



# Maladaptive beliefs in relationship obsessive compulsive disorder (ROCD): Replication and extension in a clinical sample

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## ABSTRACT

Obsessive-compulsive symptoms focusing on interpersonal relationships may include obsessive doubts and preoccupation centered on the relationship (i.e., relationship-centered) or the relationship partner (i.e. partner-focused). Although general obsessive beliefs have been associated with relationship obsessive-compulsive disorder (ROCD), perfectionism and catastrophic relationship beliefs may particularly relevant to the maintenance and development of such symptoms. We assessed the unique contributions of specific perfectionism dimensions and catastrophic relationship beliefs to relationship-centered and partner-focused ROCD symptoms. Participants included 124 individuals recruited online reporting that they had received a diagnosis of ROCD by a qualified clinician completed a battery of questionnaire tapping maladaptive beliefs previously associated with obsessive-compulsive disorder (OCD), multidimensional perfectionism and catastrophic relationship beliefs. Perfectionistic concern over mistakes and doubts about actions, catastrophic beliefs regarding being in the wrong relationship and of being alone were found to be unique predictors of relationship-centered ROCD symptoms over and above mood symptoms. Only catastrophic fears of being in the wrong relationships predicted partner-focused ROCD symptoms. Perfectionistic tendencies as well as specific relationship-related beliefs may be more strongly implicated than OCD-related maladaptive beliefs in the development and maintenance of relationship-centered ROCD symptom. More research is needed to identify more specific beliefs associated with partner-focused ROCD symptoms.

## 1. Introduction

Obsessive-Compulsive Disorder (OCD) is a disabling disorder characterized by the occurrence of distressing intrusive thoughts, images or impulses (i.e., obsessions), and/or by repetitive behaviors or mental acts (i.e., compulsions) aimed to alleviate distress or to prevent feared events from occurring (American Psychiatric Association, 2013). OCD is a heterogeneous disorder, with specific symptom dimensions including dirt/contamination, order/symmetry, doubt/checking, and repugnant or unacceptable thoughts (Bloch, Landeros-Weisenberger, Rosario, Pittenger, & Leckman, 2008).

Relationship obsessive compulsive disorder (ROCD) refers to a disabling dimension of OCD focused on close interpersonal relationships such as romantic and parent-child relationships (e.g., Doron, Derby, & Szepeswol, 2014, 2017). Within romantic relationships, ROCD symptoms include two main presentations: relationship-centered and partner-focused ROCD symptoms. Relationship-centered ROCD symptoms comprise doubts and preoccupations relating to one's feelings

towards the partner, the partner's feelings towards oneself, and the 'rightness' of the relationship (Doron, Derby, Szepeswol, & Talmor, 2012a). Relationship-centered ROCD symptoms are often triggered by seeing "happy couples" or when experiencing negative feelings (e.g., boredom and distress) in the presence of the partner. Compulsive behaviors associated with this presentation may include compulsive monitoring of internal states (e.g., love and attraction), neutralizing (e.g., visualizing being happy together), reassurance seeking (e.g., asking other people about the relationship), and repeated checking of the quality of the relationship (e.g., "Is our relationship good?"; Doron & Derby, 2017; Doron, Derby, Szepeswol, & Talmor, 2012b).

Unlike relationship-centered ROCD symptoms, partner-focused ROCD symptoms refer to disabling preoccupation with perceived flaws of one's partner in a wide variety of domains, such as intelligence, morality, sociability and appearance (Doron et al., 2012b). In this presentation, symptoms and associated distress focus on the partners' perceived flaws. Partner-focused ROCD symptoms are often triggered by contact with the perceived flaw (or its expression) or encounters

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with other potential partners. Compulsions associated with this ROCD presentations often comprise comparisons of the partner's characteristics with those of other potential partners, checking of the partner's behaviors or competencies, and repeated analyzing of the strengths and weaknesses of the partner (Doron, Derby, et al., 2014).

Findings suggest that both presentations of ROCD often co-occur and may maintain and perpetuate one another (Doron et al., 2012b; Szepeswol, Shahar, & Doron, 2016). Both ROCD symptoms presentations are often ego-dystonic as they contradict the subjective experience of the relationship and individual's personal values. For instance, an individual disavowing appearance as a personal value may feel shame and guilt about being preoccupied with their partners' appearance (Doron, Derby et al., 2014). Indeed, ROCD symptoms have been associated with significant personal and relational distress in both clinical and non-clinical samples (e.g., Doron, Derby, Szepeswol, Nahaloni, & Moulding, 2016; Doron, Mizrahi, Szepeswol, & Derby, 2014).

