

Diary Records of Thought Suppression by Individuals with Obsessive-Compulsive Disorder

Christine Purdon

University of Waterloo and St. Joseph's Healthcare, Hamilton, Canada

Karen Rowa and Martin M. Antony

St Joseph's Healthcare, Hamilton and McMaster University, Canada

Abstract. Impairment in mental control is a primary complaint of many sufferers of obsessive-compulsive disorder (OCD). Most OCD sufferers work very hard to rid themselves of their obsessions, to little avail. Although active resistance is a defining feature of obsessions, it is typically not assessed in measures of OCD severity and little is known about the frequency of attempts at thought control or its impact on functioning while control strategies are engaged. In the present study, 37 individuals diagnosed with OCD kept a diary of their suppression attempts over a 3-day period, recording the circumstances under which the attempt at suppression occurred, the suppression strategy used, its outcome, and its impact on concentration, mood, peace of mind, and ability to proceed with planned activities. Results indicated that individuals with OCD engage in frequent, strenuous, time-consuming and ultimately unsuccessful attempts to control thoughts. Suppression was used as a means of avoiding the hassles associated with experiencing an obsession and with performing a compulsive ritual. Consistent with other research, suppression was also used as a means of neutralizing harm potentiated by the obsession. These findings suggest that thought suppression efforts and their impact may contribute significantly to the severity of impairment associated with OCD, and that it might be useful for clinical and research purposes to evaluate suppression as a severity indicator.

Keywords: Obsessive-compulsive disorder, thought suppression.

Introduction

Obsessions are identified as thoughts that the individual attempts to “ignore, suppress or neutralize” (American Psychiatric Association, 2000, p. 462), and perceived loss of control over thoughts is often a primary complaint of individuals with obsessive-compulsive disorder (OCD; e.g. Rachman and Hodgson, 1980). Cognitive-behavioral models of OCD implicate thought suppression as an important factor in thought persistence, arguing that negative appraisal of the obsession enhances motivation to suppress, and that suppression attempts will make thought occurrences more salient and may increase thought frequency through a

Reprint requests to Christine Purdon, Department of Psychology, University of Waterloo, Waterloo, Ontario, Canada N2L 3G1. E-mail: clpurdon@uwaterloo.ca

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rebound effect (e.g. Rachman, 1997, 1998; Salkovskis, 1985, 1989, 1996, 1998). Thought suppression is thus emphasized as an important feature in the phenomenology and etiology of obsessions.

Research on thought suppression in OCD has yielded inconsistent findings. Studies examining suppression in nonclinical samples have found variously that suppression led to an increase in thought frequency (e.g. Salkovskis and Campbell, 1994; Trinder and Salkovskis, 1994) or no change in frequency (Purdon and Clark, 2001; Purdon, 2001). In studies using clinical samples of individuals with OCD, suppression has been associated with an increase in frequency of neutral thoughts (Tolin, Abramowitz, Przeworski and Foa, 2002), but not with an increase in the frequency of obsessional thoughts (Janeck and Calamari, 1999; Purdon, Rowa and Antony, 2005). However, thought suppression does appear to have insidious effects on thought appraisal and mood state in both clinical and nonclinical samples (Purdon, 2001; Purdon and Clark, 2001; Purdon et al., 2005; Tolin, Abramowitz, Hamlin and Synodi, 2002). Furthermore, thought suppression is an effortful activity, requiring attentional resources, which may impair the concentration required to perform other tasks (Wegner and Erber, 1992). Thus, even if suppression does not result in an increase in thought frequency, it may have other negative effects on obsessional thoughts and on the individual's functioning.

Freeston and colleagues conducted a comprehensive analysis of responses to obsessional thoughts reported by individuals with OCD and nonclinical samples (Freeston and Ladouceur, 1997; Freeston, Ladouceur, Provencher and Blais, 1995; Ladouceur et al., 2000). Seven major strategies were identified, including a number of thought suppression strategies such as thought stopping (e.g. say "Stop!"), replacing the thought with another thought and distracting oneself from the thought (Freeston and Ladouceur, 1997). The majority of individuals with OCD reported using a variety of strategies, with the selection for a particular occurrence being driven by the intensity of the obsessional thought, mood state and the availability of objects or people for distraction strategies. Individuals with OCD were distinguished from clinical control groups by greater use of thought suppression (although there were no differences across groups in the efficacy of that strategy).

