INTRUSIVE THOUGHTS IN OBSESSIVE COMPULSIVE PATIENTS, RELAPSED OBSESSIVE COMPULSIVE PATIENTS AND NON-CLINICAL PARTICIPANTS: A STUDY IN FRANCE

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Abstract

Objective: To record and compare appraisals of and strategies for coping with unwanted intrusive thoughts reported by patients with relapsed obsessive compulsive disorder (R-OCD), treatment-naïve patients with OCD, and non-clinical participants (matched for age, gender and educational level) using the International Intrusive Thoughts Interview Schedule (IITIS).

Method: The IITIS was used to evaluate nine appraisals of the unwanted, intrusive thoughts (UITs) encountered in an R-OCD group (n=16), a treatment-naïve OCD group (n=19) and a non-clinical control group (n=17). It also enabled us to evaluate ten strategies for controlling UITs and to assess the nature and prevalence of seven types of UITs. Comorbidities were checked in the short, structured Mini-International Neuropsychiatric Interview. The participants also filled out the Vancouver Obsessional Compulsive Inventory (to assess the intensity of OCD), the Obsessive Beliefs Questionnaire (to assess obsessive compulsive cognitive patterns) and the Beck Depression Inventory (to measure the intensity of the depressive mood).

Results: The three groups did not differ in terms of intrusions about doubt. The R-OCD and treatment-naive OCD groups differed significantly from the controls with regard to intrusive thoughts about contamination and harm/injury/aggression. The two patient groups were similar with regard to contamination but there was a difference for harm/injury/aggression (R-OCD > OCD). The most distressing type of intrusive thought was reported to be harm/injury/aggression in the R-OCD group, contamination in the treatment-naive OCD group and doubt in the control group. The most distressing intrusive thought appeared to be more invalidating in the two patient groups than in the control group. Overall, the mean appraisal scores were higher in the R-OCD group than in the treatment-naïve OCD group, although these differences were not statistically significant. The R-OCD group differed significantly from the control participants with regard to all appraisals. The same was true result for the treatment-naïve OCD group, except for the appraisal of responsibility. This appraisal did not differentiate the treatment-naïve OCD group from the control participants. The control strategies were similar in the R-OCD and treatment-naive OCD groups with the exception of rituals, and both patient groups differed significantly from the control group in this respect. The treatment-naïve OCD group performed significantly more rituals than the R-OCD group. The R-OCD group differed significantly from the control participants with regard to six control strategies (distraction; replace the UIT with another thought; tell myself "stop"; ask another people; ritual and avoidance). The treatment-naïve OCD group differed significantly from the control participants with regard to four control strategies (distraction; tell myself "stop"; ritual and avoidance). Lastly, the two patient groups reported more frequent failure of control than the nonclinical group; again, there was no difference between the R-OCD and treatment-naive OCD groups.

Conclusions: Overall, the R-OCD and treatment-naive OCD groups had similar profiles, although there were qualitative differences between the two. In contrast to our starting hypotheses, the patient groups had similar appraisals in terms of the most distressing UITs and the control strategies (with the exception of rituals). We discuss our results and relevant element of the literature data with regard to maximizing the efficacy of ERP in the long term.

Key words: relapsed patients, obsessive compulsive disorder, intrusive thought. cognitive behaviour therapy

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Introduction

Obsessive compulsive disorder (OCD) is usually treated with cognitive behavioural therapy (CBT) and/or pharmacological approaches. The effectiveness of CBT (specifically exposure and response prevention, ERP) has been demonstrated by meta-analyses (e.g. Abramowitz 1996, Eddy et al. 2004) and controlled studies (e.g. Foa et al. 2005). Studies of ERP indicate that approximately 75% of the OCD patients who complete treatment ("completers") show a significant reduction in symptoms (Kozak 1999). However, completers are always exposed to a risk of relapse (Foster and Eisler 2001), and rates of around 25% have been observed after ERP therapy (Hiss et al. 1994). Cognitive therapy for OCD has been developed to (i) target distorted cognition and dysfunctional beliefs and (ii) provide a less anxiety-provoking alternative to ERP. The effectiveness of cognitive therapy is less well established than that of CBT, although the results of controlled studies (e.g. Cottraux et al. 2001, Whittal et al. 2005) suggest that it is similar to that of ERP. Fisher and Wells (2005) performed a clinical significance analysis of five CBT studies in OCD. They found that following ERP therapy, symptoms were unchanged in 41% of patients, less present in 19% and absent (corresponding to recovery) in 40%. After cognitive therapy, symptoms were unchanged in 36% of patients, less present in 16% and absent in 48% (Fisher and Wells 2005). The cognitive therapy protocol consisted of twenty 60-minute sessions. The ERP protocol consisted of 20 sessions of 90 to 120 minutes. There were homework assignments in both protocols. The cognitive approach (e.g. Salkovskis 1985) focuses on dysfunctional beliefs, whereas the behavioural approach (ERP) focuses on obsessions and compulsions. In routine clinical practice, practitioners use the cognitive approach to decrease the impact of dysfunctional thoughts and to facilitate ERP. Treatment consists of alternating ERP sessions and a cognitive approach centred on dysfunctional beliefs. This is referred to as CBT because the ERP treatment modifies dysfunctional thoughts. Cognitive therapy (with a restructuring of the person's inner discourse) is accompanied by behavioural experiments that test the inanity of beliefs in everyday life.

