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Research Article

Stigmatization Of Patients With Obsessive-Compulsive Disorder: An Exploratory Survey.

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Abstract

Background: Historically, people with psychiatric disorders or overt psychopathological manifestations have been a constant target of stigma, defined as an adverse social judgment about a person or group. One possible manifestation of stigma is internalized stigma (IS) or self-stigma, i.e., the stigma people experience about their own condition. The relationship between obsessive-compulsive disorder (OCD) and IS remains poorly understood. This exploratory study aimed to evaluate potential associations between stigma, IS, and OCD.
Methods: 83 participants with OCD completed self-report measures on experiences of discrimination, IS, and perceived stigma resulting from OCD. Data was collected through the secure online Research Electronic Data Capture (REDCAP) platform.
Results: IS showed a direct and moderate correlation with the severity of OCD symptoms, the Aggression and Symmetry dimensions, the presence of sensory phenomena, and anxiety. Depression showed a direct, moderate-to-strong correlation with IS. An active sex life was inversely proportional to IS. Family history of OCD, age of onset, disease duration, and the Stigma Resistance construct were not associated with the variables of interest.
Conclusion: We conclude that IS appears to influence the presentation of OCD. In this study, depression was the strongest predictor of IS.

Keywords : *Stigmatization; Obsessive-Compulsive Disorder; Exclusion, Social; Perceived Discrimination.*

INTRODUCTION

Obsessive-compulsive disorder (OCD) is a heterogeneous, multifaceted, and complex condition [1]. Stigma appears to be one of the barriers that can influence a certain delay in starting treatment, although there is no evidence to substantiate this hypothesis. Poyraz described that treatment delay can affect up to 12.5% of patients [2].

OCD may be divided into subtypes based on symptom content or theme [3], e.g., 1. aggression, violence, and natural disasters; 2. Sexual, moral, and religious obsessions; 3. symmetry, organization ("just right"), and ordering/arrangement; 4. Contamination and cleaning/washing; and 5. hoarding. Many patients with OCD experience nonspecific unpleasant feelings, urges, or physical/bodily sensations before or during their performance of repetitive behaviors (compulsions). Such subjective experiences are called sensory phenomena and occur with varying levels of severity [4–6]. Thus, depending on its psychopathological presentation, OCD can expose the sufferer to varying degrees of stigmatization. According to Weiss et al, stigma can be defined as "a social process, experienced or anticipated, characterized by exclusion, rejection, blame or devaluation that results from experience or reasonable anticipation of an adverse social judgment about a person or group" [7]. One of the manifestations of stigma is discrimination, i.e., the behavior of treating members of one group in a disparaging manner in relation to another. Realizing that one is a victim of discrimination is a stressful event [8] and the more a subject realizes that they have been discriminated against, the greater their tendency to develop potentially pathological manifestations [9] or increased physical reactivity to stressful social situations [10].

Although many people with OCD do not report experiencing

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stigma, all agree that they tend to hide the presence of symptoms, which can result in what is known as Internalized Stigma (IS) [11].

IS, or self-stigma, can thus be conceptualized as a subjective process characterized by negative feelings directed against oneself, internalizing the three pillars of stigma – stereotypes, prejudice, and discrimination – and turning them against oneself (self-sereotyping, self-prejudice, and self-discrimination). Therefore, IS is stigmatization similar to that coming from others, but originating from oneself [12].

Several instruments have been developed to assess IS; the Internalized Stigma of Mental Illness (ISMI) scale is among those most widely used and validated internationally [13]. The scale consists of 29 randomly distributed items divided into five IS constructs: Alienation (6 items), Stereotype Endorsement (7 items), Perceived Discrimination (5 items), Social Withdrawal (6 items), and Stigma Resistance (5 items) [14]. The concepts involved in stigma and IS have not yet been adequately studied when it comes to OCD.

Within this context, the objective of this study was to establish the relationship between concepts related to OCD and IS. We also sought to evaluate associations between IS and clinical characteristics of OCD, such as disease severity, symptom content dimensions, the occurrence and severity of sensory phenomena, and associated psychiatric symptoms (anxiety, depression).

Our main hypotheses were that there would be associations between IS and OCD, especially with symptom dimensions related to aggression and sex/religion, as these dimensions – which together are known as "taboo thoughts" – tend to lead to greater discomfort and embarrassment among patients [15].

MATERIAL AND METHODS

Design and procedures

This cross-sectional, exploratory study evaluated a population of 83 adults with a DSM-V diagnosis of OCD [16]. Participants were recruited from several states in Brazil, and 38 (45.8%) were female. Both recruitment and data collection took place between 2021 and 2022, fully online, through the Research Electronic Data Capture (REDCAP) platform [17].

REDCAP (https://www.redcapbrasil.com.br/) was developed by Vanderbilt University for collaborative data collection and management. It is free software, but requires institutional registration, which in this case was provided by the project sponsor, UFCSPA (https://redcap.ufcspa.edu.br/). The REDCAP platform enables a generation of self-report questionnaires that can be accessed securely and directly by respondents through a Web link or QR code [17].

