessing symptoms, with each item rated from 1 = *not at all* to 5 = *extremely*. The measure has shown good to excellent psychometric properties ([Abramovitch et al., 2021](#)). In the present study, internal consistency of the OCI-4 was somewhat low ($\alpha = 0.63$).

The *Quality of Life Enjoyment and Satisfaction Questionnaire – Short Form* (Q-LES-Q-SF; [Endicott et al., 1993](#)) is a 16-item self-report measure of quality of life across various domains (e.g., physical health, relationships, sense of well-being, etc.). Items are rated from 1 = *not at all or never* to 5 = *frequently or all the time*, and scoring involves the summation of 14 items to create an overall satisfaction score from 0 to 100%, with higher scores indicating greater life satisfaction. The Q-LES-Q-SF has shown sound psychometric properties ([Stevanovic, 2011](#)). In the present study, internal consistency of the Q-LES-Q-SF was somewhat low ($\alpha = 0.66$).

The *Yale-Brown Obsessive-Compulsive Scale-Second Edition* (Y-BOCS-II; [Storch et al., 2010](#)) is an assessor-administered measure of the presence and severity of OCS. The Y-BOCS-II consists of a 67-item Symptom Checklist and a 10-item Severity Scale rated on a 6-point scale, yielding subscale scores for obsessions and compulsions, and a total score that ranges from 0 to 50. Severity benchmarks for the Y-BOCS-II are: non-/sub-clinical (0–14), mild (15–21), moderate (22–34), and severe (35–50; [Pinciotti et al., 2026](#)). Three subsequent items rated on a 6-point Likert scale assess OCD-related avoidance, pathological doubt, and

insight. Both English and Spanish versions of the measure have demonstrated excellent psychometric properties (Storch et al., 2010; Storch et al., 2026). In the present study, internal consistency was strong for the Y-BOCS-II total score ($\alpha = 0.88$), Obsessions subscale ($\alpha = 0.81$), and Compulsions subscale ($\alpha = 0.80$).

2.4. Data analytic plan

Analyses were conducted using SPSS version 29. All variables were missing in <10% of cases except the Q-LES-Q (21.5% missing), which was not collected from one site (Brazil). Analyses were run with the full sample with listwise deletion, and the Q-LES-Q analysis was run with only participants who completed this measure. A 3-level diagnostic status variable was created from MINI/SCID-5-CV for the three groups: OCD only; OCD with other comorbidities other than PTSD; and OCD + PTSD. The OCD + PTSD group included those who had OCD and PTSD with and without other comorbidities.

To address Aim 1 (OCD severity across the three groups), the following analyses were conducted: (1) analysis of covariance (ANCOVA) with Y-BOCS-II total score as dependent variable, sum of comorbid conditions as covariate, and the 3-level diagnostic status as independent variable to examine differences in overall OCD severity while controlling for comorbid conditions; (2) multivariate analysis of covariance (MANCOVA) with Y-BOCS-II obsessions and compulsions subscale scores as dependent variables, sum of comorbid conditions as covariate, and the 3-level diagnostic status as independent variable to examine differences in OCD obsessions and compulsions controlling for comorbid conditions.

To address Aim 2 (clinical presentation across the three groups), the following analyses were conducted: (1) multivariate analysis of variance (MANOVA) with OCI-4 dimensions as dependent variables and the 3-level diagnostic status as independent variable to examine differences in symptom dimensions (OCI-4); (2) analysis of variance (ANOVA) with Y-BOCS-II insight as dependent variable and the 3-level diagnostic status as independent variable to examine differences in OCD insight; (3) ANOVA with Y-BOCS-II avoidance as dependent variable and the 3-level diagnostic status as independent variable to examine differences in OCD avoidance; (4) ANOVA with Y-BOCS-II pathological doubt as dependent variable and the 3-level diagnostic status as independent variable to examine differences in OCD pathological doubt; (5) Chi-Square differences tests between comorbid psychiatric conditions (present/absent) and the 2-level diagnostic status (i.e., OCD with other comorbidities vs. OCD + PTSD) to examine differences in comorbid conditions; and (6) ANOVA with QLES-Q as dependent variable and the 3-level diagnostic status as independent variable to examine differences in quality of life. Partial eta squared effect sizes were interpreted as: trivial ($\eta_p^2 < 0.01$), small ($\eta_p^2 = 0.01 - 0.06$), moderate ($\eta_p^2 = 0.06 - 0.14$), and large ($\eta_p^2 > 0.14$; Richardson, 2011). Effect size for Chi-square differences tests were determined using Phi Coefficient as follows: small ($\Phi < 0.3$), medium ($\Phi = 0.3 - 0.7$), and large ($\Phi > 0.7$). Analyses were interpreted using a corrected significance value of $p < 0.01$ to account for multiple comparisons.

Assumptions of analyses were tested. No evidence of multicollinearity was present (all correlations were < 0.90). All dependent variables were statistically suggested to be distributed non-normally – though this was often in conflict with histograms – likely owing to sample size. Nonetheless, analyses were run with and without outliers and cases of non-normality and yielded the same findings for all variables; findings reported here, therefore, include all cases. Levene's tests for homogeneity of variance were significant for all Y-BOCS-II variables except pathological doubt, suggesting heterogeneity of variance. As a result, eta squared was used to interpret omnibus effects rather than the F-statistic and a subsequent MANOVA/ANOVA with Welch statistic was conducted to examine omnibus group-level differences, with a post-hoc Games-Howell test used to identify between-group differences.

3. Results

Among 1995 Latin American individuals with OCD, 13.8% currently met diagnostic criteria for PTSD. See Table 1 for full sample characteristics.

3.1. Aim 1: OCD severity

The omnibus ANOVA of the Y-BOCS II total score was significant, suggesting group differences in overall OCD severity, $\eta_p^2 = 0.03$, $p < 0.001$. The subsequent ANOVA conducted with a Welch statistic and Games-Howell test suggested that OCD severity was significantly greater in participants with OCD + PTSD than participants with OCD only and OCD with other comorbidities (both $p < 0.001$).

The omnibus MANCOVA of Y-BOCS-II obsessions and compulsions was significant, suggesting group differences in obsessions and compulsions, $\eta_p^2 = 0.02$, $p < 0.001$. The subsequent MANOVA conducted with a Welch statistic and Games-Howell test suggested that both OCD obsessions and OCD compulsions were significantly more severe in participants with OCD + PTSD than participants with OCD only and OCD with other comorbidities (all $p < 0.001$).