It is now well established that the intrusion of unwanted thoughts constitutes a normal, universal experience (Berry and Lashey 2012). Recently, an international study assessed the nature and prevalence of unwanted intrusive thoughts (UITs) in non-clinical participants by administering the novel International Intrusive Thoughts Interview Schedule (IITIS; Research Consortium on Intrusive Fear 2007). The IITIS was administered to 777 students in 13 different countries. The results showed that 93.6% of the participants had experienced UITs during the previous three months. Intrusion related to doubt were the most frequently cited category (Clark et al. 2014, Radomsky et al. 2014). Cognitive theory suggests that people with OCD will tend to interpret or appraise an intrusive thought as immoral or dangerous (Whittal and Mc Lean 1999).

OCD is a treatment-resistant disorder, and is notably more difficult to treat than anxiety disorders. This is one reason why OCD was separated from anxiety disorders in DSM-5 and placed in a new category: obsessive-compulsive and related disorders (American Psychiatric Association (APA) 2013). Hence, CBT seems to be only partially effective, and ERP is sometimes difficult to apply in clinical practice (Kozak 1999, Albert et al. 2013). In clinical practice in France, patients consult every fortnight (on average) because consultations with a psychologist are not reimbursed. Most ERP therapy sessions take place in the psychotherapist's office. Firstly, psychotherapists who are based in a hospital are not allowed to go outside the institution and provide support elsewhere (in the patient's home, for example). Secondly, performing ERP therapy outside or in the patient's home requires more time and thus may be less cost-effective. Lastly, some psychotherapists have a form of prejudice against ERP therapy; they find it difficult to induce severe anxiety in their patient, and consider ERP therapy to be "the cruelest cure" (Olatunji et al., 2009). Hence, a small number of psychotherapists prefer to include breathing exercises or relaxation with the ERP session, which thus compromises the quality of treatment provision. The challenge for the practitioner is to understand the reasons for relapse or treatment resistance, so that he/she can fine-tune the therapy. Craske et al. studied good practice in ERP therapy with regard to maximizing the long-term efficacy (i.e. Craske et al., 2014; Philippot et al., 2015). "The more the expectancy (regarding the frequency and intensity of aversive outcomes) can be violated by experience, the greater the inhibitory learning" (Craske et al., 2014 p. 12). This appears to be important because the patient expects to be able to avoid the return of fear when faced with the anxiety-inducing situation. Hence, the objective of the present study was to record and compare the appraisals of UITs and control strategies reported by relapsed OCD patients (the R-OCD group), treatment-naive patients with OCD and nonclinical control participants, using the International Intrusive Thoughts Interview Schedule (IITIS). The IITIS was used to assess nine appraisals of the UITs (obsessions) and ten control strategies in the three groups. Relapse in OCD has been defined as a return to pre-treatment symptom scores after an initial response to CBT (Mataix Cols et al. 2015). Our R-OCD patients had undergone at least one course of CBT and were hospitalized for further intensive CBT. The patients in our treatment-naive OCD group had never undertaken CBT or were in the early stages of a course of CBT. We hypothesized that (i) appraisals of cognitive intrusions would differ when comparing the R-OCD and OCD participants, and (ii) the control strategies used by R-OCD patients would differ from those used by the treatment-naive OCD group.

Methods

Procedure

The International Intrusive Thoughts Interview Schedule (IITIS) was used to assess the nature and prevalence of seven types of UITs encountered by the three study groups. The primary objective of the present study was to record and compare appraisals and UIT control strategies in the R-OCD and OCD groups and in non-clinical participants, using the IITIS. Administration of the MINI enabled us to control for the diagnosis of OCD and any other comorbid disorders in the two patient groups. The participants in the R-OCD were recruited at a private clinic (Lyon, France). The participants in the treatment-naive OCD group were recruited at the same private clinic or the Savoie-Mont-Blanc University Psychology Centre (Chambéry, France). Non-clinical participants were recruited at the University Psychology Centre. All participants gave their written, informed consent to participation in the study. Consenting participants were interviewed by a team of psychologists who had been trained in

administration of the IITIS by one of the present study's investigators (MB). The study was approved by the university's investigational review board (reference number: 20146; approval date: February 25, 2014). All participants completed the Vancouver Obsessional-Compulsive Inventory, the Obsessive Beliefs Questionnaire and the Obsessive Beliefs Questionnaire, and received a brief debriefing after the psychometric instruments had been administered.