Due to restrictions imposed by the COVID-19 pandemic during the data collection period, the study was publicized on social media (including Facebook, Instagram, and WhatsApp) and via email, through an electronic press kit containing an access link for prospective participants. This strategy eliminated any risk of coronavirus exposure for both researchers and participants. All respondents signed an Informed Consent Form (ICF) before completing any of the questionnaires and instruments. Invitations were sent by professionals registered with Associação Solidária de TOC e Síndrome de Tourette (ASTOC, https://www.astocst.com.br/, a nongovernmental organization) and psychiatry interest groups across several Brazilian medical schools. Furthermore, snowball sampling (a non-probabilistic method whereby a participant invites other persons they know with the same diagnosis to take part in the study) was also used.

The OCD screener was self-completed and consisted of the following items: a) "I have OCD diagnosed by a psychiatrist or psychologist"; b) "I have OCD, but I wasn't diagnosed by a psychiatrist or psychologist"; or c) "I don't have OCD". All participants were allowed to complete the questionnaires, but only those who answered "a" on the screener were considered for purposes of analysis. The inclusion criteria were age over 18 years, ability to read and write, legal competence to complete the questionnaires, and provision of written informed consent. The exclusion criteria were failure to consent to participate in the study, participants with active psychotic symptoms during the interview period, dementia or intellectual deficit, which impairs understanding of the questions, being under the influence of psychoactive substances while filling out the questionnaires.

Assessment instruments

The self-report assessment instruments, all administered through REDCAP, are described in brief below.

- Rede Gaúcha de Pesquisa em TOC (ReTOC) sociodemographic data questionnaire: Designed to collect sociodemographic data: sex, age, weight, height, marital status, occupation, religiosity, educational attainment (measured in years of schooling completed), ethnicity, socioeconomic classification (per the Brazilian Association of Research Companies criteria), and occupational history.
- Yale-Brown Obsessive-Compulsive Scale (Y-BOCS): designed to assess the severity of OCD obsessions and compulsions; consists of 10 items ranging from 0 (no symptoms) to 4 (extreme severity), for a maximum score of 40 (20 for obsessions and 20 for compulsions) [18,19].
- Dimensional Yale-Brown Obsessive-Compulsive Scale (DY-BOCS): an 88-item scale used to test for the presence and severity of six dimensions of OCD symptoms: harm/aggression, sexual/religious, contamination/cleaning, symmetry, collecting/hoarding, and miscellaneous. The clinical severity of each dimension (both currently and during the respondent's worst phase) is assessed in terms of frequency, distress, and interference, with a maximum score of 15.5 for each aspect. It also provides for assessment of the overall severity of OCD, which ranges from 0 to 15 for

symptoms and from 0 to 15 for the impairment they cause, with a total overall score ranging from 0 to 30 [3].

- University of São Paulo Sensory Phenomena Scale (USP-SPS) – assesses the presence and severity of sensory phenomena (SP) that precede or accompany compulsive symptoms. Sensory phenomena include bodily sensations (usually tactile, muscular, or skeletal-visceral) and mental sensations (e.g., discomfort, urge to release an "energy", a feeling of incompleteness, or not feeling "just right"). Current and past scores range from 0 to 15, with higher scores indicating more severe SP. This variable was analyzed both as categorical (presence/absence of SP) and quantitative (severity of SP) [20].
- Beck Depression Inventory (BDI II), Portuguese Version: assesses the presence and severity of depressive symptoms. The BDI consists of 21 items that investigate symptoms and attitudes related to depressive disorders, with intensity ranging from 0 to 3 (maximum score: 63). Symptoms are graded as absent or minimal (score 0 to 9), mild (10–18), moderate (19–29), or severe symptoms (30–63) [21].
- Beck Anxiety Inventory (BAI): assesses the presence and severity of anxious symptoms. It also consists of 21 items scored from 0 to 3 (maximum: 63). Each item describes subjective, somatic, or panic-related anxiety symptoms in the previous week [22].
- Internalized Stigma of Mental Illness (ISMI) [14]: translated into Portuguese and validated psychometrically in the Brazilian population [23]. This scale is a measure of the internalization of social stigma related to mental illness. It is composed of 29 items assessing 5 constructs of IS: Alienation, Stereotype Endorsement, Perceived Discrimination, Social Withdrawal, and Stigma Resistance. Alienation concerns the subjective feeling of inferiority or not belonging in relation to society. Stereotype Endorsement measures the degree to which the respondent agrees with, or sanctions, stereotypes related to their illness. Perceived Discrimination assesses the respondent's perception of being treated differently. Social Withdrawal assesses the way an individual behaves socially, with emphasis on avoidant behaviors. Finally, Stigma Resistance demonstrates the respondent's ability to not internalize stigma but rather counter the imposition of stereotypes related to their mental illness [24]. Thus, among the IS sub-scores of the scale, Stigma Resistance is the only construct that opposes negative stereotypes of mental illness.
- Structured Clinical Interview for DSM 5 Axis I Disorders, Patient Edition (SCID I/P): The SCID was used to screen for comorbidities and confirm the diagnosis of OCD. This widely used, semi-structured interview is considered the gold standard for evaluating Axis I psychiatric diagnoses against the DSM-5 criteria [16].

Ethical aspects

The Federal University of Health Sciences of Porto Alegre (UFCSPA) Research Ethics Committee approved the study protocol on April 27, 2021 (opinion no. 2104036), in compliance with National Health Council (CNS) Resolution 466/2012. All participants signed up for the ICF online, via the REDCAP platform. Participants were informed that they could discontinue their participation at any time. We believe the circumstances imposed by the pandemic required extraordinary sensitivity towards the participants, especially because they constitute a vulnerable population due to their psychiatric diagnosis. Once all questionnaires were completed, participants were shown their scores. The authors took measures to ensure the secure storage and confidentiality of the collected data and safeguard the anonymity of all participants. This study was conducted in accordance with the Declaration of Helsinki.