Furthermore, the strategies used by individuals with OCD were more likely to be specifically linked to the content of the thought being ameliorated, and were thereby viewed by the researchers as serving a neutralizing function. Thus, thought suppression may be used not only to get rid of obsessions, but also to "undo" the obsession, or "restore things to right". Rassin (2001) similarly found that when nonclinical individuals suppressed a thought involving harm to a loved one, they experienced a short-term decrease in negative feelings associated with thought recurrences during suppression compared to those instructed not to suppress, suggesting that suppression served a neutralizing function.

Suppression is clearly an integral component of the phenomenology of OCD. However, existing measures of OCD severity do not directly assess suppression. For example, neither the Padua Inventory (PI; Sanavio, 1988) nor its revised version (Burns, Keortge, Formea and Sternberger, 1996) contains items that ask directly about time spent suppressing or attempting to suppress. The same is true of other widely used self-report severity scales, such as the Obsessive Compulsive Inventory (Foa, Kozak, Salkovskis, Coles and Amir, 1998) and the Maudsley Obsessional Compulsive Inventory (Hodgson and Rachman, 1977). The current "gold standard" for assessing OCD severity is the Yale-Brown Obsessive-Compulsive Scale (Y-BOCS; Goodman et al., 1989a, b). Suppression is not listed in the inventory of compulsions

(although it could be listed as “other” if the respondent identifies it as a key compulsion), nor is it included as one of the five aspects indicating OCD severity (although active resistance to the thought is, with less resistance viewed as a sign of greater severity). However, suppression may be time consuming, may interfere with performance on other attentionally demanding tasks, may serve the same purpose as neutralizing or compulsions, and may backfire, resulting in more frequent obsessions. As such, it may be an important marker of symptom severity that is currently overlooked in measures of OCD severity.

The seminal work by Freeston and colleagues has established that thought suppression may serve a number of different purposes under varying conditions, and is an important cog in the engine that drives obsessional problems. In order to understand suppression well enough to begin incorporating it into symptom measures, a more detailed understanding of its phenomenology is required. At this time, we know very little about how suppression is used and the extent to which it is a problem distinct from compulsions and neutralizing. We do not know how often people with OCD actually suppress thoughts, how long they spend suppressing or the impact of suppression on functioning. The present study was designed to systematically monitor use of suppression by individuals with OCD over several days. Individuals with OCD completed self-report measures of their appraisal of their target obsession and kept a diary of suppression attempts across three consecutive days.

Method

Participants

Participants were 37 individuals ($n = 20$ females, $n = 17$ males) with a mean age of 35. All were referred by a family physician or psychiatrist to the Anxiety Treatment and Research Centre (ATRC) at St Joseph’s Healthcare, Hamilton for an evaluation of obsessive-compulsive symptoms and all had given consent to be contacted for research purposes. All participants had a primary diagnosis of OCD, established using the Structured Clinical Interview for DSM-IV (SCID-IV; First, Spitzer, Gibbon and Williams, 1996) administered by ATRC interviewers. Some participants received a consultation with a staff psychiatrist in addition to their SCID-IV interview. For cases in which the SCID-IV and psychiatric interviews yielded different diagnoses, disagreements were resolved by consensus during a weekly clinic staff meeting. Of the 37 participants, 12 had a comorbid anxiety disorder, 16 had a comorbid mood disorder, and 4 had a comorbid diagnosis of another type.

OCD severity was assessed by the interviewer-administered Y-BOCS (Goodman et al., 1989a, b). The mean Y-BOCS Obsessions scale score was 11.11 ($SD = 2.9$), the mean Y-BOCS Compulsion scale score was 11.31 ($SD = 2.65$), and the mean total Y-BOCS score was 22.43 ($SD = 5.11$), indicating that overall, the OCD symptoms of the sample were at the high end of “moderate” in severity. The majority of participants (79%) were taking anxiolytics, antidepressants and/or other medication (e.g. mood stabilizers) at the time of the study. Inclusion criteria for the current study included a principal diagnosis of obsessive compulsive disorder and the presence of at least one identifiable obsession. Exclusion criteria for participation were: current diagnosis of substance dependence or psychotic disorder, a manic episode within the last 6 months, or any changes in psychoactive medication within the 6 weeks prior to beginning the study.