### 1.1. Cognitive processes in ROCD

Cognitive-behavioral models of OCD emphasize the role of catastrophic appraisals of intrusive doubts, thoughts, urges, and images in the development and maintenance of these disorders (see Moulding et al., 2014; Radomsky et al., 2014). OCD-related maladaptive beliefs such as threat overestimation, importance of thoughts and their control, inflated responsibility, intolerance of uncertainty and perfectionism increase the likelihood of catastrophic appraisals of common intrusive experiences (Obsessive Compulsive Cognitions Working Group, 1997, 2005). Such catastrophic appraisals may then trigger the use of ineffective strategies in response to their occurrence (e.g., thought suppression), which may paradoxically exacerbate the frequency and the emotional impact of the intrusions (Hooper & McHugh, 2013; Lambert, Hu, Magee, Beadel, & Teachman, 2014).

Among OCD-related beliefs, perfectionism may be particularly relevant to the development and maintenance of ROCD symptoms. Currently considered as a multidimensional construct (Frost, Marten, Lahart, & Rosenblate, 1990; Hewitt & Flett, 1991), particular aspect of perfectionism may increase maladaptive interpretations of relationship-related intrusive experiences. For instance, characteristics associated with perfectionism such as being overly critical with ones' own evaluations may increase doubts following mundane relationship discord. Similarly, excessive preoccupation with one's own actions may promote doubts and preoccupations relating to one's choice of a partner. Indecisiveness (Hollender, 1965) and high personal standards may further escalate doubts by increasing vigilance and distress relating to relationship or partner inadequacies. Striving for 'just right' experience (OCCWG, 1997; Summerfeldt, 2004) may increase doubts regarding the 'rightness' of the relationship (e.g., "Because I do not feel always perfect with him, he is not the one").

Indeed, research has linked ROCD symptoms with OCD-related maladaptive beliefs and particularly perfectionism (e.g., Doron et al., 2012a, 2012b; Doron et al., 2016). For instance, Doron et al. (2012a, 2012b) found moderate correlations between OCD-related beliefs including perfectionism/intolerance of uncertainty and relationship-centered partner-focused ROCD symptoms. These studies, however, measured perfectionism as a unidimensional construct using the 7-item Perfectionism/Intolerance for uncertainty scale of the short form of the Obsessive Beliefs Questionnaire (OBQ-20; Moulding et al., 2011). A more recent study (Melli & Carraresi, 2015) with non-clinical participants assessed the links between ROCD symptoms, OCD-related beliefs and a multidimensional measure of perfectionism – the Frost Multidimensional Perfectionism Scale (FMPS; Frost et al., 1990). Consistent with previous studies, findings from this study showed small-moderate correlations between relationship-centered, partner-focused ROCD symptom and OCD-related beliefs (as measured by the OBQ-20). In this study, relationship-centered ROCD symptoms show somewhat stronger correlations with the FMPS 'concern over mistakes' subscale than

partner-focused ROCD symptoms. Small size correlations were found between both ROCD symptoms presentations and the FMPS 'personal standards' and 'parental expectations' subscales.

One previous study investigated the link between ROCD symptoms and OCD-related beliefs using a clinical sample (Doron et al., 2016). In this study, clients diagnosed with ROCD, with OCD and community controls were compared on levels of OCD-related beliefs. Findings suggested that ROCD clients report stronger responsibility and importance/control of thought beliefs than OCD clients and community controls. Inflated responsibility beliefs were suggested to intensify negative emotional responses (e.g., guilt and self-blame) to ROCD related intrusions and importance to thoughts beliefs were proposed to increase vigilance to negative thoughts about one's partner and the relationship. Importantly, both ROCD and OCD clients showed higher levels of perfectionism/intolerance for uncertainty and over-estimation of threat than community controls. Again, however, this study measured perfectionism as a unidimensional, rather than multidimensional construct.

The latter study was also the only one which assessed the link between ROCD symptoms and more specific relationship-related maladaptive beliefs. Catastrophic beliefs regarding future consequences of relationship-related decisions (e.g., staying in the wrong relationship, ending a relationship or being alone) are expected to increase negative interpretations of relationship-related intrusive experiences. Indeed, ROCD patients reported higher levels of relationship-related maladaptive beliefs – as measured by the Relationship Catastrophization Scale (RECATS; Doron et al., 2016) – than other OCD patients and community controls. Specifically, ROCD patients showed higher levels of beliefs related to the negative consequences of staying in the wrong relationship (e.g., making the wrong romantic decision leads to great misery) than OCD patients and community controls. ROCD patients were also more likely to overestimate the negative consequences of being alone (e.g., living without a romantic partner is not living at all) compared with community controls, but not compared with OCD clients. The authors of this study suggested that higher endorsement of beliefs about the negative consequences of being alone together with catastrophic evaluations of being in the wrong relationship may work in opposition, leading to simultaneously doubting the relationship but also fearing being alone.