3.2. Aim 2: clinical presentation

The omnibus MANOVA of OCI-4 items was significant, suggesting group differences across OCI-4 items, $F(8, 3646) = 14.45$, $p < 0.001$, $\eta_p^2 = 0.03$. Between-subjects effects suggested that diagnostic group was associated with ordering ($F[2, 1825] = 38.24$, $p < 0.001$, $\eta_p^2 = 0.04$), checking ($F[2, 1825] = 28.35$, $p < 0.001$, $\eta_p^2 = 0.03$), washing ($F[2, 1825] = 31.35$, $p < 0.001$, $\eta_p^2 = 0.03$), and obsessing ($F[2, 1825] = 7.91$, $p < 0.001$, $\eta_p^2 = 0.01$). More specifically, participants with OCD + PTSD reported more severe symptoms across all four items than participants with OCD only and OCD with other comorbidities (all $p < 0.001$). See Table 2 for means and standard deviations across the three groups and for the total sample.

The omnibus ANOVA of Y-BOCS-II Insight was significant, suggesting group differences, $\eta_p^2 = 0.02$, $p < 0.001$. The subsequent ANOVA conducted with a Welch statistic and Games-Howell test suggested that insight was significantly worse in participants with OCD + PTSD than participants with OCD only ($p < 0.001$) and OCD with other comorbidities ($p = 0.02$). The omnibus ANOVA of Y-BOCS-II Avoidance was significant, suggesting group differences in OCD avoidance, $\eta_p^2 = 0.03$, $p < 0.001$. The subsequent ANOVA conducted with a Welch statistic and Games-Howell test suggested that OCD avoidance was significantly worse in participants with OCD + PTSD than participants with OCD only and OCD with other comorbidities (both $p < 0.001$). The omnibus ANOVA of Y-BOCS-II Pathological Doubt was significant, suggesting group differences in OCD pathological doubt, $F(2, 1877) = 24.13$, $p < 0.001$, $\eta_p^2 = 0.02$. Pairwise comparisons suggested that OCD pathological doubt was significantly worse in participants with OCD + PTSD than participants with OCD only ($p < 0.001$) and OCD with other comorbidities ($p = 0.002$).

The omnibus ANOVA of the Q-LES-Q was significant, suggesting group differences in quality of life, $F(2, 1560) = 72.05$, $p < 0.001$, $\eta_p^2 = 0.08$. Pairwise comparisons suggested that quality of life was significantly worse in participants with OCD + PTSD than participants with OCD only and OCD with other comorbidities (both $p < 0.001$).

Compared to participants with OCD with comorbidities, participants with OCD + PTSD were more likely to meet criteria for MDD, Bipolar I, Panic Disorder, Agoraphobia, Social Anxiety Disorder, Alcohol/Substance Use Disorder, Psychotic Disorder, Bulimia, Binge Eating Disorder, Body Dysmorphic Disorder, and Excoriation Disorder (see Table 3). The omnibus ANOVA also found that participants with OCD + PTSD had more comorbid psychiatric conditions overall than participants with OCD with other comorbidities, $F(1, 1363) = 48.00$, $p < 0.001$, $\eta_p^2 = 0.03$.

Table 1
Sample characteristics.

Sample Characteristics	OCD only (n = 630)		OCD w/other comorbidities (n = 1089)		OCD + PTSD (n = 276)		Total (N = 1995)	
	M or %	SD or n	M or %	SD or n	M or %	SD or n	M or %	SD or n
Age (range 18–89 years)	32.57	11.73	30.83	10.76	32.01	10.46	31.54	11.06
Sex								
Female	56.7%	356	66.5%	724	69.9%	193	63.9%	1273
Intersex	0.0%	0	0.1%	1	0.0%	0	0.1%	1
Male	43.3%	272	33.4%	363	30.1%	83	36.0%	718
Gender								
Female	56.2%	346	66.8%	687	72.9%	191	64.2%	1224
Genderqueer/Non-binary	1.5%	9	2.0%	21	2.7%	7	1.9%	37
Male	42.2%	260	30.7%	316	22.9%	60	33.4%	636
Transgender female	0.0%	0	0.0%	0	0.0%	0	0.0%	0
Transgender male	0.0%	0	0.2%	2	0.4%	1	0.2%	3
Prefer to self-identify	0.2%	1	0.2%	2	1.1%	3	0.3%	6
Sexual orientation								
Bisexual	9.2%	55	13.6%	136	17.4%	45	12.7%	236
Lesbian/gay	7.7%	46	5.4%	54	3.5%	9	5.9%	109
Heterosexual	82.4%	495	78.7%	786	74.5%	193	79.3%	1474
Prefer to self-identify	0.8%	5	2.3%	23	4.6%	12	2.2%	40
Race								
African American	2.6%	16	1.1%	11	2.3%	6	1.7%	33
American Indian/Alaskan Native	2.6%	16	4.0%	41	3.0%	8	3.4%	65
Asian	0.7%	4	0.2%	2	1.1%	3	0.5%	9
More than one race	8.5%	52	19.9%	205	19.0%	50	16.1%	307
Native Hawaiian/Pacific Islander	0%	0	0%	0	0.0%	0	0.0%	0
Parda	6.7%	41	0.0%	0	1.9%	5	2.4%	46
White	58.0%	356	29.3%	301	33.1%	87	39.0%	744
Other/unknown	21.0%	129	45.6%	469	39.5%	104	36.8%	702
Years Education	15.33	6.00	16.29	35.31	15.07	5.18	15.88	27.82
Monthly Income (relative to others in country)								
Much less	23.7%	74	22.2%	218	26.7%	62	23.2%	354
Somewhat less	16.0%	50	19.2%	189	25.0%	58	19.4%	297
About the same	31.7%	99	32.8%	322	25.0%	58	31.4%	479
Somewhat more	21.8%	68	21.5%	211	18.1%	42	21.0%	321
Much more	6.7%	21	4.4%	43	5.2%	12	5.0%	76
Marital Status								
Divorced	3.3%	20	1.6%	16	8.1%	21	3.0%	57
Living with partner	7.4%	45	13.6%	138	10.8%	28	11.2%	211
Married	18.0%	109	16.9%	172	16.2%	42	17.2%	323
Separated	1.3%	8	1.7%	17	3.5%	9	1.8%	34
Single	69.3%	420	66.0%	672	61.4%	159	66.4%	1251
Widowed	0.7%	4	0.3%	3	0.0%	0	0.4%	7
Country								
Argentina	2.7%	17	3.6%	39	0.7%	2	2.9%	58
Bolivia	2.2%	14	11.4%	124	18.5%	51	9.5%	189
Brazil	46.9%	295	0.0%	0	9.1%	25	16.0%	320
Canada	0.0%	0	0.0%	0	0.0%	0	0.0%	0
Chile	3.0%	19	17.3%	188	15.6%	43	12.5%	250
Colombia	7.3%	46	7.5%	82	2.5%	7	6.8%	135
Ecuador	0.0%	0	0.5%	5	1.1%	3	0.4%	8
El Salvador	1.0%	6	1.5%	16	0.7%	2	1.2%	24
Mexico	7.9%	50	19.0%	207	17.0%	47	15.2%	304
Paraguay	2.4%	15	2.8%	31	1.8%	5	2.6%	51
Peru	12.7%	80	18.0%	196	13.0%	36	15.6%	312
Puerto Rico	0.2%	1	1.3%	14	1.4%	4	1.0%	19
United States	13.7%	86	17.2%	187	18.5%	51	16.2%	304