Statistical analysis

Categorical variables were expressed as absolute (n) and relative (%) frequencies. Continuous variables were described as means (μ) and standard deviations (SD) or medians (Md) and ranges (min-max), depending on their normality of distribution, as assessed by the Kolmogorov–Smirnov test.

To calculate the prevalence of IS, we divided the sample into quartiles and agreed that individuals with a total score below the 25th percentile (lowest quartile) would be defined as not having IS, whereas values between the 25th and 75th percentiles (second and third quartiles) would denote "subclinical IS" and scores above the 75th percentile (top quartile) would represent "clinical IS". The same reasoning was applied to IS severity sub-scores.

Univariate exploratory analysis

Spearman's rank correlation test was used to test for correlation between ISMI scores/sub-scores and the scores/sub-scores of the obsessive-compulsive symptom scales. Student's t-test was used for comparison of mean ISMI scores and sub-scores between groups. The significance level was set at 5%.

Multiple linear regression (MLR)

After univariate analysis, 2 MLR models were run to predict the influence of independent variables on IS. Both MLR models included only those variables that achieved statistical significance ($p<0.05$) on univariate analysis.

Cronbach coefficient α was calculated for the correlations.

RESULTS

Sociodemographic profile of the sample

Of the 186 individuals who registered via REDCAP, 178 (96.7%) agreed to participate. Of these, 26 (14.0%) claimed not to have OCD and 11 (5.9%) claimed to have OCD, but not diagnosed by a psychiatrist or psychologist; 58 others (31.2%) did not complete the questionnaires, even after three or

more attempts at contact, and were thus excluded. Therefore, 83 participants (44.6%) were included in the analysis. Of these, 38 (45.7%) were randomly selected for confirmation of OCD diagnosis through the Structured Clinical Interview for DSM-5 [16]. All had their diagnoses confirmed.

The sociodemographic characteristics of participants are described in **Table 1**. The profile of the sample was predominantly male, heterosexual, single but in a current sexual relationship, employed, and self-identifying as white.

Table 1. Sociodemographic profile of the sample.

Variable	**n**	**%**
Male gender	45	54.2
Sexual orientation		
- Heterosexual	67	80.7
- Homosexual	7	8.4
- Bisexual	8	9.6
- Other	1	1.2
Marital status		
- Single	48	57.8
- Married	29	34.9
- Divorced	4	4.8
- Widowed	2	2.4
No current sexual partner	37	44.6
Not sexually active	25	30.1
Lives alone	4	4.8
No religion	15	18.1
Does not practice religion	19	22.9
Occupation*		
- Employed	49	59.0
- Student	28	33.7
- Homemaker	3	3.6
- Unemployed	11	13.3
- Retired	2	2.4
- On disability	4	4.8
Self-declared white	72	86.7
Socioeconomic class (ABEP)		
- C1	7	8.4
- C2	22	26.5
- D/E	54	65.1
	Mean	**Standard deviation**
Age	33.93	10.25
Number of persons in household (n=79)	2.39	1.06
Years of schooling	16.08	7.10
Number of children (n=44)	1.36	0.65
	Median	**(Min-Max)**
Years of work experience (n=64)	11	(1-42)
Personal income** (n=66)	925.00	(0.0–20,000.00)
Household income** (n=53)	9,000.00	(0.0–40,000.00)

Legend: *Some respondents have more than one occupation. **- Expressed in Brazilian Reais (in August 2024 1 Euro = 6.03 Reais); n = absolute values; % = relative values; ABEP C1, C2, D/E = Brazilian Association of Research Companies Economic Classification Criteria.

Prevalence and manifestations of internalized stigma in patients with OCD

Of the 83 respondents, 23 (27.7%) had ISMI scores below 55 and were thus considered to have no IS, 39 (47.0%) had a score between 55 and 75 and were considered to have “subclinical” IS, and 21 (25.3%) had an IS score above 75, denoting “clinical” IS per our classification. Results for the IS constructs are shown in **Table 2**.

Table 2. Internalized Stigma Scores and their sub-scores in patients with obsessive-compulsive disorder (n=83).

	Mean (SD)	Median (Min-Max)	Internalized Stigma Score		
			Under quartile 25% ("Absent") n (%)	Between quartiles 25 and 75% ("Subclinical") n (%)	Above quartile 75% ("Clinical") n (%)
Alienation	15.46 (5.26)	16 (6-24)	Score <12 21 (25.3)	12≤ score <20 40 (48.2)	Score ≥20 22 (26.5)
Stereotype Endorsement	11.12 (3.24)	11 (6-19)	Score <10 28 (33.7)	10≤ score <13 31 (37.4)	Score ≥13 24 (28.9)
Perceived Discrimination	9.53 (3.80)	9 (5-19)	Score <7 21 (25.3)	7≤ score <13 41 (49.4)	Score ≥13 21 (25.3)
Social Withdrawal	11.76 (4.15)	11 (6-22)	Score <10 28 (33.7)	10≤ score <15 32 (38.6)	Score ≥15 23 (27.7)
Stigma Resistance	15.06 (2.59)	15 (5-19)	Score <15 33 (39.8)	15≤ score <17 24 (28.9)	Score ≥17 26 (31.3)
Internalized Stigma	62.94 (14.55)	64 (29-96)	Score <55 23 (27.7)	55≤ score <75 39 (47.0)	Score ≥75 21 (25.3)

Legend: n= absolute values; SD= standard deviation; % = relative values; below 25% quartile = bottom ¼ of percentile; 25-75% quartile = second and third ¼ of percentile; above 75% quartile = top ¼ of percentile.