Thus, previous findings suggest moderate links between ROCD symptoms and OCD-related beliefs such as overestimation of threat, responsibility importance/control of thoughts and perfectionism/intolerance of uncertainty (Doron et al., 2012a, 2012b, 2016; Melli & Carraresi, 2015). Most of these studies, however, used a unidimensional measure to evaluate the associations between ROCD symptoms and perfectionism (Doron et al., 2012a, 2012b, 2016) or non-clinical participants (Melli & Carraresi, 2015). Only one clinical study assessed ROCD symptoms, OCD-related beliefs and relationship beliefs. This study, however, used a unidimensional measure of perfectionism and did not assess the unique contribution of all the proposed cognitive factors (OCD-related beliefs, multi-dimensional perfectionism and relationship-related beliefs) in the predictions of ROCD symptom.

### 1.2. The current study

The aim of the current study was to assess the relative contribution of previously identified general and specific maladaptive beliefs in the maintenance of ROCD symptoms. Specifically, we examined the unique contribution of OCD-related beliefs, multidimensional perfectionism, and relationship beliefs to relationship-centered and partner-focused ROCD symptoms. Although relationship-centered and partner-focused ROCD symptoms are related, the factors uniquely contributing to each ROCD presentation may differ. Relatedly, we wanted to replicate previous findings regarding the contribution of relationship-related maladaptive beliefs to ROCD symptoms using a large clinical sample.

Consistent with previous findings, we expected inflated

responsibility, importance/control of thoughts and fear of being in wrong relationship to uniquely contribute to both ROCD symptom presentations. We also expected perfectionistic concern over mistakes to uniquely contribute to relationship-centered ROCD symptoms.

## 2. Methods

### 2.1. Participants

A sample of people who self-reported that they had received a diagnosis of ROCD by a qualified clinician (licensed psychiatrist or clinical psychologist) was collected through distributing study information to OCD support groups and through placing an advertisement on a page dedicated to ROCD on a popular mental health website ([www.ipsico.it](http://www.ipsico.it)). Information about the study was also given to mental health practitioners and distributed at a conference for mental health workers, with a request that it be to be circulated to ROCD patients.

One hundred and twenty-four participants were recruited (mean age = 26.73,  $SD = 7.16$ , range: 18–51, 71.0% female). All the selected participants reported a qualitative description of their symptoms that was thoroughly reviewed in order to ascertain that it fit well with the diagnostic criteria for this OCD subtype. Moreover, the majority (91.1%) of them scored above the cut-scores (Melli et al., submitted) on the ROCI (i.e. > 21) and/or the PROCSI (i.e. > 17), indicating a sample very likely to suffer from ROCD taking into account the excellent diagnostic sensitivity of the Italian version of these scales (Melli et al., submitted; see below).

58.9% of the participants had a medium level of education (12–13 years, high school degree), 29.1% had a high level (16 or more years, bachelor's degree or Ph.D.) and the remaining 12% had a low level (eight or less years, primary or secondary school license). Most of the participants were employed (43.6%), 37.9% were undergraduate university students, and the remaining 18.5% were homemakers, unemployed, or retired. Most were single (71%), while 25.8% were married or cohabiting, 3.2% were divorced, widows or widowers.

### 2.2. Measures

#### 2.2.1. Relationship Obsessive-Compulsive Inventory (ROCI)

This is a 12-item self-report measure tapping into three OC relational dimensions: feelings towards one's partner (e.g., "I continuously doubt my love for my partner"), partner's feelings toward oneself (e.g., "I keep asking my partner whether she/he really loves me"), and the rightness of the relationship (e.g., "I check and recheck whether my relationship feels right"). Participants rated the extent to which a particular thought or behavior describe patient's experiences in intimate relationships. Ratings were made on a scale ranging from 0 ('not at all') to 4 ('very much'). The ROCI has shown good psychometric properties and has been related to measures of OCD symptoms, anxiety, depression, stress, and relationship quality (Doron et al., 2012a). The Italian version of the ROCI (Melli et al., submitted) has replicated the three-factor structure of the original version and has shown very good internal consistency ( $\alpha > 0.81$  for all subscales), good construct and criterion validity, and excellent diagnostic sensitivity (area under the curve [AUC] = 0.93). In the current study, the sum of all ROCI items was used as a measure of relationship-centered symptoms and internal consistency was good ( $\alpha = 0.77$ ).