Participants

We enrolled 35 patients with a primary diagnosis of OCD (16 in the R-OCD group, 10 men and 6 women; 19 in the treatment-naive OCD group, 12 men and 7 women) and 17 control participants (7 men and 10 women) matched for age, gender and educational level. The R-OCD participants had undergone at least one course of CBT, whereas the treatment-naive OCD patients had never undergone course of CBT. The average number of "CBT" sessions of the R-OCD group was 50 (range: 25 to 100). Nine R-OCD patients (56%) reported having undergone two courses of psychotherapies (the mean number of sessions was 42 (range: 30 to 70)), three patients reported having undergone one course (the mean number of sessions was 32 (range: 25 to 40)), two patients reported having undergone three courses (the mean number of sessions was 60 (range: 40 to 80)), and two reported having undergone five courses (the mean number of sessions was 68 (range: 75 to 100)). Three patients could not describe the type of CBT received (two of the patients having received two courses of treatment, and one having received course of treatment), three described ERP (two of the patients having received two courses of treatment, and one having received course of treatment), and ten described a mixture of ERP and cognitive therapy (CBT). To be more precise, the latter group comprised five patients having received two courses of psychotherapy, two having received five courses of psychotherapy, two having received three courses of psychotherapy, and one having received only one course of psychotherapy. The mean (standard deviation (SD)) time since the end of the previous course of CBT was 25.62 (31.58) months (range: 8 to 120). Thirteen patients (81%) had not been treated in the previous two years. The previous course of treatment had finished 3 years previously for one patient, 7 years previously another and 10 years previously for another. All the patients considered that the last course of treatment had been effective: the mean (SD) percentage improvement was 34.68% (15.43) (range: 15 to 60), and the mean (SD) duration of the improvement was 4.00 (3.48) months (range: 1 to 12). Most patients were only seen once, and so we did not determine the OCD subtype. However, patients with the hoarding subtype of OCD were excluded from the study (n = 1).

Measures

The *IITIS* (Research Consortium on Intrusive Fear 2007) is used to determine the presence or absence of UITs during the previous three months. It focuses on seven specific types of UITs in OCD: contamination/dirt/disease intrusions; harm/injury/aggression intrusions; doubting intrusions; unwanted religious or immoral intrusions; unwanted sexual intrusions; intrusions of being a victim of violence, and "other" intrusions (i.e. those not falling into the previous categories). The participant has to state whether or not he/she experiences UITs from the various categories. If the answer is "yes", the participant has to report (on a 6-point Likert scale) the frequency of occurrence, the degree of interference with his/her daily life, his/her will to get the thought out of his/her mind, and the difficulty experienced in getting it out of his/her mind. Next, the participant is asked to state his/her most distressing intrusive thought, and evaluates it according to different appraisals (overestimation of the threat, importance of thought, intolerance of anxiety, need to control, responsibility, intolerance of uncertainty, perfectionism, thought-action fusion, and unacceptability/ego-dystonicity) on a 0 (not at all) to 5 (absolutely) scale. The interviewer asks the participant to evaluate the control strategies used with the most distressing thought by choosing among a list and rating the strategy on a scale of 0 (never used) to 5 (frequently used). Lastly, the participant has to state whether he/she has experienced a "failure of control". If the answer is "yes", the participant is asked to rate six reactions relative to the difficulty of controlling the most intrusive thought, on a scale from 0 (not at all) to 5 (absolutely). The IITIS was used in a multinational study of the prevalence and characteristics of UITs in 777 students from 13 different countries (including France) (Clark et al. 2014, Radomsky et al. 2014).

The *Vancouver Obsessional-Compulsive Inventory* (VOCI; Thordarson et al. 2004) is a self-reported measure of a broad spectrum of OCD symptoms. The VOCI is composed of six subscales: (a) checking, (b) contamination, (c) obsessions, (d) hoarding, (e) "just right", and (f) indecisiveness. The English version has good psychometric properties. The reliability and validity of the French-language version have also been demonstrated (albeit in a non-clinical sample) (Radomsky et al. 2006).

The *Obsessive Beliefs Questionnaire* (OBQ; Obsessive Compulsive Cognitions Working Group 2001) assesses beliefs related to OCD. The 44-item OBQ comprises three subscales: responsibility/overestimation of threat, perfectionism/uncertainty, and importance/control of thoughts. The French-language version has been validated in OCD patients, people with anxiety, and non-clinical participants (Julien et al. 2008).

