

# Alexithymia, responsibility attitudes and suicide ideation among outpatients with obsessive-compulsive disorder: An exploratory study

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## Abstract

**Aims:** Obsessive-compulsive disorder (OCD) is psychiatric disorder with a significant suicide risk, and the presence of alexithymia may increase this risk. As several studies attribute an important role, in OCD, to responsibility, the aims of this study were to evaluate possible clinical differences between patients positive or not for alexithymia concerning disorder severity, responsibility attitudes and suicide ideation and investigate which variables were associated with increased suicide ideation.

**Methods:** 104 adult outpatients with OCD were recruited. Alexithymia was measured with Toronto Alexithymia Scale (TAS-20), attitude about responsibility was tested with Responsibility Attitude Scale (RAS), suicide ideation was assessed with Scale of Suicide Ideation (SSI) and depressive symptoms were evaluated with Montgomery Åsberg Depression Rating Scale (MADRS). Score of item #11 on the Y-BOCS was considered as a measure of insight.

**Results:** Patients positive for alexithymia showed higher responsibility attitudes and more severe suicide ideation. In a blockwise regression model, the presence of lower insight, higher RAS scores and difficulty in identifying feelings dimension of TAS-20 were associated with higher SSI scores.

**Conclusions:** OCD patients with alexithymia may show higher disorder severity, lower insight and inflated responsibility, all related to suicide ideation, independently from depressive symptoms. Implications were discussed and study limitations considered and reported.

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## 1. Introduction

Despite common belief, patients with obsessive-compulsive disorder (OCD) may be at risk of committing suicide [1]. In

fact, several studies suggested that between 5 and 25% of people with OCD have attempted suicide at some point in their lives and have, in general, more suicidal ideation than non-affected individuals [1–4]. Moreover, OCD, when comorbid with major depressive disorder (MDD), may be more severe and associated with higher suicidal risk [5].

The term “alexithymia” was introduced to designate a cluster of cognitive and affective characteristics that were observed among subjects with psychiatric and psychosomatic diseases and may be considered as a personality trait [6]. The alexithymia

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construct is multidimensional and comprises four distinct features: (a) difficulty in identifying (DIF) and describing feelings (DDF), (b) difficulty in distinguishing feelings from the bodily sensations, (c) diminution of fantasy, and (d) concrete and poorly introspective thinking [7]. Alexithymics may have affective dysregulation, the inability to self appease and deal with emotions because of a lack of awareness of emotions [8]. These cognitive characteristics have been ascribed to an impaired capability to elevate emotions from a sensorimotor level of experience to a representational level, where they can be used as signaling responses to internal or external events and modulated by psychological mechanisms [9]. Because the alexithymics are psychologically poorly equipped, they generally demonstrate significantly higher levels of anxiety, depression and general psychological distress and are inclined to suffer both “functional” somatic symptoms and symptoms of emotional turmoil [10].

Alexithymia may be present in 20%–40% of patients with OCD [11]. It has been linked to increased disorder severity and lower insight [11,12] and its presence may increase suicide risk [13]. In fact, several studies have showed that alexithymic features may be per se positively associated with a history of attempted suicide and increased suicide risk, even in absence of depressive symptoms [14,15]. As intolerable psychological pain sometimes does not have real words for the state that the individual is experiencing, the subjects with high levels of alexithymia may be more prone to express this pain as a suicidal act [16,17].

The role of responsibility in OCD has been widely investigated. Responsibility, has been defined by Salkovskis et al. [18] as: “The belief that one has power which is pivotal to bring about or prevent subjectively crucial negative outcomes”. In cognitive models of OCD, excessive responsibility has been suggested as one of core cognitive components that constitute vulnerability and maintenance factors of such disorder [19]. It can be hypothesized that inflated responsibility may be related to higher OCD severity, depressive symptoms, guilt feelings and impulsivity [20,21], probably triggering and increasing suicide ideation especially in more vulnerable OCD subjects, such as the ones with higher alexithymia levels. However, to date, the interrelationships between alexithymia, responsibility and suicide ideation in OCD patients have not yet been studied.

Therefore, the aims of the present exploratory study were to: 1) evaluate possible clinical differences between patients positive or not for alexithymia concerning disorder severity, insight, responsibility and suicide ideation, controlling for several covariates and 2) investigate which clinical variables were associated with suicide ideation using a blockwise linear regression analysis.