Measures

Interpretation of Intrusions Inventory. (III; Obsessive Compulsive Cognitions Working Group [OCCWG], 1997, 2001). This 31-item self-report measure was developed to assess individuals' interpretations of their obsessional thoughts. The measure assesses three domains of thought appraisal identified by leading OCD researchers as factors in the development and persistence of obsessional problems, including Responsibility, Importance of thoughts, and Need to control thoughts. Participants rate their belief in these appraisals using a scale from 0 (did not believe this idea at all) to 100 (completely convinced this idea was true) in reference to personal examples of recent obsessions. The III has good psychometric properties with strong reliability and validity (see OCCWG, 1997, 2001).

Yale-Brown Obsessive Compulsive Scale, Interview version. (Y-BOCS; Goodman et al., 1989a, b). This is an interviewer-administered measure of symptom severity in individuals already diagnosed with OCD. The interviewer first reads definitions of obsessions and compulsions and then administers a checklist of all current and past obsessions and compulsions. Ten questions about the severity of the individual's obsessions (five questions) and compulsions (five questions) over the past week are then asked and the answers recorded on a Likert scale ranging from 0 to 4, with higher ratings reflecting greater severity. The total OCD severity score ranges from 0–40. The Y-BOCS is a widely-used index of the severity of OCD symptoms and has demonstrated strong reliability and validity (Goodman et al., 1989a, b).

Self-Report Thought Suppression Diary. This diary was developed by the authors for the present study. It is a three-page form with 10 questions that are answered about a particular thought suppression episode. Thought suppression was defined as “any action to get the obsessional thought out or keep it from entering one's mind”. Respondents complete three entries a day, in the morning, noon and evening. Diary entries are to be completed after a suppression attempt is initiated, so all reports are retrospective in nature. Some reports might be taken while a suppression attempt is ongoing if that attempt has not lead to a resolution of the obsession. Respondents record the time of the suppression attempt and the time that the diary entry was made.

In each entry, respondents first indicate whether the thought suppression attempt was proactive (i.e. intended to keep an obsession from entering one's mind in the first place) or reactive (i.e. to get rid of an obsession that had already occurred), and then rate the amount of discomfort caused by the obsession using a 7-point Likert scale. In a series of open-ended questions, respondents then record what stimulus triggered the suppression attempt, what they were concerned would happen if they didn't suppress and what strategy or strategies they used to suppress. Examples of possible suppression strategies were provided on the diary. These were based on previous work examining mental control strategies used by clinical populations (e.g. Freeston and Ladouceur, 1997; Freeston et al., 1995; Ladouceur et al., 2000). It was emphasized that suppression strategies included, but were not limited to, those on the list. These examples did not overlap with any items on the Y-BOCS Compulsions Scale.

The diary also asked participants to indicate whether compulsions or neutralizing were used in addition to suppression and if so, which was used first. Participants specified how long the suppression episode lasted and what its outcome was. This latter question consisted of a check list of four different outcomes, which were: “I did not have the thought at all”; “The thought

went away with little effort”; “The thought went away with further effort”; or “The thought did not go away”. Finally, participants rated the impact of the suppression episode on their ability to concentrate, mood state, ability to resume activities, planned schedule for the day, and peace of mind using 7-point Likert scales ranging from 1 (had a positive impact on . . .) to 4 (had no impact on . . .) to 7 (had a negative impact on . . .).

Procedure

Participants were administered the Y-BOCS as part of the usual assessment procedure at the ATRC. For the purposes of this study, they then met one-on-one with one of the researchers (KR) and were administered the III. Participants then underwent an experiment unrelated to the present study. Following this, they were given detailed instructions about completing the diary, and reviewed and discussed each question in the diary with the researcher. Participants were asked to complete three diaries per day for 3 days, for a total of nine diaries (or a record of nine thought suppression episodes) per person. They were instructed to leave a diary blank if they did not have a suppression attempt during the interval for which it was allotted. Participants also kept a tally of every thought suppression attempt over the same three days on a separate sheet, simply marking a box whenever they tried to suppress a thought. They were provided with a self-addressed stamped envelope for return of the diaries.