#### 2.2.2. Partner-Related Obsessive-Compulsive Symptoms Inventory (PROCSI)

This is a 24-item self-report measure of OC symptoms centered on one's partner perceived flaws in six domains: appearance, morality, sociability, intelligence, emotional stability and general competence. Participants rated the extent to which a particular thought or behavior describe patient's experiences in intimate relationships. Ratings were made on a scale ranging from 0 ('not at all') to 4 ('very much'). The

PROCSI has shown good psychometric properties and has been related to measures of relationship centered and general OC symptoms, anxiety, depression, stress, and relationship quality (Doron et al., 2012b). The Italian version of the PROCSI (Melli et al., submitted) has replicated the six-factor structure of the original version and has shown good internal consistency ( $\alpha > 0.77$  for all subscales), good construct and criterion validity and excellent diagnostic sensitivity (area under the curve [AUC] = 0.93). In the current study, the sum of all PROCSI items was used as a measure of partner-focused symptoms and internal consistency was excellent ( $\alpha = 0.93$ ).

#### 2.2.3. Frost Multidimensional Perfectionism Scale (FMPS)

The FMPS (Frost et al., 1990) is a 35-item self-report questionnaire that originally comprised six subscales: Concern Over Mistakes (CM), Personal Standards (PS), Parental Criticism (PC), Parental Expectations (PE), Doubts About Actions (D), and Organization (O). A following study (Stöber, 1998) found a more robust four-factor solution, combining CM with D and PE with PC. Items are rated on a five-point scale from 1 ('strongly disagree') and 5 ('strongly agree'). The Italian version of the FMPS (Lombardo, 2008) has shown good internal consistency ( $\alpha > 0.75$  for all subscales). In the present study all the subscales showed very good or excellent internal consistency ( $\alpha$  in the range 0.84 and 0.91).

#### 2.2.4. Obsessive Beliefs Questionnaire-20 (OBQ-20)

This is a short form of the OBQ-44 (Obsessive Compulsive Cognitions Working Group, 2005) developed by Moulding et al. (2011). Response choices are scored from 1 ('disagree very much') to 7 ('agree very much') in relation to "what you are like most of the time". The Italian version of the OBQ-20 (Melli, Ghisi, Bottesi, & Sica, 2014) has shown good internal consistency ( $\alpha > 0.79$  for all subscales), adequate temporal stability ( $r > 0.61$  for all scales), and good construct and criterion-related validity. In the present study all the subscales were used, except for the Perfectionism/Intolerance of uncertainty subscale as perfectionism is better assessed by the FMPS (see above). The considered subscales showed very good internal consistency ( $\alpha$  in the range 0.84 and 0.86).

#### 2.2.5. Relationship Catastrophization Scale (RECATS)

This is a 18-item self-report measure designed to tap into three relational belief domains represented by six items each, including: (1) overestimation of the negative consequences of being alone, (2) overestimation of the negative consequences of separating with one's partner, and (3) overestimation of the negative consequences of being in the wrong relationship. Participants rated the extent to which they agree with a series of statements using a rating scale ranging from 1 ('disagree very much') to 7 ('agree very much'). A preliminary study (Doron et al., 2016) has supported the hypothesized three-factor structure of the scale and demonstrated its adequate internal consistency (Cronbach's  $\alpha$  values ranging from 0.79 to 0.87). Even if a formal Italian validation of the scale does not exist, its Italian translation was carried out through a mixed forward- and back-translation procedure. Discrepancies emerging from the back-translation were discussed with one of the original authors of the scale. Before being used in this study, the newly developed Italian version of the RECATS was administered to ten naïve participants in order to check the understandability of the items. They found all of the items easy to understand. In the present study all the subscales showed good or very good internal consistency ( $\alpha$  in the range 0.73 and 0.85, very similar to those of the English version).

#### 2.2.6. Depression Anxiety Stress Scales-21 (DASS-21)

The DASS (Lovibond & Lovibond, 1995) is a self-report questionnaire listing negative emotional symptoms and is divided into three subscales measuring depression, anxiety and stress. In this study we used the short version of the DASS (Antony, Bieling, Cox, Enns, &

Swinson, 1998; Clara, Cox, & Enns, 2001), which contains 21 items, 7 items for each scale. Participants rated how often a particular symptom was experienced in the past week. Ratings were made on a scale ranging from 1 ('did not apply to me at all') to 4 ('applied to me most of the time'). The original DASS-21 has shown good psychometric properties, and its Italian version (Bottesi et al., 2015) has shown good internal consistency ( $\alpha$  in the range 0.74–0.92), test-retest reliability ( $r$  in the range 0.64–0.74), and construct validity. In the present study only the total score was computed and the scale showed excellent internal consistency ( $\alpha = 0.94$ ).