The *Beck Depression Inventory* (BDI, Beck et al. 1979) measures the intensity of depression. The French version has been validated in a group of university students (Bourque and Beaudette 1982).

Statistical analyses

We used Statistica 7 software for statistical analyses. The effect of categorical variables (gender, type of intrusion) was examined by means of a X^2 test. Demographic and clinical differences between the three groups were analyzed using H test. The difference between two groups was examined by means of a U test.

Results

Comparison of the groups

The three groups were similar in terms of the gender ratio ($X^2 = 2.18$; $p = 0.33$). The mean (SD) age was 37.93 (11.83) in the R-OCD group, 34.79 (7.86) in the treatment-naive OCD group and 33.82 (15.80) in the control group. The intergroup differences in mean age were not significant ($H = 1.63$; $p = 0.44$). The mean educational level was 13.75 (2.46) years of formal education in the R-OCD group, 14.68 (3.52) years in

the treatment-naive OCD group and 15.76 (2.99) years in the control group; the intergroup differences were not significant ($H= 3.65$; $p= 0.16$). The mean disease duration was 19.00 years (12.99) in the R-OCD group (range: 4 to 40) and 15.66 (12.17) in the treatment-naive OCD group (range: 1 to 36), with no significant difference between the two ($U = 128.00$; $p= 0.42$). Of the 19 participants in the treatment-naive OCD group, seven were taking antidepressants or other medications for this disorder, and 12 were not taking any medications. Of the 16 participants in the R-OCD group, six were taking antidepressants or other medications for their disorder. The two groups were similar ($X^2 = 0.001$; $p = 0.96$) in terms of medication use. In the two patient groups, comorbidity and OCD were evaluated in the Mini International Neuropsychiatric Interview (MINI; Lecrubier et al. 1997). The comorbidity profile was similar in the two patient groups ($X^2 = 1.22$; $p = 0.26$). Thirteen treatment-naive OCD participants and

presented with dysthymic disorder, another presented with post-traumatic stress disorder and a third presented with anorexia nervosa.

Self-questionnaires

The results for the VOCI, OBQ and BDI are summarized in **table 1**. There were significant differences in the total VOCI score and all subscale scores (except for "obsessions") between the three groups. There was a significant difference between the two patient groups and the non-clinical group with regard to obsessional beliefs and depression. There were no differences between the R-OCD and treatment-naive OCD groups in terms of the total VOCI score, the VOCI subscale scores, the total OBQ score, the OBQ subscale scores and the BDI score (all the U tests were non-significant; $p >0.05$ for all).

Table 1. *Self- questionnaire scores*

	R-OCD patients (n=16)	OCD patients (n=19)	Control participants (n=17)	H
VOCI	Mean (SD) 91.87 (40.13)	Mean (SD) 85.89 (31.76)	Mean (SD) 24.05 (18.59)	$H = 28.16$**
Checking	24.00 (9.85)	21.94 (9.57)	8.17 (4.66)	$H = 24.21$**
Contamination	16.25 (11.54)	24.89 (14.80)	2.64 (3.69)	$H = 25.65$**
Obsessions	7.56 (8.50)	6.05 (7.24)	3.52 (4.27)	$H = 1.58$
Hoarding	19.43 (12.18)	13.15 (9.66)	3.00 (3.85)	$H = 21.39$**
Just right	12.93 (7.23)	9.31 (7.60)	3.11 (3.46)	$H = 14.66$**
Indecisiveness	11.68 (5.47)	10.52 (4.93)	3.58 (3.41)	$H = 19.47$**
OBQ	175.31 (53.88)	172.57 (60.44)	94.52 (18.38)	$H= 21.96$**
Responsibility	71.68 (27.19)	64.89 (27.41)	33.52 (8.72)	$H = 16.98$**
Perfectionism	62.56 (21.91)	67.52 (23.24)	41.88 (11.11)	$H = 13.97$**
Importance of the thought	41.06 (20.01)	40.15 (19.32)	19.11 (5.54)	$H = 14.70$**
BDI	19.06 (8.80)	17.83 (9.06)	4.88 (4.48)	$H = 27.20$**

**: $p< 0.0001$
VOCI: Vancouver Obsessive Compulsive Inventory; OBQ: Obsessive Compulsive Questionnaire; BDI: Beck Depression Inventory

eight R-OCD participants had comorbidities. In the treatment-naive OCD group, eight participants had one comorbidity associated with the primary diagnosis of OCD, and five presented two related comorbidities; the most common disorders in the group were social phobia (n = 6), panic disorder with agoraphobia (n = 4), generalized anxiety disorder (n = 3), panic disorder (n= 3), dysthymic disorder (n=1), and agoraphobia (n= 1). In the R-OCD group, three participants presented one associated disorder, four had two related comorbid disorders and one participant had three related disorders. The most common disorders were: social phobia (n = 6), panic disorder with agoraphobia (n = 3), and panic disorder (n = 1). One R-OCD participant