During these 3 days, the researcher was available to participants by phone to answer any questions about completing the diaries. These calls were infrequent and straightforward. At the end of the 3-day period, participants returned diaries to the researcher in person or by mail and received a small honorarium. There were no reported difficulties completing the diaries.

Results

The majority of participants ($n = 29$) completed seven or more diaries, or 80% of the diaries they had been asked to complete ($n = 25$ completed 9 diaries, $n = 3$ completed 8, and $n = 1$ completed 7). Eight participants (five females, 3 males) completed six or fewer diaries. There were no differences between those who completed 80% or more of the diaries and those who did not in terms of age, $t(1, 33) = -0.56$, $p = .58$, Y-BOCS total score, $t(1, 33) = -0.34$, $p = .73$, type of co-morbid diagnosis, $\chi^2 = 4.48$, $p = .23$, or gender distribution, $\chi^2 = 0.29$, $p = .70$. All further analyses were restricted to the participants who completed seven or more diaries.

Participants were to record the time the suppression episode occurred and the time they made the diary entry. There was substantial variation in this latency both within and between participants, ranging from 0 minutes to 14 hours after the episode. The average latencies for each participant were calculated, and the overall mean latency then derived. The mean latency, then, was 254 minutes ($SD = 188$), or 4 hours. Average discrepancy was divided into low and high based on a median split (median = 225). The high and low groups did not differ on OCD severity, $t(1, 14) = 1.2$, $p = .24$. The low and high groups were also compared on number of thought suppression attempts, discomfort over the thought, length of suppression episode, impact of suppression on concentration, mood, ability to get on with daily activities, peace of mind, and suppression outcome. There were no significant differences between the low and high groups on any of these factors (t values range from -0.6 to 1.73 , $p > .10$). Note that

the *ns* are low for these analyses due to missing discrepancy data, as average discrepancies could only be calculated for those who recorded both the time of the attempt and the time of recording.

Suppression target

In 72.5% of the diaries returned, the suppression attempt was directed at a target obsession identified on the Y-BOCS. In 14.5% of diaries, the suppression attempt was directed at another obsession, and in 7% of diaries, not enough detail about the nature of the thought being suppressed was provided to determine whether it was a target obsession or not. Information on the content of the thought was missing in 6% of the diaries.

Approach to data analysis

Data for each specific variable of interest were summed across total thought suppression attempts, and average scores (e.g. summed total divided by number of diaries returned) were calculated for each participant. For example, for a particular participant, the number of times saying “stop” was recorded as a thought suppression strategy was counted and that total was divided by the total number of diaries that the participant had returned. This yielded an aggregate score that controlled for number of diaries completed.

Nature of thought suppression attempts

Participants reported using neutralizing in addition to suppression more often than using suppression alone [$M = 70\%$ vs. $M = 30\%$ of diaries, respectively, $t(1, 28) = -4.47, p < .001$; $SD = 26.25$ and 27.0 , respectively]. When participants used neutralizing in addition to thought suppression, thought suppression was more often tried first ($M = 45\%$, $SD = 24.14$) than was neutralizing [$M = 24\%$, $SD = 22.0$], $t(1, 27) = 2.72, p < .01$, and the amount of discomfort caused by the obsession was higher ($M = 5.48$, $SD = 1.1$) than when suppression alone was used [$M = 4.88$, $SD = 1.24$, $t(1, 19) = 3.27, p < .004$]. Paired-sample *t*-tests revealed that participants reported significantly more instances of reactive suppression ($M = 74\%$, $SD = 26.23$) than proactive suppression ($M = 24\%$, $SD = 24.62$), $t(1, 28) = 5.41, p < .001$.

Frequency and duration of suppression attempts

Data on the number of thought suppression attempts reported by participants are presented in Table 1. There was significant variation in the number of daily attempts across participants, with a range from 3–482. The median number was 37, 32 and 37.5 for days 1, 2 and 3, respectively, suggesting frequent use of suppression. In order to determine whether suppression frequency changed across the 3 days, a three-way repeated measures analysis of variance was conducted on frequency. One participant had extreme high frequency scores on each day, qualifying as an outlier. This participant’s frequency scores were adjusted so as to be one unit higher than the score of the participant who had the second highest frequency each day. There were no significant differences in reported frequency across the three days, $F(2, 25) = 1.51, p = .24$. This suggests that if scores were biased by reactivity to the monitoring procedure, the reactivity was at least constant across the 3 days.