Association of internalized stigma with clinical characteristics of obsessive-compulsive disorder

Internalized stigma and severity of obsessive-compulsive symptoms

The association of IS scores and sub-scores with the severity of obsessions, compulsions, and total Y-BOCS scores, as well as the severity of the DY-BOCS symptom dimensions, are described in **Table 3**.

Table 3. Correlations of the Internalized Stigma scale scores and sub-scores with obsessive-compulsive symptom severity scores and sub-scores, according to the Y-BOCS, and DY-BOCS symptom dimensions.

	Internalized Stigma rSpearman (p)	Alienation rSpearman (p)	Stereotype Endorsement rSpearman (p)	Perceived Discrimination rSpearman (p)	Social Withdrawal rSpearman (p)	Stigma Resistance rSpearman (p)	Cronbach α
Obsessions	0.46**	0.47**	0.35**	0.46**	0.44**	-0.17 (0.129)	0.39
Compulsions	0.45**	0.41**	0.38**	0.46**	0.44**	-0.21 (0.058)	0.39
YBOCS total score	0.47**	0.45**	0.38**	0.48**	0.46**	-0.19 (0.083)	0.41
Dim.:Aggressiveness	0.47**	0.40**	0.31*	0.54**	0.41**	-0.09 (0.419)	0.37
Dim.: Sexual/Religious	0.30*	0.25*	0.25*	0.35**	0.27*	0.00 (0.974)	0.24
Dim.: Symmetry	0.30*	0.23*	0.40**	0.34*	0.29*	-0.24*	0.30
Dim.: Contamination	0.23*	0.20 (0.077)	0.29*	0.20*	0.26*	-0.13 (0.245)	0.22
Dim.: Hoarding	0.20 (0.067)	0.16 (0.161)	0.31*	0.28*	0.14 (0.198)	-0.22*	0.22

Legend: rSpearman = Spearman correlation; p=statistical significance; Cronbach α: Cronbach coefficient α; YBOCS: Yale-Brown Obsessive Compulsive Scale; DY-BOCS=Dimensional Yale-Brown Obsessive Compulsive Scale; Dim = Dimension; *p-value <0.05; **p-value <0.001.

IS (as evaluated through all ISMI sub-scores) had a direct, moderate correlation with the severity of obsessive symptoms (rSpearman = 0.46; $p < 0.001$) and compulsive symptoms (rSpearman = 0.44; $p < 0.001$), with individual direct, moderate correlations with the Alienation, Stereotype Endorsement, Perceived Discrimination, and Social Withdrawal sub-scores. There was no statistically significant association between the severity of obsessive-compulsive symptoms and the Stigma Resistance sub-score.

More specifically in relation to the types of OCD symptoms, IS and the severity of the aggressive content dimension in DY-BOCS showed a direct, moderate correlation (rSpearman = 0.47; $p < 0.001$), mainly due to Alienation, Stereotype Endorsement, Perceived Discrimination, and Social Withdrawal sub-scores. The Symmetry dimension was associated with Stereotype

Endorsement and Perceived Discrimination (rSpearman = 0.30; p = 0.006). The other dimensions showed only weak associations with IS, as shown in table 3. The Stigma Resistance construct did not show any association with the DY-BOCS symptom dimensions.

Internalized stigma and presence of specific obsessive-compulsive symptom contents

The presence or absence of certain obsessive-compulsive symptom contents, according to the DY-BOCS, allowed the comparison of IS construct scores within each symptom dimension. The results of this analysis are described in **Table 4**.

Participants who endorsed the Aggressive content dimension of DY-BOCS showed higher scores in Alienation, Perceived Discrimination, and Internalized Stigma subscales. Patients with Symmetry/Organization symptoms had higher Stereotype Endorsement scores.

Table 4. Comparison of Internalized Stigma scores and sub-scores according to the content of obsessive-compulsive symptoms (DY-BOCS).