The IITIS

Although all participants reported at least one type of intrusion, R-OCD and treatment-naive OCD patients had more UITs than control participants (**table 2**). There was a significant difference number of UITs between the patient groups (R-OCD and OCD) on one hand and the control group on the other ($H = 20.16$ $p < 0.0001$), although there was no significant difference between the R-OCD and OCD groups in this respect ($U = 105.00$; $p= 0.11$).

The numbers of participants who experienced UITs in the seven IITIS categories are reported in **table 3.** In control participants, the most common intrusion was doubt (56%). In the two patient groups, three types of

Table 2. *Intrusive thoughts in R-OCD, treatment-naive OCD and control participants (according to the IITIS)*

	R-OCD patients (n=16)	OCD patients (n=19)	Control participants (n=17)
Number of intrusive thoughts	57	58	27
Mean (SD)	3.56 (1.15)	3.05 (1.64)	1.58 (0.87)

intrusion were prevalent: contamination, harm/injury/ aggression and doubt. The most common intrusion type was doubt (26%) followed by contamination (22%) in the treatment-naive OCD group. Doubt (25%) and harm/injury/aggression (25%) were the most prevalent in the R-OCD group. The proportion of participants reporting intrusions about doubt was similar in the three groups ($X^2 = 0.74$; $p = 0.68$). There was a significant difference between the three groups for contamination ($X^2 = 13.46$; $p = 0.001$) and for harm/ injury/aggression ($X^2 = 13.59$; $p = 0.001$). There was no difference between the two patient groups ($X^2 = 0.13$; $p = 0.71$) in terms of contamination but there was a significant difference ($X^2 = 4.90$; $p = 0.02$) for harm/ injury/aggression (R-OCD > OCD). The mean level of endorsement for the associated frequency, interference/ distress, perceived importance of suppressing UITs and difficulty in suppressing UITs were calculated for all IITIS thought categories and in all three groups (**table 4**). On average, UITs were equally frequent in the three groups. However, we observed significant differences between the three groups for interference/distress, and the importance of and difficulty in suppressing UITs. Unsurprisingly, UITs interfered more with daily life for the patients than for the controls. Relative to the control participants, the two patient groups reported that (i) UITs caused more interference and distress in their daily life (ii) more important for them to get UITs out of their mind, and (iii) more difficult not to think about UITs (p

≤ 0.0001). However, there was no significant difference between the two patient groups in this respect.

We evaluated the most distressing UIT in the three study groups (**table 5**). The most distressing type of UIT was harm/injury/aggression in the R-OCD group, contamination in the treatment-naive OCD group and doubt in the control group.

Next, we compared the nine appraisals (overestimated threat, importance of thought, intolerance of anxiety, need to control, responsibility, intolerance of uncertainty, perfectionism, thought-action fusion, and unacceptability/ego-dystonicity) of the most distressing UIT (**table 6**). There was a significant difference between the three groups for all appraisals of the most distressing UIT. Likewise, there was a significant difference between the R-OCD group and the control group for all the appraisals ($p \leq 0.01$). There was a significant difference between the treatment-naive group on one hand and the control group on the other for all the appraisals ($p \leq 0.02$) other than responsibility. There was no significant difference between the R-OCD and OCD groups. In summary, the most distressing UIT appeared to be more perturbing and disturbing for the two patient groups than for the control participants.

Our findings on the control strategies used by participants to get UITs out of their mind are reported in **table 7**. Five control strategies (replace the UIT with another thought, reassurance, neutralization, try to

Table 3. *Number of participants having experienced each type of intrusion*

	R-OCD patients (n=16)	OCD patients (n=19)	Control participants (n=17)
Contamination/dirt/disease	10	13	2
Harm/injury/aggression	14	10	4
Doubting	14	15	15
Unwanted immoral intrusions	1	3	1
Unwanted religious intrusions	3	3	0
Unwanted sexual intrusions	3	3	0
Intrusions of being a victim of violence	3	5	2
"Other" intrusions	9	6	3

Table 4. *Mean (SD) scores for frequency of UITs, interference in daily life, perceived importance of suppressing UITs, and difficulty in suppressing UITs.*