Note. Parda refers to individuals of mixed race, commonly used as racial classification in Brazil.

4. Discussion

The present study replicated and extended earlier findings regarding the clinical presentation associated with OCD + PTSD in a large sample of Latin Americans. Notably, findings were derived from the largest sample of individuals with OCD + PTSD published to date, offering more robust and reliable conclusions regarding impacts on clinical presentation. As prior research focused primarily on Eurocentric populations and did not include “OCD only” comparison groups, generalizability of findings were previously limited. Despite this, the present study overall comports with prior research that OCD + PTSD is associated with a severe clinical presentation across cultures.

With respect to OCD severity, consistent with hypotheses and prior research (Fontenelle et al., 2012; Ojserkis et al., 2017; Pinciotti &

Orcutt, 2020; Pinciotti et al., 2022), the present study found greater overall OCD severity associated with OCD + PTSD compared to those with OCD only and OCD with other comorbidities, including with respect to obsessions and compulsions separately. Interestingly, prior work has suggested that whereas PTSD increases severity of OCD, OCD does not increase severity of PTSD (Pinciotti, Wetterneck et al., 2022; Pinciotti & Orcutt, 2020). Although the present study was not able to operationalize severity of PTSD, findings nonetheless offer further support that trauma and PTSD are associated with increased severity of obsessions and compulsions among individuals with OCD (Fontenelle et al., 2012; Ojserkis et al., 2017; Pinciotti & Orcutt, 2020; Pinciotti, Wetterneck, et al., 2022; Tibi et al., 2020).

Participants with OCD + PTSD also endorsed more severe symptoms across the four OCS dimensions compared to those with OCD only and

Table 2
Clinical presentation.

Clinical Characteristics	OCD only (n = 630)		OCD w/other comorbidities (n = 1089)		OCD + PTSD (n = 276)		Total (N = 1995)	
	M	SD	M	SD	M	SD	M	SD
OCD Dimensions								
OCI-4 Ordering	1.49	1.27	1.84	1.21	2.27	1.19	1.79	1.25
OCI-4 Checking	1.42	1.25	1.71	1.28	2.13	1.30	1.68	1.29
OCI-4 Washing	1.38	1.38	1.70	1.32	2.19	1.35	1.66	1.37
OCI-4 Obsessing	2.16	1.29	2.22	1.24	2.51	1.23	2.24	1.26
OCD Severity								
Y-BOCS-II Obsessions	12.04	4.77	11.12	4.02	13.07	4.45	11.67	4.37
Y-BOCS-II Compulsions	10.69	4.68	10.91	4.24	12.83	4.59	11.12	4.48
Y-BOCS-II Total Score	22.73	8.74	22.03	7.63	25.91	8.36	22.79	8.19
Y-BOCS-II Insight	1.07	0.97	1.29	0.98	1.47	1.09	1.25	1.00
Y-BOCS-II Avoidance	1.17	1.02	1.38	1.03	1.79	1.09	1.37	1.05
Y-BOCS-II Pathological Doubt	1.34	1.00	1.58	0.95	1.81	1.01	1.54	0.99
Quality of Life (Q-LES-Q)	61.91	17.97	51.00	18.46	43.57	18.99	52.10	19.26
Number of Comorbidities (MINI/SCID-5)	–	–	2.58	1.72	3.47	2.48	1.89	2.05

Note. OCI-4 = Obsessive-Compulsive Inventory-4; Y-BOCS-II = Yale-Brown Obsessive-Compulsive Scale-Second Edition; Q-LES-Q = Quality of Life Enjoyment and Satisfaction Questionnaire-Short Form; MINI = Mini-International Neuropsychiatric Interview; SCID-5 = Structured Clinical Interview for DSM 5 – Clinical Version.

Table 3
Psychiatric comorbidities across diagnostic groups.

Psychiatric Disorder	OCD w/other comorbidities (n = 1089)	OCD + PTSD (n = 276)	χ^2	p	Φ
Major Depressive	19.9% (217)	29.3% (81)	11.45	<0.001	0.09
Bipolar I	2.3% (25)	6.5% (18)	12.89	<0.001	0.10
Bipolar II	0.7% (8)	2.2% (6)	4.49	0.04	0.06
Panic	17.3% (188)	30.1% (83)	22.70	<0.001	0.13
Agoraphobia	25.2% (274)	37.0% (102)	15.35	<0.001	0.11
Social Anxiety	26.7% (291)	37.3% (103)	12.04	<0.001	0.09
Alcohol/Substance-Use	8.3% (90)	16.7% (46)	17.33	<0.001	0.11
Psychotic	2.6% (28)	5.8% (16)	7.35	0.01	0.07
Mood w/Psychotic Features	2.3% (25)	4.3% (12)	3.52	0.05	0.05
Anorexia	3.0% (33)	5.4% (15)	3.75	0.04	0.05
Bulimia	5.0% (54)	11.2% (31)	14.84	<0.001	0.10
Binge Eating	11.6% (126)	17.4% (48)	6.71	0.01	0.07
Generalized Anxiety	68.9% (750)	74.6% (206)	3.49	0.03	0.05
Body Dysmorphic	19.0% (207)	31.9% (88)	21.55	<0.001	0.13
Hoarding	8.9% (97)	12.3% (34)	2.95	0.06	0.05
Trichotillomania	6.3% (69)	8.3% (23)	1.40	0.15	0.03
Excoriation	16.3% (178)	25.0% (69)	11.13	<0.001	0.09
Tourette's Tic	2.0% (22)	2.5% (7)	0.28	0.37	0.01
	4.6% (50)	7.6% (21)	4.07	0.03	0.05

OCD with other comorbidities. Prior research has failed to find a universal pattern of OCS associated with OCD + PTSD (Pinciotti & Orcutt, 2020; Pinciotti, Wetterneck et al., 2022) due to unique trauma-based impacts (e.g., (Miller & Brock, 2017; Ojalehto et al., 2023; Pinciotti et al., 2021). This finding appears to be reflected in the present study, wherein effect sizes were largely similar across the four OCS dimensions, with a slightly smaller effect found for obsessing that may reflect the significant yet smaller impact of trauma on obsessions versus compulsions (Miller & Brock, 2017; Pinciotti & Fisher, 2022).