## 2. Methods

### 2.1. Subjects

Patients between 18 and 45 years with a diagnosis of OCD were considered eligible for this study. Diagnoses were made by clinical assessment following the Structured

Clinical Interviews for DSM-IV Axis I Disorders (SCID-I). The participants enrolled in the study were patients with a Yale-Brown Obsessive Compulsive Scale (Y-BOCS) [22] total score of at least 16 within the first 10 items.

Exclusion criteria included: any concomitant axis I disorder, substance abuse and organic mental disorders. Subjects with an IQ  $\leq 70$  as measured by the Wechsler Adult Intelligence Scale—Revised (WAIS-R) were excluded from the study in order to avoid potential biases in interpreting results of the TAS-20.

104 adult outpatients with a diagnosis of OCD were recruited in several mental health facilities in Northern and Central Italy and included in our study.

### 2.2. Instruments

The rating scales were administered by psychiatrists with at least 5 years’ clinical experience who were supervised by senior psychiatrists (NS, MDG).

Severity of OCD was assessed with the first 10-items of the Y-BOCS, a clinician-administered scale developed to assess the severity of obsessions and compulsions, independent of the number and type of obsessions or compulsions present.

The score for item #11 on the Y-BOCS was considered as a measure of insight level as made in a previous studies [11,23]. Scores of  $\geq 3$  on item #11 of Y-BOCS are considered to mark the boundary between awareness and no awareness of the illness [24]. 26.9% ( $n = 28$ ) of 104 patients were considered positive for no awareness of the illness (poor or absent insight).

Alexithymia was evaluated by the Italian version of the 20-items Toronto Alexithymia Scale (TAS-20) [25]. A score of 61 or higher was considered indicative of alexithymia. The TAS-20 has a three-factor structure: Factor 1 assesses the capacity to identify feelings and to distinguish between the feelings and bodily sensations of emotional arousal (difficulty in identifying feelings [DIF]); Factor 2 reflects the inability to communicate feelings to other people (difficulty in describing feelings [DDF]); Factor 3 assesses externally-oriented thinking (EOT). The TAS-20 total score was  $50.3 \pm 12.7$ ; 26% ( $n = 27$ ) of 104 patients who scored 61 or more were considered positive for alexithymia.

To assess suicide ideation, the Scale of Suicide Ideation (SSI) scores [26], a 3 point clinician-rated scale with statements of suicidal intentions, were evaluated. The higher the total score, the greater the severity of suicide ideation. As suggested by Sokero et al. [27], a score of 6 or more has been used as a cut-off threshold for clinically significant suicidal ideation. 28.8% ( $n = 30$ ) of patients were considered positive for clinically significant suicidal ideation.

The Responsibility Attitude Scale (RAS), a 26-item questionnaire, was employed to assess attitudes or beliefs about responsibility [18]. Individuals indicate their agreement, on a 1 (totally agree) to 7 (totally disagree) Likert scale. The total RAS score is the sum of scores on the 26 items.

The Montgomery Åsberg Depression Rating Scale (MADRS) was used to evaluate depressive symptoms in OCD patients [28]. The mean score was  $7.1 \pm 2.0$ .

The rating scales were administered as a part of everyday “real world” clinical practice evaluation and assessment and, therefore, no institutional review board approval was needed. However, each patient had to understand the nature of the study and signed an informed consent document prior to rating scales administration. The study was conducted in accordance with the principles of good clinical practice and the Declaration of Helsinki (1964) and subsequent revisions.