### 2.3. Procedure

The questionnaires were made available online using a secure web-based survey programme (SurveyMonkey). Questionnaires were administered in counterbalanced fashion to control for order and sequence effects, and batteries took between 15 and 25 min to complete. All participants volunteered to take part to the study after being presented with a detailed description of the procedure and were treated in accordance with the *Ethical Principles of Psychologists and Code of Conduct* (American Psychological Association, 2010). No external incentives were offered for participating in this study.

### 2.4. Statistical analysis

To test the hypotheses about the relationships between perfectionism and maladaptive relational beliefs, on the one side, and dimensions of ROCD symptoms, on the other, the Pearson zero-order correlations between the FMPS, the RECATS, the ROCI and the PROCSI were examined. Following Cohen (1988) guidelines, correlations larger than 0.50 were referred to as strong, correlations between 0.30 and 0.49 as moderate and correlations between 0.10 and 0.29 as weak.

Two separate hierarchical multiple regression analyses - using the ROCI and the PROCSI as dependent variables - were then conducted to test the robustness of these associations. In the first step (Model 1) of each regression model DASS-21 and OBQ-20 subscale scores (excluding the perfectionism/intolerance of uncertainty subscale) were entered as control variables. In the second step (Model 2) FMPS subscale and RECATS subscale scores were simultaneously entered to examine whether perfectionism dimensions and maladaptive relational beliefs could independently account for a further proportion of variance of ROCD symptoms above and beyond obsessive beliefs and general distress.

## 3. Results

### 3.1. Descriptive statistics

Mean score, standard deviation, skewness, and kurtosis for each measure are reported in Table 1. Data were normally distributed for all the scales. The sample mean scores on all measures fell within the normal range reported in other Italian clinical samples (e.g., Bottesi et al., 2015; Lombardo, 2008; Melli et al.,).

### 3.2. Zero-order correlations

Table 1 also shows the zero-order correlations between study measures. There was a strong correlation between ROCI scores and FMPS-Concern Over Mistakes and Doubts About Actions scores and a moderate correlation between ROCI scores and OBQ-20-Overestimation of Threat, OBQ-20-Importance/Control of Thoughts, DASS-21, and all the RECATS subscale scores. PROCSI scores were strongly correlated with the RECATS-Overestimation of the negative consequences of being in the wrong relationship (REC-R) subscale scores, and were moderately correlated with all the FMPS subscale scores, except for the Organization subscale. The correlations of PROCSI with DASS-21, OBQ-20

subscales and other RECATS subscales were only low.

### 3.3. Regression analysis

The Variance Inflation Factor (VIF) was computed for each predictor and it always fell within the range (1.18 – 3.04) which is considered as evidence of a lack of substantial multicollinearity, as a value of 10 has been recommended as the maximum level of VIF (e.g., Hair, Anderson, Tatham, & Black, 1995). Further examination of the data also indicated that the assumptions of linearity and homoscedasticity were met.

Results of the hierarchical multiple regression analyses predicting ROCI and PROCSI scores are presented in the next subsections. A summary of the results of these analyses is reported in Table 2.

#### 3.3.1. ROCI

In the first step of the hierarchical multiple regression analysis predicting ROCI scores, DASS-21 and OBQ-20 subscale scores explained a significant proportion of variance ( $R^2 = .28$ ;  $p < .001$ ) and only the DASS-21 ( $\beta = 0.27$ ;  $p < .01$ ) emerged as a significant predictor. In the second step, entering all the FMPS and RECATS subscale scores, the variance explained significantly increased ( $R^2$  change = 0.13;  $p < .01$ ). This indicates that FMPS and RECATS subscales accounted for an additional 13% of the variance in ROCI scores when the variance explained by the DASS-21 and OBQ-20 subscales was controlled. The final model accounted for 40% of the variance and was statistically significant ( $R^2 = .40$ ;  $p < .001$ ). In this model only the FMPS-Concern Over Mistakes and Doubts About Actions subscale ( $\beta = 0.22$ ;  $p < .05$ ), the RECATS-Overestimation of the negative consequences of being alone (REC-A;  $\beta = 0.19$ ;  $p < .05$ ), and the RECATS-Overestimation of the negative consequences of being in the wrong relationship subscale (REC-R;  $\beta = 0.18$ ;  $p < .05$ ) emerged as significant predictors, while the DASS-21 was no longer a significant predictor when entering the other variables.