Table 1 Mean, standard deviation, median and mode of number of thought suppression attempts on days 1, 2 and 3

	Day 1	Day 2	Day 3
Range	6–405	5–482	3–439
Mean	74.79	70	70.96
SD	93.31	103.18	95.59
Median	37	32	37.50
Mode	9	15	16

Table 2 Zero-order correlations of Y-BOCS and III scales with number of suppression attempts and duration of suppression attempts when not accompanied by neutralizing or compulsions

	Number of suppression attempts ($n = 25–27$)	Duration of suppression attempts ($n = 20–22$)
Y-BOCS Obsessions Scale	.27	.36
Y-BOCS Compulsions Scale	.31	.36
Y-BOCS Total Scale	.31	.37
III-Control Scale	.30	.26
III-Importance of Thoughts Scale	.25	.24
III-Responsibility Scale	.32	.06

Note: Y-BOCS = Yale-Brown Obsessive-Compulsive Scale; III = Interpretation of Intrusions Inventory.

It was also of interest to determine how long suppression episodes lasted. In order to understand the extent to which suppression alone was problematic (as opposed to suppression accompanied by neutralizing or compulsions), episodes of suppression alone were examined separately. Twenty-two participants reported suppression episodes that were not accompanied by neutralizing or compulsions. The mean duration of these episodes was 19.45 minutes ($SD = 27.41$), with a range from 1 to 120 minutes.

Correlations between the Y-BOCS scales and III scales with total number of suppression attempts and duration of attempts are presented in Table 2. There was one extreme case on total number of suppression attempts ($z = 3.82$), and the number was adjusted so as to be one more attempt higher than the second highest number of attempts, prior to calculating correlation coefficients. There was also one outlying case on duration of thought suppression attempts ($z = 3.67$) that was similarly adjusted. Correlations were small (.25–.36) and none were statistically significant. However, it is important to note that the Pearson correlation coefficient significance test is sensitive to sample size, and the magnitude of the correlation may be more important than its significance when sample sizes are small.

Success of thought suppression attempts

Participants reported on the success of each thought suppression attempt by checking one of four options: (1) the attempt resulted in immediate and full banishment of the thought; (2) the thought went away with little further effort; (3) the thought went away with continued effort; and (4) the thought did not go away. Success of reactive thought suppression attempts that were

Table 3 Percentage of thought suppression instances where each suppression strategy was used for suppression attempts accompanied and not accompanied by neutralizing or compulsions*

Strategy	Suppression alone %	Suppression with neutralizing or compulsion %
Say "Stop"	37	27
Thought replacement	20	31
Try to relax	7	18
Busy self	22	39
Distract self physically	4	5
Avoid something	20	12
Other	28	22

*note that participants often reported more than one strategy.

not accompanied by neutralizing or compulsions was examined. The most frequent outcome of the suppression attempt was that it was unsuccessful, with the thought remaining at the time of the diary entry in 32% of occurrences. The thought had gone away with continued effort in 30% of instances, and had gone away with a little bit of effort 27% of the time. Suppression had been fully successful 11% of the time.

Suppression strategies

Participants were given examples of suppression strategies and requested to report the strategy they used in an open-ended format. The strategies included saying "Stop", replacing the thought with another one, trying to relax, keeping busy with daily activities, physically distracting themselves from the thought (e.g. slapping or pinching themselves, shaking their head vigorously), avoidance of thought triggers or cues or other (e.g. self-talk, reasoning with self). Participants often reported more than one strategy, and this was more likely to be the case when the suppression attempt was accompanied by neutralizing or compulsions. Percentage of instances in which each strategy was used in suppression alone and suppression accompanied by neutralizing or compulsions is presented in Table 3. Saying "stop" and avoidance were used more often when the attempt was not accompanied by neutralizing or compulsions whereas thought replacement and attempting to busy oneself with daily activities were used more often when suppression was accompanied by neutralizing or compulsions.