	R-OCD patients (n=16)	OCD patients (n=19)	Control participants (n=17)	H
Frequency	4.22 (0.51)	4.18 (0.98)	4.17 (0.74)	$H = 0.30$
Interference	4.12 (0.65)	3.92 (0.68)	2.01 51.14)	$H = 24.96^{**}$
Importance	4.27 (0.48)	4.34 (0.65)	2.48 (1.29)	$H = 19.08^{**}$
Difficulty	4.16 (0.70)	4.13 (0.69)	2.15 (1.23)	$H = 23.46^{**}$

**: $p < 0.0001$

Table 5. *Most distressing types of UIT*

	Contamination	Harm	Doubt	Unwanted religion	Unwanted immoral	Sexual	Being a victim	Other
R-OCD	1	10	2	0	0	1	0	2
OCD	10	4	3	0	1	0	0	1
Controls	2	1	11	1	0	0	0	2

reason, and do nothing) were used to the same extent by the patients and control participants. There was a significant difference between the R-OCD group and the control group ($p \leq 0.05$) for the other five appraisals of the most distressing intrusive thought (distraction; tell myself "stop"; ask other people; ritual and avoidance) and for the "replace the UIT with another thought" control strategy. There was a significant difference between the treatment-naive OCD group and the control group for four appraisals of the most distressing intrusive thought (distraction; tell myself "stop"; ritual and avoidance; all $p \leq 0.05$) but not for the "ask other people" control strategy. There were no significant differences between the R-OCD and OCD groups, except for one control strategy (ritual). The treatment-naïve OCD performed more rituals than the R-OCD groups.

Lastly, patients (R-OCD: n = 14; OCD: n = 18) were more likely to report failure of control (of the most distressing intrusive thought) than non-clinical participants were (n = 2). However, there was no significant difference between the R-OCD and OCD groups in terms of their reactions after a failure to control UITs (**Table 8**).

Discussion

This study focused on relapsed OCD patients having completed one or more courses of ERP therapy (R-OCD) and treatment-naive OCD patients (OCD). The two patient groups (R-OCD and OCD) were similar in terms of OCD symptoms (according to the VOCI), obsessional beliefs (according to the OBQ) and depression (according to the BDI). Overall, the patient groups differed from the control group with regard to all these variables. The time since the primary diagnosis (OCD), and the medication and comorbidity profiles were similar in the two patient groups. The numbers of UIT were similar in the two patient groups. As expected, UITs were more frequent in the patient groups than in the control group (Purdon and Clark 1994, Belloch et al. 2004). With regard to the content of the UITs, doubting intrusions were prevalent in the two patient groups and in non-clinical participants – thus confirming previous reports (Belloch et al. 2004, Radomski et al. 2014). For contamination and harm/injury/aggression UITs, there was a significant difference between the patient groups and the control group. There was no intergroup difference for contamination but there was one for

Table 6. *Appraisals of the most distressing intrusions*

	R-OCD patients (n=16)	OCD patients (n=19)	Control participants (n=17)	*H*
Overestimated threat	4.37 (1.40)	3.57 (1.83)	1.29 (1.49)	*H* = 21.57***
Importance of thought	4.75 (0.44)	4.52 (0.61)	2.41 (1.50)	*H* = 27.00***
Intolerance of anxiety	4.56 (0.89)	3.89 (1.44)	1.05 (1.47)	*H* =26.63***
Need to control	4.62 (0.61)	4.68 (0.47)	1.64 (1.61)	*H* = 29.88**
Responsibility	4.37 (1.08)	3.52 (1.80)	2.64 (1.49)	*H* 10.47**
Intolerance of uncertainty	4.37 (0.88)	4.36 (1.01)	2.41 (1.37)	*H* = 22.21***
Perfectionism	3.31 (1.66)	3.47 (1.86)	1.64 (1.86)	*H* = 9.49*
Thought-action fusion	4.12 (1.50)	3.26 (2.10)	1.05 (1.47)	*H* = 15.90***
Ego-dystonicity	3.31 (1.62)	2.47 (1.80)	0.94 (1.63)	*H* = 12.24**

***: $p < 0.0001$; ** $p \leq 0.005$; * $p = 0.008$

Table 7. *Control strategies*

	R-OCD patients (n=16)	OCD patients (n=19)	Control participants (n=17)	*H*
Distraction	2.62 (1.02)	2.57 (1.38)	0.47 (0.94)	*H* = 21.96***
Replace the UIT with another thought	2.18 (1.47)	2.05 (1.84)	1.17 (1.46)	*H* = 4.16
Tell myself "stop"	2.93 (1.12)	2.73 (1.28)	1.64 (1.41)	*H* = 8.90*
Reassurance	2.62 (0.70)	2.63 (1.53)	2.17 (1.74)	*H* = 0.78
Ask other people	3.18 (1.37)	2.31 (2.21)	1.00 (1.58)	*H* = 10.33**
Ritual	3.75 (0.93)	4.21 (1.65)	1.88 (1.96)	*H* = 16.76***
Neutralization	1.81 (1.64)	2.89 (2.10)	1.70 (1.49)	*H* = 3.75
Try to reason	2.62 (0.08)	3.00 (1.41)	2.05 (1.67)	*H* = 3.45
Avoidance	3.56 (1.41)	3.68 (1.60)	0.88 (1.21)	*H* = 23.17 ***
Do nothing	0.62 (1.08)	0.78 (1.51)	0.88 (1.69)	*H* = 0.08