Only one prior study has evaluated and found support for worsened insight and quality of life among those with OCD + PTSD compared to

those with OCD without PTSD (Ojserkis et al., 2017). However, the prior study assessed lifetime PTSD, potentially confounding effects between those with current versus past PTSD. Nonetheless, the present study replicates prior findings regarding greater concerns in these domains. Importantly, the effect size for quality of life was greatest of all outcomes assessed, suggesting that this domain of clinical presentation may be particularly impacted by comorbid PTSD.

No existing study has evaluated the severity of OCD-related avoidance or pathological doubt among individuals with OCD + PTSD, despite the centrality of these symptoms to OCD. One prior study found that those attributing a traumatic etiology to their OCD also endorsed more pathological doubt symptoms in the past (Pinciotti & Fisher, 2022), however severity of these symptoms was not measured and findings were specific to those endorsing a traumatic etiology, excluding those with PTSD who may not believe trauma directly caused their OCD to develop but may nonetheless be impacted by trauma and PTSD. Findings extend prior research and offer support that OCD-related avoidance and pathological doubt are more pronounced among those with OCD + PTSD compared to those with OCD only and OCD with other comorbidities. Given the interference of avoidance on treatment for OCD (e.g., Wheaton et al., 2018), findings support avoidance as an important treatment target when working with individuals with OCD + PTSD.

Finally, consistent with prior research (Fontenelle et al., 2012; Ojserkis et al., 2017; Pinciotti et al., 2022), the present study found greater psychiatric comorbidity burden among those with OCD + PTSD compared to those with OCD with other comorbidities, both in number of comorbidities and across disorder comparisons. Findings offer further support to the far-reaching impacts of trauma on a range of mental health conditions and concerns.

4.1. Limitations & future directions

The study has several methodological limitations to note. First, missing Q-LES-Q data from one site (Brazil) may limit generalizability to Brazilian populations. The Q-LES-Q also demonstrated somewhat low internal consistency, calling into question its reliability for use in this population. Nevertheless, quality of life evidenced the largest effect size of all clinical characteristics assessed, suggesting that these issues did not significantly impact findings. Similarly, diagnoses in Brazil were made using the SCID-5 rather than the MINI, used by all other sites. Although we attempted to align assessments by including only conditions assessed on both instruments, reliability of diagnoses between Brazil and other sites may be impacted. To reduce survey burden, the 4-item OCI-4 was used to characterize OCS dimensions, however the OCI-4 demonstrated somewhat low internal consistency owing to its length.

The single item approach per dimension may also obscure potential differences across these dimensions, perhaps explaining the largely similar effect sizes across OCS. As prior research suggests larger differences across OCS dimensions (Fontenelle et al., 2012; Ojalehto et al., 2023), replication is recommend using more robust measures that may be better able to detect cultural or traumatic differences in expression, such as the Dimensional Obsessive-Compulsive Scale (DOCS; Abramowitz et al., 2010). In addition, a sum of comorbid conditions was used to covary effects or compare differences directly. This approach equally weighted the contributions of a variety of psychiatric conditions which may have differential effects on outcomes. Finally, although findings from the present study replicate and extend prior research in Eurocentric samples, the homogenous nature of the sample prevented cross-cultural comparisons (i.e., Latin American versus White American). The replication of these findings does not preclude the possibility that some of these effects may be more or less pronounced in Latinos than in Eurocentric participants, and future research may wish to collect data across these cultures and countries.

5. Conclusions

The clinical presentation associated with OCD + PTSD among Latin Americans mirrors earlier Eurocentric studies, demonstrating a more severe clinical picture overall compared to those with OCD only and OCD with other comorbidities. As individuals with OCD + PTSD face significant clinical challenges, it is crucial for clinicians to assess for, recognize, and address comorbid PTSD in OCD treatment. Assessment tools have been developed to improve differential diagnosis of these conditions (e.g., Pinciotti, 2025) and clinical recommendations synthesizing and integrating existing research are available to guide conceptualization, assessment, treatment sequence, and treatment approach based on a variety of individual factors (Pinciotti, 2023). Continued research into the complexity of OCD + PTSD will further efforts to improve care for this population across the globe.

CRedit authorship contribution statement

Caitlin M. Pinciotti: Writing – review & editing, Writing – original draft, Supervision, Formal analysis, Data curation, Conceptualization. **Erica K. Buckland:** Writing – review & editing, Conceptualization. **Vissente Tapia-Cuevas:** Writing – review & editing. **Maritza J. Romero:** Writing – review & editing. **Diana Obando:** Writing – review & editing. **Melanie Longhurst:** Writing – review & editing. **Natalia A. Pereira Morales:** Writing – review & editing. **Jacey L. Anderberg:** Writing – review & editing. **Josselyn S. Muñoz:** Writing – review & editing. **Hannah C. Moore:** Writing – review & editing. **Carolina Cappi:** Writing – review & editing. **Ogechi C. Onyeka:** Writing – review & editing. **Andrew D. Wiese:** Writing – review & editing. **James J. Crowley:** Writing - review & editing, Funding acquisition, Resources. **Eric A. Storch:** Writing - review & editing, Funding acquisition, Resources. **Victor R. Adorno:** Writing – review & editing, Funding acquisition. **Victoria Agostini:** Writing – review & editing, Funding acquisition. **Hemamalini Bommasamy:** Writing – review & editing. **Olivia M. Gamarra:** Writing – review & editing. **Marcelo O'Higgins:** Writing – review & editing.

Statement 1: Role of funding sources

Research reported in this publication was supported by the NIMH of the National Institutes of Health under Award Numbers U01MH125062, U01MH125050, 3U01MH125062-S1, and 3U01MH125062-S2. The content is solely the responsibility of the authors and does not necessarily represent the official views of the National Institutes of Health. This study was also supported by a donation from the Gillson-Longenbaugh Foundation. This research was supported by the Ancestral Population Network (APN), a National Institute of Mental Health

Initiative. The APN was established by the NIMH, to support data collection and analysis of psychiatric phenotypes across diverse ancestral populations.