	Aggressiveness			Sexual/religious			Symmetry			Contamination			Hoarding		
	+	-	t Student (p)	+	-	t Student (p)	+	-	t Student (p)	+	-	t Student (p)	+	-	t Student (p)
	μ (SD)	μ (SD)		μ (SD)	μ (SD)	(p)	μ (SD)	μ (SD)		μ (SD)	μ (SD)	(p)	μ (SD)	μ (SD)	
Internalized Stigma	65.49 (1.88)	56.47 (2.98)	-2.27 (0.03)	65.35 (1.95)	58.94 (3.41)	-1.62 (0.11)	65.16 (1.82)	55.22 (3.91)	-1.99 (0.05)	64.62 (2.18)	60.24 (2.55)	-1.168 (0.25)	66.50 (3.37)	62.87 (2.12)	-0.96 (0.34)
Alienation	16.47 (0.66)	13.27 (1.35)	2.21 -0.03	16.20 (0.68)	14.00 (1.39)	-1.52 (0.13)	16.11 (0.65)	13.44 (1.74)	-1.45 (0.15)	15.96 (0.76)	15.00 (1.09)	-0.70 (0.49)	16.77 (1.14)	15.56 (0.79)	-0.90 (0.37)
Stereotype Endorsement	11.49 (0.44)	10.40 (0.62)	-1.19 (0.02)	11.78 (0.46)	10.63 (0.71)	-1.27 (0.21)	11.77 (0.40)	9.56 (0.69)	-2.06 (0.04)	11.64 (0.45)	10.57 (0.64)	-1.32 (0.19)	12.62 (0.72)	10.74 (0.46)	-2.31 (0.02)
Perceived Discrimination	10.11 (0.51)	7.47 (0.52)	-3.63 (0.001)	10.10 (0.55)	8.50 (0.78)	-1.49 (0.14)	10.11 (0.48)	7.67 (1.03)	-1.86 (0.07)	9.78 (0.56)	8.67 (0.69)	-1.141 (0.26)	11.00 (0.90)	9.03 (0.54)	-1.89 (0.07)
Social Withdrawal	12.40 (0.55)	10.67 (0.89)	-1.5 (0.14)	12.31 (0.59)	10.63 (0.82)	-1.46 (0.15)	12.34 (0.53)	9.89 (0.99)	-1.71 (0.09)	12.34 (0.59)	10.71 (0.86)	-1.53 (0.13)	12.39 (0.91)	11.92 (0.68)	-0.43 (0.68)
Stigma Resistance	15.00 (0.36)	14.67 (0.54)	-0.44 (0.66)	14.96 (0.34)	15.19 (0.54)	0.33 (0.74)	14.81 (0.34)	14.67 (0.62)	-0.15 (0.88)	14.88 (0.38)	15.29 (0.53)	0.60 (0.56)	13.69 (0.61)	15.62 (0.33)	2.80 (0.01)

Legend: "+"=Present; "-" =Absent; DY-BOCS= Dimensional Yale-Brown Obsessive-Compulsive Scale; μ = mean; SD= standard deviation; tStudent = Student's t-test; p = level of statistical significance. A direct, moderate association exists between the presence of sensory phenomena (SP) and IS and its sub-scores.

Internalized stigma and the presence of sensory phenomena

Our findings demonstrate a direct, moderate correlation between the presence of SP and IS scores and sub-scores. As shown in **Table 5**, the presence of SP was associated with worse IS scores. The Stigma Resistance sub-score was not associated with the presence of SP.

Table 5. Comparison of means of Internalized Stigma scores and sub-scores according to the presence of sensory phenomena in patients with obsessive-compulsive disorder.

	Sensory Phenomena (n=58)		No Sensory Phenomena (n=25)		tStudent (p-value)
	μ	SD	μ	SD	
Internalized Stigma	66.40	1.85	54.92	2.51	-3.52 (0.001)
Alienation	16.31	0.65	13.48	1.10	-2.31 (0.024)
Stereotype Endorsement	11.98	0.43	9.12	0.43	-4.71 (<0.001)
Perceived Discrimination	10.35	0.51	7.64	0.57	-3.55 (0.001)
Social Withdrawal	12.67	0.54	9.64	0.71	-3.23 (0.002)
Stigma Resistance	15.09	0.31	15.00	0.62	-0.14 (0.890)

Legend: n= sample size; μ = mean; SD= standard deviation; tStudent = Student's t test; p= level of statistical significance.

Internalized stigma and severity of depression and anxiety symptoms

Table 6 highlights the association between IS scores and the severity of depression and anxiety symptoms, as measured by the Beck scales (BDI II and BAI). In the sample, the severity of depressive symptoms showed a direct, moderate-to-strong correlation with IS and its constructs, except Stigma Resistance. Anxiety symptoms, in turn, correlated directly and moderately with IS and its sub-scores.

Table 6. Association between IS scores and their sub-scores and Depression and Anxiety scores in patients with OCD.

	Internalized Stigma rSpearman (p)	Alienation rSpearman (p)	Stereotype Endorsement rSpearman (p)	Perceived Discrimination rSpearman (p)	Social Withdrawal rSpearman (p)	Stigma Resistance rSpearman (p)	Cronbach α
BDI II	0.71(<0.001)	0.64 (<0.001)	0.64(<0.001)	0.64(<0.001)	0.67(<0.001)	-0.24 (0.032)	0.59
BAI	0.53(<0.001)	0.43 (<0.001)	0.47(<0.001)	0.50(<0.001)	0.57(<0.001)	-0.21 (0.062)	0.45

Legend: BDI-II: Beck Depression Inventory, Second Edition; BAI: Beck Anxiety Inventory; rSpearman = Spearman correlation; p = level of statistical significance.

Multiple linear regression (MLR) models

- Model 1: Prediction of internalized prejudice (Internalized Stigma of Mental Illness). Prediction of the internalized stigma of mental illness by the severity of obsessive/compulsive symptoms (YBOCS total score), sensory phenomena (USP-SPS), and depression (BDI-II) and anxiety (BAI) symptoms. The correlations between these variables were not high (all below 0.8). There was no collinearity between these variables (variance inflation factors [VIFs] of 1.63, 1.51, 2.56, and 2.22, respectively, i.e., all below 10). Testing detected no autocorrelation in the residuals (Durbin–Watson statistic = 2.131), i.e., the residuals were independent. Z-scores ranged between -3 and 3, denoting the absence of outliers. Histogram and P-P plot analysis of the dataset suggested that the residuals were normally distributed. A scatter plot showed homogeneity of variances.