*** $p < 0.0001$; ** $p= 0.005$; * p< *0.05*

Table 8. *Reactions after failure to control an UIT in the two patient groups*

	R-OCD patients (n=14)	OCD patients (n=18)	U test
Misinterpretation of control significance	4.57 (0.64)	3.72 (2.05)	$U = 117.00 \; p = 0.73$
Thought-action fusion/threat appraisals	4.00 (0.78)	3.22 (2.07)	$U = 117.00 \; p = 0.73$
Appraisal of possibility	2.50 (1.22)	2.27 (1.36)	$U = 114.00 \; p = 0.64$
Unrealistic control expectations	4.50 (0.65)	4.16 (0.92)	$U = 98.50 \; p = 0.29$
Inflated responsibility	4.35 (0.63)	3.66 (1.28)	$U = 85.50 \; p = 0.12$
Faulty inference of control	4.21 (1.46)	4.16 (1.46)	$U = 125.50 \; p = 0.98$

harm/injury/aggression UITs: the R-OCD had more harm/injury/aggression UITs than the OCD group. Two earlier studies reported that contamination thoughts are less frequent in a non-clinical population than in OCD patients (Belloch et al. 2004, Garcia-Soriano et al. 2011). A higher frequency of contamination intrusions in OCD patients (relative to non-clinical participants) was also observed in an earlier study of the IITIS (Bouvard et al., 2017). There may have been a qualitative difference between the two groups of OCD patients because the R-OCD group had more harm/injury/aggression intrusions than the treatment-naïve OCD group. In contrast to the literature data (e.g. Rachman and De Silva 1978), we found that UITs were no more frequent for the two OCD patient groups than they were for non-clinical participants. However, the UITs that did occur were more distressing in the patient groups than in the non-clinical group; furthermore, the patients considered that it was more important to get them out of the mind and found it more difficult to stop thinking about. These findings replicated the results of a number of previous studies (Purdon and Clark 1994, Belloch et al. 2004). The similar frequency of UITs in the three groups might be a particular feature of our study population. The R-OCD and treatment-naive OCD groups were similar in terms of the frequency of UITs, the extent to which UITs interfered with daily life, the importance attached to getting UITs out of the mind, and the difficulty in stopping to think about UITs. The type of the most distressing UIT differed in the three groups: it was harm/injury/aggression in the R-OCD group, contamination in the treatment-naive OCD group and doubt in the control (non-clinical) group. This finding confirmed the existence of a qualitative difference between the two groups of OCD with regard to harm/injury/aggression UITs. We wanted to find out whether the "most distressing intrusive thought" corresponded to the subtype of the patient's OCD (e.g. washing, checking, etc.) but decided to use a questionnaire about OCD symptoms (the VOCI) rather than the Yale Brown Obsessive Compulsive Check List (because of the latter's long administration time). The lack of information on the OCD subtype constitutes a study limitation. It is noteworthy that the different VOCI subscale scores (checking, contamination, obsessions, just right, etc.) were similar in the R-OCD and OCD groups.

The most distressing UITs seemed to be more disturbing for the two groups of OCD patients than for the control participants. Concerning the appraisals, the treatment-naive OCD group's profile fell between those of the R-OCD group and the control group. The two patient groups differed significantly from the control participants with regard to eight appraisals (overestimated threat, importance of thought, intolerance of anxiety, need to control, intolerance of uncertainty, perfectionism, thought-action fusion, and ego-dystonicity). Overall, the mean appraisal scores were higher in the R-OCD group than in the treatment-naïve OCD group, although the difference was not statistically significant. One appraisal (responsibility) did not differentiate between the treatment-naive OCD group and the control participants. There was a significant difference between the R-OCD and the control group for responsibility. Our first hypothesis (appraisals of cognitive intrusions would differ in R-OCD vs. OCD participants) was not fully validated.