Declaration of competing interest

The authors declare the following financial interests/personal relationships which may be considered as potential competing interests: **Dr. Pinciotti** receives research funding from the Texas Child Mental Health Care Consortium and fees to be a consultant and workshop presenter with Jenna Overbaugh, LLC, The Knowledge Tree, and OCD Training School.

Dr. Arnold receives research funding from Biohaven Inc., Canadian Institute for Health Research, Ontario Brain Institute, Genome Canada, and Alberta Children's Hospital Research Foundation.

Dr. Callahan receives research funding via grants not related to this work from the United States Department of Health and Human Services' Health Research Services Administration (HRSA) and Substance Abuse and Mental Health Services Administration (SAMSHA), as well as via the Texas Higher Education Coordinating Board. She also receives a stipend from the American Psychological Association for her role as Editor-in-Chief of *Training and Education in Professional Psychology*.

Dr. Cervin receives research support from the Kavli Foundation, the Swedish Research Council for Health, Working Life and Welfare, the Lindhaga Foundation, Stiftelsen Clas Grochinskys Minnesfond, the Crown Princess Lovisa's Association, the Kamprad Family Foundation, Fonden för Psykisk Hälsa, and Skåne University Hospital's Foundations and Donations; and financial compensation from Springer for editorial work outside of the submitted work.

Dr. Fontenelle receives research grants not related to this work from the National Council for Scientific and Technological Development – CNPq #313162/2023-9.

Dr. Martínez-González receives funding from NIH and FDA. She is a consultant with Abbvie, Sage Pharmaceuticals and SAMHSA.

Dr. Ogechi “Cynthia” Onyeka receives grant support from the National Institute of Mental Health (3U01MH125062-03S2), Texas Child Mental Health Care Consortium, and International OCD Foundation.

Dr. Rodriguez (in the last three years) has been a consultant for Biohaven Inc., Osmind, and Biogen; received research grant support from Biohaven Inc.; received royalties from American Psychiatric Association Publishing; and received a stipend from APA Publishing for her role as Deputy Editor at The American Journal of Psychiatry and a stipend for her role as Deputy Editor of Neuropsychopharmacology.

Dr. Ruggero receives research funding via grants not related to this work from the National Institute for Occupational Safety and Health (NIOSH), United States Department of Health and Human Services' Health Research Services Administration (HRSA) and Substance Abuse and Mental Health Services Administration (SAMSHA), as well as via the Texas Higher Education Coordinating Board.

Dr. Schachar receives research funding from the Canadian Institutes of Health Research and the Ontario Brain Institute unrelated to this work and consults to Kye Pharmaceuticals, Otsuka Therapeutics, Knight Pharmaceuticals and AIMHInc on topics related to ADHD.

Dr. Shavitt receives research grants not related to this work from the National Council for Scientific and Technological Development – CNPq #307386/2021-0; 402628/2019-5 and the Sao Paulo Research Foundation (FAPESP, #2019/27250-3).

Dr. Storch reports receiving research funding to his institution from the Ream Foundation, International OCD Foundation, and NIH. He was a consultant for Brainsway and Biohaven Pharmaceuticals in the past 24 months. He owns stock less than \$5000 in NView. He receives book royalties from Elsevier, Wiley, Oxford, American Psychological Association, Guildford, Springer, Routledge, and Jessica Kingsley.

Given their role as Editorial Board Members, Drs. Fontenelle, Goodman, McKay, and Storch had no involvement in the peer-review of

this article and had no access to information regarding its peer-review. All other authors have no disclosures to report.

Acknowledgements

The authors would like to thank all of the participants, clinics, and colleagues who made this project possible. We would like to acknowledge Gabrielle Armstrong, Laura Barón Castano, Sanie Marie Bulsara, Shaun Bulsara, Mabel Carrera-Olivares, María Catano-Cedillo, Kyra Cheung, Jéssica Crivelari, Katia Regina da Silva, Duff Dean, José Erazo, Diego Forero, Bharathi Gadad, Katy Gathron, Miri Gitik, Letty Guerrero, Imaje Harvey, Carlos Hines, Andrea Horvath Marques, Rachel Jocson, David Keller, Minjee Kook, Caleb Lack, Daniel Macioci, María Martínez, Guanpei Ming, Carlos Miranda, Mary Beth Morgan, Jhonny Muñoz, Emily O'Bryant, María Ochoa Rojas, Darpan Patel, Laura Petty, Uma Ramamurthy, Vivek Ramanathan, Catherine Rast, Bradley Riemann, Juan Rivas, Santiago Romero, Esme Rosario, Brenda Patricia Salcedo Martínez, Elda Yadira Salcedo Martínez, Leanne Scott, Natasha Sefcovic, McKenzie Sluder, Sharron Smart, Keaton Soileau, Andrew Storch, Andres Viana, and Jacquelyne Wynn.

Recruitment for this study was facilitated by the Simons Simplex Collection (SSC). We are grateful to all of the families at the participating SSC sites, as well as the principal investigators (A. Beaudet, R. Bernier, J. Constantino, E. Cook, E. Fombonne, D. Geschwind, R. Goin-Kochel, E. Hanson, D. Grice, A. Klin, D. Ledbetter, C. Lord, C. Martin, D. Martin, R. Maxim, J. Miles, O. Ousley, K. Pelphrey, B. Peterson, J. Piggot, C. Saulnier, M. State, W. Stone, J. Sutcliffe, C. Walsh, Z. Warren, E. Wijsman).

Recruitment for the study included ResearchMatch, a national health volunteer registry that was created by several academic institutions and supported by the US National Institutes of Health as part of the Clinical Translational Science Award (CTSA) program. ResearchMatch has a large population of volunteers who have consented to be contacted by researchers about health studies for which they may be eligible. Review and approval for this study and all procedures was obtained from Baylor College of Medicine.

Research reported in this publication was supported by the NIMH of the National Institutes of Health under Award Numbers U01MH125062, U01MH125050, 3U01MH125062-S1, and 3U01MH125062-S2. The content is solely the responsibility of the authors and does not necessarily represent the official views of the National Institutes of Health. This study was also supported by a donation from the Gillson-Longenbaugh Foundation. This research was supported by the Ancestral Population Network (APN), a National Institute of Mental Health Initiative. The APN was established by the NIMH, to support data collection and analysis of psychiatric phenotypes across diverse ancestral populations.