Motivation for suppression

In order to understand the motivation for suppression, the diary included an open-ended question asking "What were you concerned might happen if you didn't suppress?" The inventory of verbatim responses was compiled into one list. Content categories were then identified and established by consensus between the three authors. No a priori hypotheses about the content of these categories were made and the authors had no investment in the nature of the categories. As such, this procedure for categorizing the qualitative data was deemed appropriate. Six categories were identified: a) to avoid or prevent a specific catastrophic outcome (e.g. fire, illness, death); b) concerns that one might go "crazy" if the thought was not suppressed; c) to avoid hassles associated with having the thought such as wasted time

Table 4 Percentage of endorsement of each motive for enacting suppression attempt for attempts accompanied and not accompanied by neutralizing or compulsions

Motive	Suppression alone %	Suppression with neutralizing or compulsion %
To prevent a specific catastrophic outcome	15	19
Concerns about “going crazy”	0	3
To avoid hassles associated with disruption in concentration and compulsions	40	43
Concerns that anxiety, OCD, thoughts and compulsions would increase	44	35
To prevent an unspecified “bad” event	10	9
Concerns about other negative consequences	0	7

or loss of concentration; d) concerns that anxiety, OCD symptoms, thoughts or compulsions would increase if the thought was not suppressed; e) to prevent an unspecified “bad” outcome; and, f) to prevent some other negative consequence (e.g. becoming angry, having to follow a certain lifestyle).

Percentage endorsement of each type of concern across suppression alone and suppression accompanied by neutralizing or compulsions is presented in Table 4. Participants sometimes recorded more than one concern. The concerns were similar across attempts accompanied by neutralizing and compulsions and suppression alone. Suppression was most frequently enacted to prevent the hassles associated with having the obsession and to prevent an increase in anxiety and OCD symptoms.

Impact of suppression on functioning

Participants rated the impact of the suppression attempt on their concentration, mood, ability to move on with their day, anxiety, schedule and peace of mind using a 7-point Likert scale ranging from 1 (improved) to 7 (had a strong negative impact). Each participant’s ratings across suppression alone and suppression with neutralizing or compulsions was averaged, and the sample means calculated. The means fell at around 4 because sometimes the attempt improved matters and sometimes it made them worse. As such, the means were not interesting or descriptive. In order to examine the extent to which suppression or suppression and neutralizing generally were associated with an improvement or a deficit in functioning, the items were transformed to categorical variables, where a score of 4 on the Likert scale was coded as “no impact,” scores of 5–7 were coded as “negative impact” and scores less than 4 were coded as “positive impact”. Frequency of suppression attempts that resulted in no impact, a positive impact or a negative impact on the various aspects of functioning are presented in Table 5. For the most part, use of suppression had a negative impact on functioning. However, many suppression attempts did result in some improvement, particularly in anxiety level.

Discussion

The purpose of this study was to better understand the use of suppression by individuals with OCD by obtaining systematic reports of suppression throughout a 3-day period. Results

Table 5 Frequency of no impact, positive and negative impact of suppression attempt on functioning*

	Suppression alone (<i>n</i> = 22)			Suppression accompanied by neutralizing or compulsions (<i>n</i> = 28)		
	No impact	Negative impact	Positive impact	No impact	Negative impact	Positive impact
Concentration	1	14	7	2	20	6
Mood	3	14	5	1	21	6
Ability to “move on”	2	13	7	1	17	10
Anxiety	2	10	10	2	16	10
Schedule	8	5	9	5	14	9
Peace of mind	3	12	7	0	16	12

*based on averaged rating across attempts.

indicate that people with OCD engage in frequent suppression attempts that are time-consuming and unsuccessful. Thirty percent of suppression attempts were not accompanied by neutralizing or compulsions, and the mean estimated duration was 19 minutes. Thus, some people are spending upwards of three and a half hours per day trying to suppress their thoughts. Suppression was also associated with a net negative impact on functioning, whether used in addition to neutralizing/compulsions or not. Given that thought suppression uses attentional resources (e.g. Wegner 1992, 1994) and that thought recurrences during suppression appear to be associated with more negative mood state and more negative thought appraisal (Purdon et al., 2005), these data suggest that suppression alone may be causing significant impairment for OCD sufferers; that is, substantial impairment above and beyond that caused by compulsions. Suppression was also used as a means of keeping an obsession from occurring, and is clearly a form of avoidance. Avoiding thoughts may have a more significant impact on functioning than behavioral avoidance. Many forms of behavioral avoidance require a straightforward decision (“I will make sure not to drive by the cemetery”, “I will make sure to use the bathroom at home before I leave”, “I will not wear red today”) and the problem is resolved. Yet, avoiding having a thought requires constant monitoring of thoughts and environmental cues; efforts can never be relaxed.