The three groups used five control strategies of the most distressing intrusive thought (replace the UIT with another thought, reassurance, neutralization, try to reason, and do nothing) to the same extent. There was a significant difference between the R-OCD and control groups with regard to five appraisals (distraction; tell myself "stop"; ask another people; ritual and avoidance) and for the "replace the UIT with another thought" control strategy. There was no difference between the treatment-naive OCD and control groups for the "ask other people" control strategy, but there was a significant difference for the four other strategies. Again, the treatment-naive OCD and R-OCD groups did not differ significantly, except for the "ritual" control strategy: the treatment-naïve OCD performed more rituals than the R-OCD group. It seems that prior ERP therapy had an influence on the UIT control strategy in the R-OCD group: they had fewer rituals than the treatment-naive patients, and were more likely than the non-clinical population to replace the UIT with another thought. The patients were more likely to report failure of control than control participants were. This finding is consistent with the literature data (e.g. Purdon and Clark 1999). There was no difference between the two patient groups in terms of the reactions after a failure to control UITs. Our second hypothesis (control strategies differ in R-OCD patients vs. OCD patients) was partially validated.

In summary, we observed qualitative differences between the R-OCD and treatment-naive OCD groups. Contamination was the most frequent and most distressing UIT for the treatment-naive OCD group, whereas harm/injury/aggression was the most frequent and most distressing UIT for the R-OCD group. The two patient groups did not differ in terms of the other variables, except for one control strategy (rituals). The treatment-naive OCD group (but not the R-OCD group) was similar to the control group with regard to responsibility (appraisal). The participants

in the R-OCD group were more likely to mention beliefs related to "lashing out aggressively against a person" than those in the treatment-naive OCD group. The treatment-naive OCD group (but not the R-OCD group) was similar to the control group with regard to the "replace the UIT with another thought" control strategy. The washing subtype of OCD is easier to treat with CBT than the other subtypes (Buchanan et al. 1996), and it involves the responsibility belief less than the harm/injury/aggression obsession. In courses of CBT, it may be important to take account of the type of the most distressing obsession when seeking to reduce the relapse rate. This dysfunctional belief might be a focal point for the cognitive approach. However, given that the two groups of patients are quite similar, it may be necessary to "maximize exposure therapy". Although ERP therapy is an effective technique, patients can experience a return of fear after treatment (Craske et al., 2014). Hence, to increase the effectiveness of ERP, psychotherapists should merely be satisfied with a drop in anxiety during an exposure session. It might be important for the patient to learn that their beliefs are unfounded during the exposure (thus countering their expectations). ERP therapy should be continued as long as belief in a fearer event persists (i.e. fear of losing control and fear of hurting someone) (Craske et al., 2014). The cognitive approach (designed to diminish the overestimation of the probability of occurrence of a feared event during exposure) may need to be avoided during the exposure or before the session because this reduces the mismatch between the initial expectation and the actual result (Philippot et al., 2015). For a summary of therapeutic strategies for maximizing exposure therapy in the long term, we refer the reader to the article by Craske et al. (2014). Supervised ERP (with the therapist) has better results than non-supervised ERP (Kozak 1999). Intensive ERP during hospitalization is effective in patients with severe refractory OCD (Stewart et al. 2005). Clinical predictors of the response to CBT (Keely et al. 2008) include greater symptom severity, the hoarding subtype and the presence of a personality disorders (e.g. schizotypal personality disorder). In DSM-5 (APA 2013), the hoarding subtype became a new disorder (hoarding disorder) that is separate from OCD and has its own model and treatment program (Steketee and Frost 2003). The finding that greater symptom severity and the presence of a personality disorder were predictive of a worse clinical outcome suggests the need for individually tailored treatment (Keeley et al. 2008). Guidelines for refractory OCD have been published. "The ERP protocol consisted in 17 twice-weekly sessions (each 90-120 minutes), daily homework assignments, between-session phone calls, and included at least two sessions in the patients' home" (Albert et al. 2013 p.21). However, there are few guidelines on relapsing patients. The finding that R-OCD patients had the same overall clinical profile as treatment-naïve OCD patients should prompt the development of novel therapeutic approaches (e.g. a transdiagnostic approach). In cases of relapse, one can never rule out the possibility that CBT has not been correctly applied, has not been applied for long enough or has lacked supervision by the practitioner. To maximize the efficacy of ERP, therapists need to be trained in emotional tolerance and competency needs (Olatunji et al., 2009). In conclusion, the comparison of R-OCD and OCD patients' responses in the IITIS revealed many similarities with regard to the appraisals of cognitive intrusions and control strategies; the presence of more rituals in the OCD group was the only intergroup difference. The two groups differed with regard to the most distressing UIT and the most common type of intrusion. Doubt was a common UIT but contamination was more specific for treatment-naïve OCD and harm/injury/aggression was more specific for relapsed OCD. Accordingly, research and psychotherapy in this field should focus on reducing relapse after a course of CBT.

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