Data availability

Data will be made available on request.

References

- Abramovitch, A., Abramowitz, J. S., & McKay, D. (2021). The OCI-4: An ultra-brief screening scale for obsessive-compulsive disorder. *Journal of Anxiety Disorders*, 78, Article 102354. <https://doi.org/10.1016/j.janxdis.2021.102354>
- Abramowitz, J. S., Deacon, B. J., Olatunji, B. O., Wheaton, M. G., Berman, N. C., Losardo, D., Timpano, K. R., McGrath, P. B., Riemann, B. C., Adams, T., Björgvinsson, T., Storch, E. A., & Hale, L. R. (2010). Assessment of obsessive-compulsive symptom dimensions. *Psychological Assessment*, 22(1), 180–198.
- Alcántara, C., Casement, M. D., & Lewis-Fernández, R. (2013). Conditional risk for PTSD among Latinos: A systematic review of racial/ethnic differences and sociocultural explanations. *Clinical Psychology Review*, 33(1), 107–119. <https://doi.org/10.1016/j.cpr.2012.10.005>
- American Psychiatric Association. (2022). Diagnostic and statistical manual of mental disorders (5th ed., text rev.). <https://doi.org/10.1176/appi.books.9780890425787.x06>
- Berman, N. C., Gallegos-Guajardo, J., Reuman, L., Ramirez, M., Valdez, G., & Abramowitz, J. S. (2020). Cross-cultural differences in obsessive-compulsive symptom dimensions across young adults in Mexico and USA. *Mental Health, Religion & Culture*, 23(5), 443–454. <https://doi.org/10.1080/13674676.2020.1793309>
- Borges, G., Benjet, C., Petukhova, M., & Medina-Mora, M. E. (2014). Posttraumatic stress disorder in a nationally representative Mexican community sample. *Journal of Traumatic Stress*, 27(3), 323–330. <https://doi.org/10.1002/pts.21917>
- Brown, T. A., Campbell, L. A., Lehman, C. L., Grisham, J. R., & Mancill, R. B. (2001). Current and lifetime comorbidity of the DSM-IV anxiety and mood disorders in a large clinical sample. *Journal of Abnormal Psychology*, 110(4), 585–599. <https://doi.org/10.1037/0021-843X.110.4.585>
- Chavira, D. A., Garrido, H., Bagnarello, M., Azzam, A., Reus, V. I., & Mathews, C. A. (2008). A comparative study of obsessive-compulsive disorder in Costa Rica and the United States. *Depression and Anxiety*, 25(7), 609–619. <https://doi.org/10.1002/da.20357>
- Cromer, K. R., Schmidt, N. B., & Murphy, D. L. (2007). An investigation of traumatic life events and obsessive-compulsive disorder. *Behaviour Research and Therapy*, 45(7), 1683–1691. <https://doi.org/10.1016/j.brat.2006.08.018>
- Endicott, J., Nee, J., Harrison, W., & Blumenthal, R. (1993). Quality of life enjoyment and satisfaction questionnaire: A new measure. *Psychopharmacology Bulletin*, 29(2), 321–326. <https://www.ncbi.nlm.nih.gov/pubmed/8290681>
- First, M. B., & Williams, J. B. W. (2016). *SCID-5-CV: Structured clinical interview for DSM-5 disorders: Clinician version*. American psychiatric association publishing. <http://worldcat.org/title/956516736>
- Fletcher, T. L., Van Kirk, N., & Hundt, N. (2020). Obsessive-compulsive disorder and comorbid posttraumatic stress disorder. In *Advanced casebook of obsessive-compulsive and related disorders* (pp. 105–121). Elsevier. <https://doi.org/10.1016/B978-0-12-816563-8.00007-3>
- Foa, E. B., Huppert, J. D., Leiberg, S., Langner, R., Kichic, R., Hajcak, G., & Salkovskis, P. M. (2002). The obsessive-compulsive inventory: Development and validation of a short version. *Psychological Assessment*, 14(4), 485–496. <https://doi.org/10.1037/1040-3590.14.4.485>
- Foa, E. B., Kozak, M. J., Salkovskis, P. M., Coles, M. E., & Amir, N. (1998). The validation of a new obsessive-compulsive disorder scale. *Psychological Assessment*, 10(3), 206–214.
- Foa, E. B., & McLean, C. P. (2016). The efficacy of exposure therapy for anxiety-related disorders and its underlying mechanisms: The case of OCD and PTSD. *Annual Review of Clinical Psychology*, 12, 1–28. <https://doi.org/10.1146/annurev-clinpsy-021815-093533>
- Foa, E. B., & Rothbaum, B. O. (2001). *Treating the trauma of rape: Cognitive-behavioral therapy for PTSD*. New York, NY: Guilford Press.
- Fontenelle, L. F., Cocchi, L., Harrison, B. J., Shavitt, R. G., do Rosário, M. C., Ferrão, Y. A., de Mathis, M. A., Cordioli, A. V., Yücel, M., Pantelis, C., Mari, J. de J., Miguel, E. C., & Torres, A. R. (2012). Towards a post-traumatic subtype of obsessive-compulsive disorder. *Journal of Anxiety Disorders*, 26(2), 377–383. <https://doi.org/10.1016/j.janxdis.2011.12.001>
- Fontenelle, L. F., Mendlowicz, M. V., Marques, C., & Versiani, M. (2004). Trans-cultural aspects of obsessive-compulsive disorder: A description of a Brazilian sample and a systematic review of international clinical studies. *Journal of Psychiatric Research*, 38(4), 403–411. <https://doi.org/10.1016/j.jpsychires.2003.12.004>
- Gershuny, B. S., Baer, L., Jenike, M. A., Minichiello, W. E., & Wilhelm, S. (2002). Comorbid posttraumatic stress disorder: Impact on treatment outcome for obsessive-compulsive disorder. *American Journal of Psychiatry*, 159(5), 852–854. <https://doi.org/10.1176/appi.ajp.159.5.852>
- Gershuny, B. S., Baer, L., Parker, H., Gentes, E. L., Infield, A. L., & Jenike, M. A. (2008). Trauma and posttraumatic stress disorder in treatment-resistant obsessive-compulsive disorder. *Depression and Anxiety*, 25(1), 69–71. <https://doi.org/10.1002/da.20284>
- Hofmeijer-Sevink, M. K., van Oppen, P., van Megen, H. J., Batelaan, N. M., Cath, D. C., van der Wee, N. J., van den Hout, M. A., & van Balkom, A. J. (2013). Clinical relevance of comorbidity in obsessive compulsive disorder: The Netherlands OCD association study. *Journal of Affective Disorders*, 150(3), 847–854. <https://doi.org/10.1016/j.jad.2013.03.014>
- Matsunaga, H., & Seedat, S. (2007). Obsessive-compulsive spectrum disorders: Cross-national and ethnic issues. *CNS Spectrums*, 12(5), 392–400. <https://doi.org/10.1017/S1092852900021180>
- Miller, M. L., & Brock, R. L. (2017). The effect of trauma on the severity of obsessive-compulsive spectrum symptoms: A meta-analysis. *Journal of Anxiety Disorders*, 47, 29–44. <https://doi.org/10.1016/j.janxdis.2017.02.005>
- Morris, O. J., Wiese, A. D., Pinciotti, C. M., Pacheco, R., Martinez Mallen, M. C., Schweissing, E. J., Soileau, K. J., Members of the Latin American Trans-ancestry Initiative for OCD genomics (LATINO), Brazilian Obsessive-Compulsive Spectrum Work Group (GITOC), Crowley, J. J., & Storch, E. A. (2024). Obsessive compulsive disorder among individuals of Hispanic and Latin American ancestry: Cultural considerations for assessment and psychotherapy. *Bulletin of the Menninger Clinic*, 88(2), 148–170. <https://doi.org/10.1521/bumc.2024.88.2.148>
- Ojalehto, H. J., Pinciotti, C. M., Hellberg, S. N., Myers, N. S., DuBois, C. M., Rodriguez, C. S., & Abramowitz, J. S. (2023). Obsessive-compulsive symptom profiles vary by index trauma type in a trauma-exposed community sample. *Journal of Obsessive-Compulsive and Related Disorders*, 38, Article 100827. <https://doi.org/10.1016/j.jocrd.2023.100827>
- Ojserkis, R., Boisseau, C. L., Reddy, M. K., Mancebo, M. C., Eisen, J. L., & Rasmussen, S. A. (2017). The impact of lifetime PTSD on the seven-year course and clinical characteristics of OCD. *Psychiatry Research*, 258, 78–82. <https://doi.org/10.1016/j.psychres.2017.09.042>