### 2.3. Statistical analyses

Descriptive statistics and percentages for the study sample were computed on demographic variables and all psychometric-scales. All demographic, clinical and laboratory variables in the present study were checked for deviations from the Gaussian distribution using the Kolmogorov–Smirnov test. Given the normal distribution of the variables, t-test was used to analyze gender differences. To analyze differences among groups in categorical variables, the  $\chi^2$  values (with the Yates’ correction for  $2 \times 2$  tables) were used. The differences between individuals with and without alexithymia were tested using analyses of covariance (ANCOVA) with TAS-20 positivity/negativity as a factor and gender, age, age at onset, illness duration and MADRS scores as covariates. The power analysis of the between groups comparison was computed using the effect size partial eta square ( $\eta^2$ ) for continuous variables. A small effect is rated for  $\eta^2 > 0.01$ , a medium effect for  $\eta^2 > 0.06$  and a large effect for  $\eta^2 > 0.14$ . Odds ratios were computed for categorical variables. A block-wise linear regression analysis was performed to find out which variables were associated with suicidal ideation (SSI as dependent variable). Age, age at onset, gender, duration of illness, MADRS and Y-BOCS subscales were added in the first block. In the second block, RAS was added to the model. The DIF, DDF,

and EOT subscales of the TAS-20 were entered in the last step. The quality of the regression model was tested using the Durbin–Watson statistic. The significance level was set at  $p < 0.05$ . All statistical testing was two-sided.

### 3. Results

The sample consisted of 52 males and 52 females with a mean age of  $32.1 \pm 8.0$  years, a mean duration of illness of  $9.9 \pm 6.8$  years and a mean age at onset of  $22.2 \pm 6.0$  years. Nine patients (8.7%) had attempted suicide at some point in their life whereas a family history of suicide was reported for twelve patients (11.5%). Gender comparisons between all demographic and clinical variables showed no significant differences on any of the variables.

The comparison between individuals with or without alexithymia controlling for gender, age, age at onset, illness duration and MADRS scores, showed that patients positive for alexithymia scored higher on Y-BOCS total, Y-BOCS obsessive subscale, Y-BOCS compulsive subscale, RAS and SSI than non-alexithymics (Table 1). Patients with alexithymia were more positive for no awareness of the illness and suicide ideation when considering cut-off values for item #11 of Y-BOCS and SSI (for both  $p < 0.001$ ). Effect size calculation showed that the magnitude of the group effect between alexithymic and nonalexithymic patients concerning Y-BOCS and compulsive subscale, insight, RAS and SSI was large, whereas the effect for Y-BOCS obsessive subscale was small.

In the blockwise linear regression model (Table 2), the presence of lower insight, higher RAS and TAS-20 DIF subscale scores were associated with higher suicide ideation (SSI as dependent variable). In the current analyses, the  $R^2$  values accounted for 57% of variance in SSI. In addition, Durbin–Watson coefficient was 1.911 (near to the optimum of 2.0) and a scatter plot of residuals and a plot of regression-standardized residuals indicated a near normal distribution.

Table 1

Comparison of Y-BOCS, SSI and serum lipid levels between individuals with alexithymia (patients with a TAS-20 score  $\geq 61$ ) and without alexithymia (patients with a TAS-20 score  $\leq 61$ ), controlling for gender, age, age at onset, illness duration and MADRS scores.

|                              | Overall<br>(n = 79) | Subjects with scores<br>$\geq 61$ on TAS-20<br>(n = 27, 26.0%) | Subjects with scores<br>$\leq 61$ on TAS-20<br>(n = 77, 74.0%) | Between groups<br>comparison<br>(ANCOVA and $\chi^2$ ) | Subjects with scores<br>$\geq 61$ on TAS-20<br>vs subjects with scores<br>$\leq 61$ on TAS-20 effect size<br>(partial $\eta^2$ and odds ratios) |
|------------------------------|---------------------|--|--|--|---|
| Y-BOCS Total Score           | $25.9 \pm 4.4$      | $29.6 \pm 4.0$   | $24.6 \pm 3.8$   | F = 21.4, df = 1, 103, $p < 0.001$                     | cpe   |
| Obsessive subscale           | $14.0 \pm 2.6$      | $15.4 \pm 2.5$   | $13.5 \pm 2.4$   | F = 5.3, df = 1, 103, $p = 0.02$                       | 0.05  |
| Compulsive subscale          | $11.9 \pm 2.9$      | $14.1 \pm 2.6$   | $11.1 \pm 2.6$   | F = 22.2, df = 1, 103, $p < 0.001$                     | 0.19  |
| Insight (item #11 of Y-BOCS) | $1.7 \pm 1.3$       | $2.9 \pm 1.2$  | $1.3 \pm 1.1$  | F = 29.3, df = 1, 103, $p < 0.001$                     | 0.23  |
| Absence of insight (n, %)    | 28, 26.9%           | 19, 70.4%  | 9, 11.7%   | $\chi^2 = 34.36$ , df = 1, $p < 0.001$                 | 37.05   |
| RAS                          | $129.8 \pm 23.7$    | $157.1 \pm 15.1$   | $120.3 \pm 18.0$   | F = 79.4, df = 1, 103, $p < 0.001$                     | 0.45  |
| SSI                          | $3.5 \pm 3.3$       | $7.6 \pm 2.8$  | $2.1 \pm 2.1$  | F = 92.2, df = 1, 103, $p < 0.001$                     | 0.49  |
| SSI $\geq 6$ (n, %)          | 30, 28.8%           | 24, 88.9%  | 6, 7.8%  | $\chi^2 = 60.16$ , df = 1, $p < 0.001$                 | 94.67   |