The OCD severity score measured by the Y-BOCS predicts 22.2% of variance in the IS score; the severities of OCD and Sensory Phenomena explained 26.6% of variance in IS; and the severities of OCD, Sensory Phenomena, and Depression explained 48.6% of this variance. Model 4 (severities of OCD [Y-BOCS], SP [USP-SPS], depressive symptoms [BDI II], and anxiety symptoms [BAI]) did not add significantly to IS variance when compared to Model 3; in other words, anxiety symptoms do not seem to influence the severity of IS.

Table 7. MLR 1 – Severity of general symptoms (obsessive-compulsive symptoms, sensory phenomena, symptoms of depression and anxiety).

	Obssessive/Compulsive Symptoms (Y-BOCS)	Sensory Phenomena (USP-SPS)	Symptoms of depression (BDI-II)	Anxiety (BAI)
B	0.106	0.106	0.577	0.014
t	1.024	0.788	4.445	0.119
p	0.309	0.433	<0.001	0.905

Legend: β: regression coefficient, t: statistical test , p: level of statistical significance.

This relationship can be described by the following equation:
y = bo + b1.x1, or IS score = 46,365 + 0.603 (BDI-II score)
MLR 2 – Severity of specific obsessive-compulsive symptoms

- Model 2: Prediction of internalized stigma of mental illness by the severity of the content dimensions of obsessive-compulsive symptoms according to DY-BOCS (Aggression, Sexual/Religious, Symmetry, Contamination, and Hoarding). The correlations between these variables were not high (all below 0.8). There was no collinearity between these variables (variance inflation factors [VIFs] of 1.43, 1.36, 2.01, and 1.81, respectively, i.e., all below 10). Testing detected no autocorrelation in the residuals (Durbin–Watson statistic = 1.847), i.e., the residuals were independent. Z-scores ranged between -3.167 and 3, suggesting the presence of a single outlier. Histogram and P-P plot analysis of the dataset suggested that the residuals were approximately normally distributed. A scatter plot showed homogeneity of variances.

The Aggression content dimension score predicted 23.9% of variance in the IS score. The other models (Model 2, Aggression

score + Sexual/Religious score; Model 3, Aggression score + Sexual/Religious score + Symmetry score; and Model 4, Aggression score + Sexual/Religious score + Symmetry score + Contamination score) do not added a significant effect to IS variance when compared to Model 1. In other words, the only OCD symptom content dimension that seems to be associated with internalized stigma is Aggressiveness.

MLR analysis showed a statistically significant model [$F(4,78)=7.566$; $p<0.001$; $R2=0.481$]; however, only the Aggression symptom content score ($\beta=0.360$; $t=3.133$; $p=0.002$) was considered predictive of the IS score.

This relationship can be described by the following equation:

y = bo + b1.x1, or IS score = 51.5 + 1.299 (DY-BOCS Aggressiveness symptom dimension score)

DISCUSSION

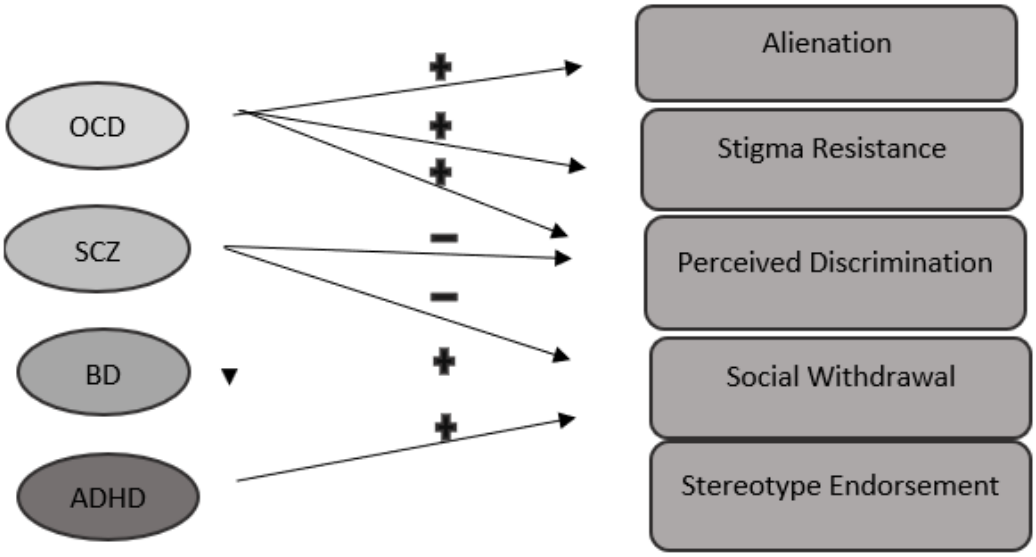
The main findings of this work include: the overt presence of IS in patients with OCD (especially as determined by the Alienation, Perceived Discrimination, and Stigma Resistance constructs); the association of OCD severity with greater severity of IS and its constructs; the specific association of IS with aggressive symptom content; the influence of both the presence and severity of sensory phenomena on IS scores; and the relationship between severity of depression (but not anxiety) symptoms and severity of IS in patients with OCD. These findings will be discussed in detail below.