- Osório, F. L., Loureiro, S. R., Hallak, J. E. C., Machado-de-Sousa, J. P., Ushirohira, J. M., Baes, C. V. W., Apolinario, T. D., Donadon, M. F., Bolsoni, L. M., Guimarães, T., Fracon, V. S., Silva-Rodrigues, A. P. C., Pizeta, F. A., Souza, R. M., Sanches, R. F., Dos Santos, R. G., Martin-Santos, R., & Crippa, J. A. S. (2019). Clinical validity and intrarater and test-retest reliability of the structured clinical interview for DSM-5 – Clinician version (SCID-5-CV). *Psychiatry and Clinical Neuroscience*, 73(12), 754–760. <https://doi.org/10.1111/pcn.12931>
- Pinciotti, C. M. (2023). Adapting and integrating exposure therapies for obsessive-compulsive disorder and posttraumatic stress disorder: Translating research into clinical implementation. *Clinical Psychology: Science and Practice*, 30(2), 190–203. <https://doi.org/10.1037/cps0000143>
- Pinciotti, C. M. (2025). Development and initial validation of the post-traumatic obsessive-compulsive scale (P-TOCS): A differential diagnostic and conceptualization measure. *Traumatology*. <https://doi.org/10.1037/trm0000580>. Advance online publication.
- Crowley, J.J., Cappi, C., Ochoa-Panaifo, M.E., Frederick, R.M., Kook, M., Wiese, A.D., Rancourt, D., Atkinson, E.G., Giusti-Rodriguez, P., Anderberg, J.L., Latin American Trans-ancestry INitiative for OCD genomics, Brazilian Obsessive-Compulsive Spectrum Disorder Working Group, Abramowitz, J.S., Adorno, V.R., Aguirre, C., Alves, G.S., Alves, G.S., Ancalade, N., Arellano Espinosa, A.A., Arnold, P.D., ... Storch, E.A. (2024). Latin American Trans-ancestry INitiative for OCD genomics (LATINO): Study protocol. *American journal of medical genetics. Part B, Neuropsychiatric genetics : the official publication of the International Society of Psychiatric Genetics*, 195(4), e32962. <https://doi.org/10.1002/ajmg.b.32962>
- Pinciotti, C. M., Avery, J., Zhang, C. C., Muñoz, J. S., Berrones, D., Zavala Cruz, V., Wiese, A. D., Anderberg, J. L., Frederick, R. M., Miño, T., Lanzagorta, N., Restrepo Castro, J. C., Ochoa-Panaifo, M. E., Latin American Trans-ancestry INitiative for OCD genomics (LATINO), Brazilian Obsessive-Compulsive Spectrum Work Group (GTTOC), Goodman, W. K., Crowley, J. J., Storch, E. A., & Cervin, M. 2026. Benchmarking empirical severity for the yale-brown obsessive compulsive scale-second edition. *Journal of Affective Disorders*.
- Pinciotti, C. M., Bulkes, N. Z., Bailey, B. E., Storch, E. A., Abramowitz, J. S., Fontenelle, L. F., & Riemann, B. C. (2023). Common rituals in obsessive-compulsive disorder and implications for treatment: A mixed methods study. *Psychological Assessment*, 35(9), 763–777. <https://doi.org/10.1037/pas0001254>
- Pinciotti, C. M., & Fisher, E. K. (2022). Perceived traumatic and stressful etiology of obsessive-compulsive disorder. *Psychiatry Research Communications*, 2(2), Article 100044. <https://doi.org/10.1016/j.psymcom.2022.100044>
- Pinciotti, C. M., & Orcutt, H. K. (2020). Common symptom presentations in individuals with probable comorbid obsessive-compulsive disorder and posttraumatic stress disorder. *The Journal of Nervous and Mental Disease*, 208(10), 777–784. <https://doi.org/10.1097/NMD.0000000000001211>
- Pinciotti, C. M., Riemann, B. C., & Wetterneck, C. T. (2021). Trauma type and obsessive-compulsive symptom domains: The unique relationship between indirectly experienced trauma and just right symptoms. *Journal of Obsessive-Compulsive and Related Disorders*, 29, Article 100624. <https://doi.org/10.1016/j.jocrd.2021.100624>
- Pinciotti, C. M., Van Kirk, N., Horvath, G., Storch, E. A., Mancebo, M. C., Abramowitz, J. S., Fontenelle, L. F., Goodman, W. K., Riemann, B. C., & Cervin, M. (2024). Co-occurring PTSD in intensive OCD treatment: Impact on treatment trajectory vs. response. *Journal of Affective Disorders*, 353, 109–116. <https://doi.org/10.1016/j.jad.2024.03.004>
- Pinciotti, C. M., Wadsworth, L. P., Ayton, D., Fontenelle, L. F., & Van Kirk, N. (2025). Co-occurring obsessive-compulsive and posttraumatic stress symptoms: Characteristics and risk factors of dynamic and static presentations in trauma-exposed individuals. *Traumatology*. <https://doi.org/10.1037/trm0000569>. Advance online publication.
- Pinciotti, C. M., Wetterneck, C. T., & Riemann, B. C. (2022). Symptom severity and presentation in comorbid OCD and PTSD: A clinical replication. *Bulletin of the Menninger Clinic*, 86(3), 183–203. <https://doi.org/10.1521/bumc.2022.86.3.183>