Data are expressed as mean  $\pm$  standard deviation or otherwise specified. ANCOVA and partial  $\eta^2$  were employed for dimensional variables whereas  $\chi^2$  and odds ratios for categorical variables.

Table 2

Results of blockwise linear regression analysis with SSI as dependent variable and other variables as independent.

| Step | R <sup>2</sup> | Variables | Unstandardized coefficients |      | Standardized coefficient |    | t     | P      | 95% confidence interval for B |             |
|------|----------------|-----------|-----------------------------|------|--------------------------|----|-------|--------|-------------------------------|-------------|
|      |                |           | B                           | SE   | Beta                     | SE |       |        | Lower bound                   | Upper bound |
| 1    | 0.37           | Constant  | -2.14                       | 2.09 |                          |    | 1.02  | 0.31   | -6.28                         | 2.00        |
|      |                | Insight   | 1.05                        | 0.23 | 0.42                     |    | 4.63  | <0.001 | 0.60                          | 1.50        |
| 2    | 0.50           | Constant  | -8.20                       | 2.26 |                          |    | -3.63 | <0.001 | -12.69                        | -3.72       |
|      |                | Insight   | 0.55                        | 0.23 | 0.22                     |    | 2.40  | 0.02   | 0.10                          | 1.01        |
|      |                | RAS       | 0.06                        | 0.01 | 0.46                     |    | 4.83  | <0.001 | 0.04                          | 0.09        |
| 3    | 0.57           | Constant  | -7.78                       | 2.19 |                          |    | -3.55 | <0.001 | -12.14                        | -3.42       |
|      |                | Insight   | 0.55                        | 0.22 | 0.22                     |    | 2.56  | 0.01   | 0.12                          | 0.99        |
|      |                | RAS       | 0.04                        | 0.01 | 0.29                     |    | 2.87  | 0.01   | 0.01                          | 0.06        |
|      |                | DIF       | 0.14                        | 0.04 | 0.29                     |    | 3.25  | <0.001 | 0.05                          | 0.22        |

Age, age at onset, gender, duration of illness, insight (YBOCS item #11 score), MADRS and Y-BOCS subscales were added in the first block. In the second block, RAS was added to the model. The DIF, DDF, and EOT subscales of the TAS-20 were entered in the last step. Only statistically significant variables are shown.  $F = 11.03$ ,  $df = 11$ ,  $p < 0.001$ .

#### 4. Discussion

To our knowledge, this was the first study that evaluated the relationships between alexithymia, inflated responsibility and suicide ideation in a sample of outpatients with OCD.

Patients with alexithymia showed increased OCD severity, lower insight, inflated responsibility and more severe suicide ideation and these results may be explained according to the Freyberger's concept [29] of acute "secondary alexithymia" as a reaction to stressful situations. Acute secondary alexithymia may be explained as a transitory, state-dependent phenomenon that results as an effect of personal distress, and which may decrease once an acute disease episode has resolved. As patients with alexithymia reported higher Y-BOCS scores and lower insight than those without alexithymia, increases in RAS and SSI scores may reflect a state-dependent phenomenon, perhaps related to higher OCD severity and lack of insight. In fact, poor insight is associated with more severe form of OCD [4,11,30].