The presence of IS in patients with OCD

OCD is associated with unpleasant, negative emotions that may play a role in IS. A comparison of IS in OCD versus IS in other psychiatric illnesses shows that, in OCD, the IS constructs with the highest scores were Alienation, Perceived Discrimination, and Stigma Resistance. According to Viscardi et al, patients with different mental health diagnoses share common stigmas regarding the Alienation construct [25], i.e., people with mental illness generally perceive that they do not belong in society; they feel displaced from the world because of their mental disorder and subjectively experience feelings of inferiority in relation to other people. Furthermore, in patients with schizophrenia IS scores are lower for Perceived Discrimination and Social Withdrawal, whereas patients with ADHD and BD tend to be more withdrawn/avoidant of persons and activities than those with schizophrenia [25]. In fact, few studies have evaluated the implications of a mental health diagnosis for the internalization of stigma and the severity or persistence of symptoms, nor as factors that hinder the response to treatment. Sardão notes that patients with schizophrenia and bipolar disorder (BD) internalize stigma more than those diagnosed with anxiety [24]. She further notes that the degree of IS is lower in patients with unipolar mood disorders compared to psychotic disorders, as is the impact of severe positive symptoms on self-stigma [24]. However, there are no head-to-head comparisons of these different populations versus OCD in relation to IS constructs.

Figure 1 highlights the differences in presence of IS constructs across the different disorders mentioned above, according to Sardão [24]. We hypothesize that the psychopathological diversity of OCD, schizophrenia, BD, and ADHD symptoms has distinct implications for the different IS constructs.

Figure 1. Comparison of the presence of IS sub-scores in mental disorders.



Legend: OCD = Obsessive-Compulsive Disorder; SCZ = Schizophrenia; BD = Bipolar Disorder; ADHD = Attention-Deficit Hyperactivity Disorder; + = highest scores; – = lowest scores.

Severity of obsessive-compulsive symptoms and IS

As shown in our results, IS has a direct, moderate correlation with the severity of obsessive and compulsive symptoms (OCS). This association was mainly attributable to the Alienation, Stereotype Endorsement, Perceived Discrimination, and Social Withdrawal sub-scores. Thus, the greater severity of SOC as measured by Y-BOCS appears to cause a subjective feeling of inferiority in relation to one's peers, possibly due to the discrimination suffered and the belief of being less capable of working, having trouble in relationships, and having no control over obsessive thoughts and/or repetitive behaviors. A previous study showed that people with mental disorders tend to experience more discrimination than people with physical illnesses or disabilities [26,27] and are less likely to be employed [28,29], as well as at greater risk of being falsely reported/accused of violent crimes [30,31]. Patients with severe OCD also feel that they are treated differently and perceive a certain amount of discrimination from society. This may in fact be true (due to the presence of overt manifestations) or may just be a misperception by the OCD sufferer, without necessarily corresponding to reality. This awareness of the stereotype may be because obsessions are egodystonic, i.e., the subject (most of the time) has insight that their compulsive thoughts and behaviors are meaningless and strange and aware that, by carrying them out, they will be seen and understood as such by most outsiders [32]. The more a subject realizes that they have been discriminated against, the greater their tendency to develop potentially pathological manifestations [9] or increased physical reactivity to stressful social situations [10]. Internalization of stigma occurs mainly through the perception and awareness of social stereotypes, followed by acceptance and endorsement of such stereotypes [33]. Thus, the more severe their OCD, the greater the patients' endorsement of the stereotype of OCD they observe in society, i.e., a person full of strange, unusual quirks and tics, experiencing a certain degree of suffering and, sometimes, a laughingstock, as depicted in various films that have addressed this condition or exploited it as a plot device [34-36]. Furthermore, the more severe the symptoms of OCD, the greater one's exposure to negative judgments, ultimately leading to endorsement of these judgments. However, not all people diagnosed with a mental illness apply stereotypes of this illness to themselves [24], despite a tendency to accept and endorse the stereotype. Perhaps this assimilation can be viewed as a "survival strategy" of sorts. Opposing the stigma of mental illness constitutes a challenge, as this requires the individual to internalize positive perspectives that run counter to the social impositions of stereotypes. One study showed that incorporating such stereotypes of mental disorders into one's identity can cause harm, including low self-esteem, low self-efficacy, and lower medication adherence [37].

Finally, the greater severity of SOC results in greater severity of avoidant behaviors, especially regarding social interactions. Once again, the egodystonic aspects of OCD seem to play a significant role in this association, since experiencing symptoms that are more difficult to control can cause shame in social situations, as sufferers may find themselves more subject to others' judgment. Some studies have found that discrimination against people with a mental health diagnosis erodes their social status and can cause embarrassment [38], social exclusion, and isolation, with significant negative impacts on their treatment [14,39]. Another study found that, when individuals perceive themselves as belonging to a socially depreciated category, they tend to anticipate prejudice and disparagement, even if these do not actually occur [40].