#### 3.3.2. PROCSI

In the first step of the hierarchical multiple regression analysis predicting PROCSI scores, DASS-21 and OBQ-20 subscale scores did not explain a significant proportion of variance and none of the considered variables emerged as a significant predictor. In the second step, entering all the FMPS and RECATS subscale scores, the variance explained significantly increased ( $R^2$  change = 0.24;  $p < .001$ ). This indicates that FMPS and RECATS subscales accounted for an additional 24% of the variance in PROCSI scores when the variance explained by the DASS-21 and OBQ-20 subscales was controlled. The final model accounted for 34% of the variance and was statistically significant ( $R^2 = .33$ ;  $p < .001$ ). In this model the REC-R ( $\beta = 0.42$ ;  $p < .001$ ) emerged as a unique significant predictor, while all the other variables were not significant predictors.

## 4. Discussion

Relationship obsessive-compulsive disorder is an understudied presentation of OCD, which has been associated with negative personal and relational consequences (e.g., Doron et al., 2016; Doron & Mizrahi et al., 2014). A variety of beliefs have been implicated in the development and maintenance of ROCD symptoms including OCD-related beliefs and more specific maladaptive relationship beliefs. In this study, we examined the unique contribution of these beliefs in the prediction of relationship-centered and partner-focused ROCD symptoms in participants with a self-declared diagnosis of this presentation of OCD. Our findings showed that perfectionistic concern over mistakes and doubts about actions, catastrophic beliefs regarding being in the wrong relationship and of being alone were unique predictors of relationship-centered ROCD symptoms over and above mood symptoms. Only catastrophic fears of being in the wrong relationships predicted partner-

**Table 1**  
Descriptive statistics and Pearson's correlations among the study measures (n = 124).

Measure	M	SD	SK	KU	1	2	3	4	5	6	7	8	9	10	11	12
1. ROCI	30.73	7.62	-0.48	0.57	-											
2. PROC SI	18.65	14.79	0.76	-0.09	0.36**	-										
3. DASS-21	35.01	13.44	-0.08	-0.91	0.46**	0.20*	-									
4. OBQ-20-T	22.41	7.31	-0.30	-0.79	0.46**	0.25**	0.61**	-								
5. OBQ-20-R	22.34	6.96	-0.34	-0.44	0.28**	0.15	0.39**	0.67**	-							
6. OBQ-20-I	24.85	7.53	-0.56	-0.77	0.44**	0.17	0.49**	0.74**	0.59**	-						
7. FMPS-CMD	46.57	11.27	-0.44	-0.28	0.51**	0.31**	0.45**	0.61**	0.52**	0.55**	-					
8. FMPS-O	19.27	5.64	0.09	-0.46	0.07	-0.08	0.10	-0.01	0.12	-0.05	0.11	-				
9. FMPS-PS	21.50	6.25	0.06	-0.81	0.29**	0.30**	0.23**	0.29**	0.36**	0.22*	0.61**	0.29**	-			
10. FMPS-PEPC	20.47	8.04	0.66	-0.33	0.28**	0.34**	0.34**	0.37**	0.42**	0.26*	0.54**	0.01	0.57**	-		
11. REC-A	25.42	8.81	-0.14	-0.90	0.37**	0.07	0.32**	0.37**	0.33**	0.29**	0.23*	0.05	0.06	0.15	-	
12. REC-S	29.64	7.82	-0.52	-0.55	0.40**	0.17	0.43**	0.44**	0.39**	0.43**	0.38**	0.02	0.18*	0.20*	0.59**	-
13. REC-R	32.73	5.71	-0.68	-0.92	0.41**	0.46**	0.28**	0.28**	0.24**	0.24**	0.50**	0.13*	0.33**	0.30**	0.18*	0.34**

Note: M = Mean score; SD = Standard deviation; SK = Skewness; KU = Kurtosis; ROCI = Relational Obsessive-Compulsive Inventory; PROC SI = Partner-Related Obsessive-Compulsive Symptoms Inventory; DASS-21 = Depression Anxiety Stress Scales-21; OBQ-20 = Obsessive Beliefs Questionnaire-20; OBQ-20-T = Overestimation of Threat; OBQ-20-R = Responsibility; OBQ-20-I = Importance/Control of Thoughts; FMPS = Frost Multidimensional Perfectionism Scale; FMPS-CMD = FMPS-Concern Over Mistakes and Doubts About Actions; FMPS-O = FMPS-Organization; FMPS-PS = FMPS-Personal Standard; FMPS-PEPC = FMPS-Parental Expectations and Criticism; REC-A = RECATS-overestimation of the negative consequences of being alone; REC-S = RECATS-overestimation of the negative consequences of separating with one's partner; REC-R = RECATS-overestimation of the negative consequences of being in the wrong relationship.