In our study, OCD patients with alexithymia showed higher suicide ideation that was associated with lower insight, inflated responsibility as well as DIF dimension of TAS-20, independently by the presence of depressive symptoms. This latter finding is in accordance to what was reported by Torres et al. [31] who showed that depressive symptoms were associated with previous but not with current suicidal ideation or with suicide attempts in a large sample of OCD patients.

Alexithymia has been found associated with increased suicide risk and behaviors in several medical and psychiatric disorders [32–34] and this has been demonstrated also in OCD patients [35]. Subjects with alexithymia may have a threefold greater risk of death from accidents, injury, or violence, including suicides, when compared to individuals without alexithymia [36]. Moreover, suicidal ideation was found more common among subjects with alexithymia than individuals without alexithymia [14,37]. The finding of association between the DIF dimension of TAS-20 and

suicide ideation we found in our sample was consistent with results of previous studies that have demonstrated that the DIF dimension of the TAS-20 may be related to increased suicidal ideation, even in absence of depressive symptoms [33,35,38].

No studies were, to date, published on relationships between inflated responsibility and suicide ideation neither in clinical or non-clinical samples nor in relationships with alexithymia. The inflated sense of responsibility (that could be read in terms of social responsibility present in OCD patients) may result from hyper-evaluation of the thought of the others [39], thus related to the presence of a greater sense of guilt respect to own emotional difficulty in social relationships unlike other psychiatric disorders [40]. Interestingly, the results of our study may support the notion that individuals with greater DIF and lack of insight may show an inflated responsibility linked to higher suicide ideation. On this basis, we can hypothesize that the presence of alexithymia in OCD patients may be related to a chronic poor resistance to stressful situations even when the stressor is quite low (the "alexithymia-stress hypothesis") [41–43]. This chronic poor resistance to stressful situations may be associated with a greater disorder severity (acute "secondary alexithymia") [29] and, consequently, with an inflated responsibility, that may further worsen OCD symptoms, triggering a vicious circle [44]. In fact, the difficulty in differentiating feelings and distinguishing them from bodily sensations and emotional arousal may interfere with the ability of such patients to adequately cope with life stressors and properly manage inflated responsibility [11,29,45]. As inflated responsibility may trigger or increase guilt feelings [45,46], these feelings may be particularly problematic and severe in individuals with alexithymia, further increasing suicidal ideation. Therefore, as it has been demonstrated that pathological guilt is associated with an increased suicide risk [47], individuals with alexithymia may develop pathological guilt as a consequence of inflated responsibility and higher OCD severity, becoming at risk of suicide even in absence of clinically significant depressive symptoms.



Therefore, on the basis of our results, we may suggest the clinicians should beware that the absence of clinically relevant depressive symptoms does not necessarily rule-out suicidal ideation in OCD patients and suicidal ideation must be always investigated, especially in presence of alexithymia (especially DIF), lower insight and inflated responsibility.

This study was exploratory in nature and thus had several limitations that must be acknowledged. Even if severity of OCD and suicidal ideation were analyzed using clinician-rated rating scales, alexithymia and responsibility attitudes were assessed through self-rating scales, with possible biases due to the inherent nature of self-rating scales. Furthermore, we employed a cross-sectional design that limits statements regarding causality: our study lacks of follow-up data. In fact, the cross sectional nature of the present study does not allow to draw definite conclusion on what phenomenon (alexithymia or responsibility) may be primary. Future studies should also include measures of pathological guilt and consider whether treatments may influence outcomes, alexithymia, responsibility and suicide ideation. Therefore, prospective studies on larger samples are undoubtedly needed. Moreover, the small sample size does not allow the generalization of findings and no specific psychometric instruments have been used to assess insight, as in the present study the corresponding item (item #11) of the Y-BOCS has been considered as a measure of insight level.

## 5. Disclosure

The authors have no conflict of interest with any commercial or other associations in connection with the submitted article. The data have been never presented before. The rating scales were administered as a part of everyday “real world” clinical practice evaluation and assessment and, therefore, no institutional review board approval was needed. However, each patient had to understand the nature of the study and signed an informed consent document prior to rating scales administration. The authors have contributed with equal efforts to the manuscript. All authors recruited patients during their everyday clinical practice, tested them and reported results. The statistical analyses were mainly conducted by D. D. B., M. F. and M. M., with the collaboration of all authors. All authors wrote together results and discussion. No animals have been used.

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