Content of obsessive-compulsive symptoms and IS

Among the dimensions of OCD, only the symptom score of Aggressiveness content was considered a predictor of IS, specifically due to its association with Alienation and Stereotype Endorsement scores. Our hypothesis that we would also find a significant relationship between IS and Sexual/Religious content, due to such thoughts characteristically being associated with shame and guilt, was rejected. This association may not have occurred because, although both dimensions involve other people, thoughts in the Aggressiveness dimension are more likely to come to fruition, as violent acts are somewhat less reprehensible than taboo sexual/religious behaviors. Thus, the exposure to external condemnation, judgment, and discrimination of individuals who experience OCD symptoms with prominent aggressive/violent content potentially increases the possibility of internalizing stigma. Conversely, the potential for realization of obsessions of a sexual/religious nature is greatly limited by social sanctions; hence, these tend to remain only within the realm of thought. The Sex/Religion dimension of the DY-BOCS combines both sexual and religious thoughts, which have different connotations. This may have introduced bias to the results, as the two concepts were combined in the questionnaires. Therefore, it is our understanding that future studies should distinguish sex-related SOC from religious/blasphemous SOC when seeking to explore associations with IS.

Presence of sensory phenomena

Except for Stigma Resistance, all other IS sub-scores showed a direct, moderate correlation with SP. Comparing 148 OCD patients with good insight versus 124 with poor insight, Avila et al, found an association between SP and the latter [32]. As suggested by the authors, the presence of SP may indicate treatment failure, as well as an increase in IS, so that SP (and reduced insight into one's symptoms) would reinforce the "vicious cycle" of OCD. Poor insight of one's symptoms

hinders one's ability to interrupt or control OCS (especially compulsions) [41], instead perceiving them as "proper", "appropriate", "relevant", or even "necessary". Therefore, both treatment failure and chronification of OCS may be responsible for IS in these patients. Otherwise, the reduced insight in relation to compulsions caused by SP may be an intermediary in the development of IS.

Depression and anxiety

Our results showed a strong association of depression with the IS constructs, while anxiety was only moderately correlated. The severity of depression showed the greatest strength of association with IS, which confirms our hypothesis that depression and IS are correlated variables. Thus, the internalization of stigmatizing situations potentially worsens depressive symptoms. This is consistent with studies which found that prejudice and stigma associated with mental disorders promote severe psychological distress, leading to deterioration of the underlying psychopathology [42,43]. Furthermore, according to Rocha et al, the negative consequences of stigma influence the internal perceptions, emotions and beliefs of the stigmatized person, leading to self-stigma, whereby the person adopts passive, ashamed, self-devaluing behaviors and ceases playing their social role [42]. These are all characteristic symptoms of depression. Thus, it is our understanding that OCS combined with higher IS scores can increase the severity of depressive symptoms, just as OCS combined with higher depression scores can facilitate the onset of IS. This allows the establishment of a vicious feedback loop of factors that perpetuate the disease. Nevertheless, the methodology of this study precludes assessment of reverse causality between OCS, depression, and IS. One possible question for future research is whether IS symptoms may be confused with depressive symptoms, as they are somewhat similar insofar as they reveal low self-esteem and self-deprecation.

Finally, once the MLR models were applied, the only conclusions supported by our findings are that the Aggressive content dimension of OCD symptoms and the presence of depressive symptoms are predictive of IS.

The present study has some limitations that should be noted:

- Although the ISMI scale has been scientifically validated and is widely used in Brazil, it has not been used previously to assess stigmatization of patients with OCD. The process of validating the scale for this population will be described elsewhere.
- The lack of control over how the sample was recruited, since the selection of participants was left to the respondents themselves ("snowball" sampling) [44], with no investigator responsible for the selection and inclusion of participants based on predefined inclusion criteria, which may lead to uncertainty as to whether all participants were eligible. However, as this was an exploratory study, we believe there should be no impact.
- Like all non-probabilistic techniques, "snowball" sampling and online recruitment cannot ensure the diagnostic accuracy of the sample [44];
- The sample size (83 individuals) was only half of the initially stipulated number of 167 respondents. Nevertheless, important findings were obtained and can serve as a basis for studies with larger samples.

CONCLUSION

Although the findings of this study were not directly compared with a sample of healthy individuals, they are of fundamental importance for building the evidence base on the association between OCD and IS. Furthermore, our results suggest a need for evaluation and treatment of symptoms of other psychiatric disorders comorbid with OCD, especially depressive symptoms. These findings support the importance of continued, in-depth research into this topic.

In short, although the generalizability of our findings may be somewhat limited, they are applicable to a large number of patients with moderate to severe OCD symptoms. Despite these limitations, the present study proved to be pioneering and significant in identifying and measuring the degree of association of intrinsic (aggressive symptoms) and extrinsic (depressive symptoms) aspects of the psychopathological phenomenology of obsessive-compulsive disorder with key aspects of the phenomenology of internalized stigma. These findings can have significant implications not only to inform detailed, individualized diagnostic investigations, but also to inform complementary therapeutic approaches, especially for patients with OCD resistant or refractory to conventional treatments.

Disclosures

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Declarations of interest: None.

Ethical approval: The Federal University of Health Sciences of Porto Alegre (UFCSPA) Research Ethics Committee approved the study protocol on April 27, 2021 (opinion no. 2104036), in compliance with National Health Council (CNS) Resolution 466/2012.

Informed consent: Informed consent was obtained from all individual participants included in the study.

Data statement: The raw/processed data required to reproduce the above findings cannot be shared at this time due to legal/ethical reasons, but they are available from the corresponding author, [PCD], upon reasonable request.

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