- Richardson, J. T. (2011). Eta squared and partial eta squared as measures of effect size in educational research. *Educational Research Review*, 6(2), 135–147. <https://doi.org/10.1016/j.edurev.2010.12.001>
- Sheehan, D. V., Lecrubier, Y., Sheehan, K. H., Amorim, P., Janavs, J., Weiller, E., Hergueta, T., Baker, R., & Dunbar, G. C. (1998). The mini-international neuropsychiatric interview (M.I.N.I.): The development and validation of a structured diagnostic psychiatric interview for DSM-IV and ICD-10. *The Journal of Clinical Psychiatry*, 59(Suppl 20), 22–33. quiz 34–57 <https://www.ncbi.nlm.nih.gov/pubmed/9881538>.
- Sibrava, N. J., Bjornsson, A. S., Pérez Benítez, A. C. I., Moitra, E., Weisberg, R. B., & Keller, M. B. (2019). Posttraumatic stress disorder in African American and Latinx adults: Clinical course and the role of racial and ethnic discrimination. *American Psychologist*, 74(1), 101–116. <https://doi.org/10.1037/amp0000339>
- Stevanovic, D. (2011). Quality of life enjoyment and satisfaction questionnaire – Short form for quality-of-life assessments in clinical practice: A psychometric study. *Journal of Psychiatric and Mental Health Nursing*, 18(8), 744–750. <https://doi.org/10.1111/j.1365-2850.2011.01735.x>
- Storch, E. A., Cheng, J. S., Higham, M., Muñoz, J. S., Zavala Cruz, V., Berrones, D., Obando, D. P., Anderberg, J. L., Frederick, R. M., Tapia-Cuevas, V., Churrucá Muñoz, M., Uribe Villar, C., Moya, P. R., Ochoa-Panaifo, M. E., Martínez Mallen, M. C., Wiese, A. D., Pinciotti, C. M., Sagarnaga, M. N., McGuire, J. F., Onyeka, O. C., Moyano, M. B., Latin American Trans-Ancestry INitiative for OCD genomics (LATINO), Brazilian Obsessive-Compulsive Spectrum Disorder Working Group (GTTOC), Goodman, W. K., & Crowley, J. J. 2026. Psychometric properties of the Spanish yale-brown obsessive-compulsive scale – 2nd ed. *Psychiatry Research*.
- Storch, E. A., Rasmussen, S. A., Price, L. H., Larson, M. J., Murphy, T. K., & Goodman, W. K. (2010). Development and psychometric evaluation of the yale-brown obsessive-compulsive Scale–Second edition. *Psychological Assessment*, 22(2), 223–232. <https://doi.org/10.1037/a0018492>
- Taylor, S., & Jang, K. L. (2011). Biopsychosocial etiology of obsessions and compulsions: An integrated behavioral-genetic and cognitive-behavioral analysis. *Journal of Abnormal Psychology*, 120(1), 174–186. <https://doi.org/10.1037/a0021403>
- Tibi, L., Van Oppen, P., Van Balkom, A. J. L. M., Eikelenboom, M., Hendriks, G.-J., & Anholt, G. E. (2020). Childhood trauma and attachment style predict the four-year course of obsessive compulsive disorder: Findings from the Netherlands obsessive compulsive disorder study. *Journal of Affective Disorders*, 264, 206–214. <https://doi.org/10.1016/j.jad.2019.12.028>
- Torres, A. R., Fontenelle, L. F., Shavitt, R. G., Ferrão, Y. A., do Rosário, M. C., Storch, E. A., & Miguel, E. C. (2016). Comorbidity variation in patients with obsessive-compulsive disorder according to symptom dimensions: Results from a large multicentre clinical sample. *Journal of Affective Disorders*, 190, 508–516. <https://doi.org/10.1016/j.jad.2015.10.051>
- Tramonti, F., Giorgi, F., & Fanali, A. (2021). Systems thinking and the biopsychosocial approach: A multilevel framework for patient-centred care. *Systems Research and Behavioral Science*, 38(2), 215–230. <https://doi.org/10.1002/sres.2725>
- Wetterneck, C. T., Little, T. E., Rinehart, K. L., Cervantes, M. E., Hyde, E., & Williams, M. (2012). Latinos with obsessive-compulsive disorder: Mental healthcare utilization and inclusion in clinical trials. *Journal of Obsessive-Compulsive and Related Disorders*, 1(2), 85–97. <https://doi.org/10.1016/j.jocrd.2011.12.001>
- Wheaton, M. G., Gershkovich, M., Gallagher, T., Foa, E. B., & Simpson, H. B. (2018). Behavioral avoidance predicts treatment outcome with exposure and response prevention for obsessive-compulsive disorder. *Depression and Anxiety*, 35(3), 256–263. <https://doi.org/10.1002/da.22720>
- Williams, M. T., Chapman, L. K., Simms, J. V., & Tellawi, G. (2017). Cross-cultural phenomenology of obsessive-compulsive disorder. In J. S. Abramowitz, D. McKay, & E. A. Storch (Eds.), *The wiley handbook of obsessive compulsive disorders* (1st ed., pp. 56–74). Wiley. <https://doi.org/10.1002/9781118890233.ch4>
- Williams, M., Powers, M., Yun, Y.-G., & Foa, E. (2010). Minority participation in randomized controlled trials for obsessive-compulsive disorder. *Journal of Anxiety Disorders*, 24(2), 171–177.