\*  $p < .05$ .

\*\*  $p < .01$ .

focused ROCD symptoms.

Consistent with previous findings (Doron et al., 2012a, 2012b; Melli & Carraresi, 2015), our results showed small to moderate correlations between relationship-centered ROCD symptoms, inflated responsibility, overestimation of threat and importance/control of thoughts beliefs. However, these beliefs were only weakly associated with partner-focused ROCD symptoms. Further, when controlling for general distress, these beliefs no longer contributed to the prediction of ROCD symptoms. This suggests that OCD-related beliefs mainly contribute to the maintenance of ROCD symptoms by increasing general distress including depression, anxiety and stress symptoms. Indeed, previous findings link OCD-related beliefs with increased mood symptoms (OCCWG, 2005). Further, Doron et al. (2016) found that individuals with ROCD reported slightly higher depression symptoms than OCD, such that individuals with ROCD showed more severe depression symptoms than community controls, with OCD clients scoring higher than the community but not differing significantly from either group.

Perfectionism was suggested to be particularly related to ROCD symptoms. Consistent with this, all perfectionism's dimensions - as assessed by the FMPS - displayed moderate associations with relationship-centered and the partner-focused ROCD symptoms, except for the organization subscale. As found previously with non-clinical participants (Melli & Carraresi, 2015), the concern over mistakes and doubts about actions dimension was strongly associated with relationship-centered ROCD symptoms, but only moderately associated with partner-focused ROCD symptoms. In fact, this dimension was the only perfectionism dimension to emerge as a unique predictor for relationship-centered ROCD symptoms. Unexpectedly, none of the perfectionism dimensions assessed were uniquely associated with partner-focused ROCD symptoms.

The concern over mistakes and doubts about actions subscale of the FMPS reflects the need to do things 'right', the tendency to interpret mistakes as failures and negative emotional reactions to failure (Flett, Sawatzky, & Hewitt, 1995). Our findings are consistent with the proposition that when applied to intimate relationships, such tendencies are likely to increase relationship-centered ROCD symptoms. The propensity to interpret common relationship 'mistakes' (e.g., conflict or misunderstanding) as failures, for instance, is likely to increase relationship doubts and preoccupations. In fact, relationship-centered ROCD symptoms have been previously associated with over-reactivity of self-worth in the relationship domain (i.e., relationship contingent self-worth), particularly when coinciding with attachment anxiety

(Doron, Szepeswol, Karp, & Gal, 2013). Similarly, the need to do things correctly may increase repeated evaluations of the rightness of the relationship, a core mechanism maintaining relationship-centered ROCD symptoms. Moreover, this perfectionism dimension is characterized by inward self-focused assessment of one's actions and therefore may explain the smaller associations found between this perfectionism dimension and partner-focused ROCD symptoms.

Replicating a previous study with clinical participants (Doron et al., 2016), relationship-centered ROCD symptoms were associated with maladaptive relationship beliefs including catastrophic interpretations of being in the wrong relationship, being alone and separating from your partner. Moreover, together with perfectionistic concerns about mistakes, catastrophic beliefs regarding being in the wrong relationship and being alone were the only unique predictors of relationship-centered ROCD symptoms in our final model. This suggests that, challenging such catastrophic beliefs in therapy may be crucial for breaking the ROCD maintenance cycle. Indeed, individuals presenting with ROCD symptoms often report fears of being forever trapped in a relationship reminiscent of their parent's dysfunctional relationship (Doron & Derby, 2017). Such fears may increase selective attention to negative relationship experiences that self-perpetuate. In this context, fear of being alone may further increase distress by leading to feelings of being entrapped in an unsatisfying relationship.

Our results suggest that the only beliefs associated with partner-focused ROCD symptoms is catastrophic fears of being in the wrong relationship. In this case, fear of being in the wrong relationship may be associated with the two facets of fear of regret often described by clients with partner-focused ROCD symptoms. On the one hand, such individuals describe fear of they will regret deciding to stay with the wrong partner (i.e., a better partner maybe out there waiting). On the other hand, they fear regretting leaving the partner they are with (i.e., maybe my current partner is the love of my life). Although consistent with previous findings, our results suggest that more work needs to be done in order to identify additional beliefs that may underlie partner-focused ROCD. Although both presentations of ROCD are highly correlated cross-sectionally and over time (e.g., Doron et al., 2012b; Szepeswol et al., 2016) they differ in their phenomenology and associated features (Doron, Derby et al., 2014). They may therefore share only some of their development and maintenance mechanisms.