At the same time, consistent with Freeston and colleagues, suppression was often motivated by the need to ameliorate the negative affect and avoiding harm potentiated by the obsession, and thus served a neutralizing purpose. Indeed, at times suppression was viewed as having a positive impact on anxiety, on peace of mind, on participants’ schedules and on concentration. Intermittent reinforcement schedules are the hardest to extinguish, so these occasional pay-offs are likely to play a major role in the choice to use suppression as a strategy for management of obsessions. Such positive beliefs about the functions of suppression are quite similar to the positive beliefs individuals with generalized anxiety disorder (GAD) have about worrying; worrying persists in part because it is viewed as a potentially helpful strategy (e.g. Borkovec, 1994). Thus, suppression, like worry, may persist despite its deleterious impact on functioning because sometimes it helps improve the situation – or at least, it is believed that the situation would be worse if the individual did not suppress.

Meanwhile, the correlations between suppression, OCD severity and appraisal of obsessions indicate that greater OCD severity and negative appraisal is associated with greater frequency

and duration of suppression episodes. This supports cognitive models of OCD, which assert that negative appraisal drives use of suppression and neutralizing. However, it may also be the case that failures in thought control lead to more negative appraisal of the thought. This latter explanation is consistent with Purdon et al. (2005), who found that failures in thought control were associated with an escalation in negative appraisal, which in turn predicted low mood and greater efforts at control, over and above initial thought appraisal. It may be that negative appraisal evokes suppression attempts, and failures in these attempts in turn evoke more negative appraisal of the thought.

Thought suppression and its impact on functioning is not well-captured by the leading measure of OCD symptom severity. The magnitude of the correlations between Y-BOCS scores and suppression frequency and duration was quite small. Given that suppression is used, at times, for the same purpose as compulsions, inventories of compulsive and neutralizing acts may need to include thought suppression. If suppression is singled out as a target compulsion on the Y-BOCS, severity scores might indeed be higher. The Y-BOCS may also be improved by adding questions about the frequency of suppression of thoughts and avoidance of thought triggers to the existing measures of obsession severity (e.g. resistance, time spent) or, at the very least, including suppression and avoidance as aspects of time spent preoccupied with obsessions. Treatment of OCD might in turn be enhanced by targeting positive beliefs about suppression and helping individuals resist the urge to suppress.

It is important to note that the act of self-monitoring required in this study may have changed individuals' use of thought suppression, so the data may not be a perfect reflection of how people use suppression when they are not monitoring it. Latency between when the episode occurred and when the entry was made was highly variable both within and between participants. Some of the entries, then, are based on retrospective self-report of events that occurred sometimes 14 hours previously, leaving the information open to memory biases. However, comparisons across people with high (i.e. greater than the median) average discrepancies and low average discrepancies found no differences on important factors. These limitations, then, may not have had a significant impact on the study findings.

This is the only study to date that has studied natural suppression, as opposed to imposed suppression, on an ongoing basis across 3 days and offers a preliminary examination of suppression use in day-to-day life. In order to overcome the limitations of the self-report nature of the data, and the latency between events and the recording of those events, this work could be advanced by having participants monitor suppression in a laboratory setting with timing devices. Future work might directly examine the extent to which the act of suppression itself interferes with daily activities (e.g. the speed with which they can be carried out, the effort required to do them) to develop a finer understanding of the insidious effects of suppression on functioning. Finally, we need to better understand the role of suppression in OCD as compared to other anxiety disorders. We know that avoidance is a key means of managing anxiety, and to date there have been few investigations of avoidance of distressing thoughts in other anxiety problems.

Taken together, these preliminary data suggest that suppression is an important aspect of the phenomenology of OCD, but one that is currently not well captured in measures of OCD severity. We may have a much better understanding of symptom severity and recovery if suppression is included both as a potential type of compulsion and as a form of avoidance on severity indicators.

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