Some limitations of the current study have to be considered. Although a relatively rigid inclusion criteria was used, all the participants were recruited online and self-declared of having received a

**Table 2**

Hierarchical multiple regression analyses predicting relational obsessive compulsive disorder symptomatology from general distress, obsessive beliefs, perfectionism and maladaptive relational beliefs (n = 124).

Predictor	Step 1	Step 2
<b>Criterion: ROCI</b>		
$\Delta R^2$	0.28***	0.13**
DASS-21	0.27(0.06)**	0.17(0.06)
OBQ-20-T	0.19(0.14)	0.08(0.14)
OBQ-20-R	– 0.08(0.12)	– 0.19(0.12)
OBQ-20-I	0.21(0.12)	0.16(0.12)
FMPS-CMD		0.22(08)*
FMPS-O		0.01(0.11)
FMPS-PS		0.05(0.13)
FMPS-PEPC		– 0.01(0.09)
REC-A		0.19(0.08)*
REC-S		0.02(0.10)
REC-R		0.18(0.11)*
<b>Criterion: PROCSI</b>		
$\Delta R^2$	0.07	0.24***
DASS-21	0.07(0.12)	– 0.01(0.12)
OBQ-20-T	0.25(0.32)	0.21(0.30)
OBQ-20-R	– 0.03(0.26)	– 0.11(0.25)
OBQ-20-I	– 0.03(0.27)	– 0.02(0.25)
FMPS-CMD		– 0.13(0.18)
FMPS-O		– 0.16(0.23)
FMPS-PS		0.18(0.27)
FMPS-PEPC		0.16(0.20)
REC-A		– 0.03(0.17)
REC-S		0.01(0.21)
REC-R		0.42(0.24)***

Note: Standard errors in parentheses; ROCI = Relational Obsessive-Compulsive Inventory; PROCSI = Partner-Related Obsessive-Compulsive Symptoms Inventory; DASS-21 = Depression Anxiety Stress Scales-21; OBQ-20 = Obsessive Beliefs Questionnaire-20; OBQ-20-T = Overestimation of Threat; OBQ-20-R = Responsibility; OBQ-20-I = Importance/Control of Thoughts; FMPS = Frost Multidimensional Perfectionism Scale; FMPS-CMD = FMPS-Concern Over Mistakes and Doubts About Actions; FMPS-O = FMPS-Organization; FMPS-PS = FMPS-Personal Standard; FMPS-PEPC = FMPS-Parental Expectations and Criticism; RECATS-NCBA = REC-A = RECATS-overestimation of the negative consequences of being alone; REC-S = RECATS-overestimation of the negative consequences of separating with one's partner; REC-R = RECATS-overestimation of the negative consequences of being in the wrong relationship.

\*  $p < .05$ .

\*\*  $p < .01$ .

\*\*\*  $p < .001$ .

ROCD diagnosis. Furthermore, about 10% of the participants did not score above the cut-offs on the ROCI/PROCSI. This may limit the generalizability of our results, as we cannot conclusively state the sample meet clinical diagnoses and is representative of the clinical population. Future studies may benefit from adding clinician-rated interviews such as the Y-BOCS-II (Melli, Avallone et al., 2015; Storch et al., 2010) to assess clinical diagnosis. Further, as our study did not include a clinical control group strong conclusions regarding the specificity of our predictors to ROCD cannot be made.

Our study was cross-sectional and therefore prevents any causal conclusions. Although our findings identified unique cognitive predictors of ROCD symptoms, we cannot assert a particular temporal order of variables. Future studies with ROCD populations should track these beliefs during treatment to see whether changes in these beliefs precede any reduction in symptoms. In addition, our analyses included several inter-correlated predictors. Although suitable to test our hypotheses regarding the relative contribution of various cognitive factors, small changes in the pattern of results could lead to different outcomes. As such, findings should be cautiously interpreted and additional research is needed to confirm the role of these specific predictors.

The Italian version of the RECATS has not been subjected to a

thorough and detailed validation study. Nevertheless, the translations procedures undertaken were rigorous, the reliability indices adequate and similar to the original version. Finally, in our study other important variables that may play a role in ROCD, such as attachment insecurity and dyadic adjustment (Doron et al., 2013), were not considered. Future research could benefit from the inclusion of other tools assessing these potential factors of vulnerability.

Despite these limitations, the current findings have important theoretical and clinical implication. Indeed, even if ROCD symptoms share clinical features with OCD characteristics in general, relationship-centered and partner-focused ROCD symptoms seems to have specific cognitive predictors which could be considered during assessment and treatment. In particular, given the central role of the preoccupation upon the negative consequences of being in the wrong relationship and the worry about the one's own actions, CBT interventions might specifically address these factors.

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