
Originally published in *Journal of Anxiety Disorders*, 22(8), 1472–1479.

Available from: [http://dx.doi.org/10.1016/j.janxdis.2008.03.001](http://dx.doi.org/10.1016/j.janxdis.2008.03.001)

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Desire for Control, Sense of Control and Obsessive-Compulsive Checking: An Extension to Clinical Samples.

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Abstract

Research in non-clinical samples has suggested that control beliefs, specifically desire for control and sense of control, may play a role in Obsessive-compulsive Disorder. The present study extends a previous research design to clinical participants (Moulding, Kyrios, & Doron, 2007). In this study, clinical participants with OCD-checking symptoms (N=16), anxiety disorders (N=17) and community controls (N=27) were presented with four hypothetical scenarios. Using a manipulation paradigm, the relationship between control appraisals and other OCD-relevant constructs (threat, responsibility) was examined. As in the non-clinical study, desire for control was moderately affected by responsibility and threat manipulations, while sense of control was not affected by these manipulations. Individuals with OCD recorded higher desire for control and lower sense of control relative to community controls, and a higher desire for control than the anxiety group, suggesting some specificity to OCD. A possible interactive model of control, threat and responsibility is discussed.

Key Words: Cognitive Theory; Obsessive-compulsive Disorder; Cognition; Psychological Needs.
Introduction

Obsessive-Compulsive Disorder (OCD) has a lifetime prevalence of 1.6% (Kessler, Berglund, Demler, Jin, & Walters, 2005), and has been rated as a leading cause of disability by the World Health Organisation (Murray & Lopez, 1996). Cognitive models propose that OCD is a result of the misinterpretation of common intrusive thoughts, leading to dysfunctional neutralization strategies such as compulsions, in an attempt to prevent distress and other potential negative outcomes. Such strategies exacerbate the frequency and intensity of the intrusive thoughts, leading to clinical obsessions (e.g., Salkovskis, 1985). The likelihood of such misappraisals is increased by dysfunctional beliefs, such as overinflated responsibility, threat, the importance of thoughts, the need for thought control, perfectionism, and an intolerance for uncertainty (Frost & Steketee, 2002; Obsessive Compulsive Cognitions Working Group [OCCWG], 2001). However, recent research suggests that a substantial proportion of individuals with OCD do not show high levels of the dysfunctional beliefs identified by the OCCWG (Calamari et al., 2006; Taylor et al., 2006), leaving open the possibility that additional beliefs may be important in this disorder.

Several authors have associated OCD with notions of control, for example the control of thoughts, control of the world through rituals, and concerns regarding losing control over their own actions (e.g., Bolton, 1996; Carr, 1974; McFall & Wollersheim, 1979; Reuven-Magril, 2005). In particular, two control constructs from the wider literature that may be relevant to OCD are the individual’s sense of control (SC), and...
their need or desire for control (DC; Skinner, 1996). SC incorporates both the extent to which an individual believes they can perform an action and the extent to which they believe that such an action will lead to a desired outcome or avoid an undesirable one (Skinner, 1996). While SC is focused on how much control individuals feel they have, individuals also vary in their levels of desire for control, defined as the individual’s motivation to achieve a sense of control over events in their life (following Burger & Cooper, 1979). Recent cognitive models of OCD have focused on beliefs regarding the need to control thoughts (e.g., Purdon & Clark, 2002; Rachman, 1997; Salkovskis, 1985). Individuals with OCD have been found to have a higher desire to control their thoughts, but a lower sense of control over intrusive thoughts, than non-clinical participants (for reviews see Clark, 2004; Purdon & Clark, 2002).

It has been proposed that broader control beliefs may be important to OCD, and contribute to a better understanding of the reasons why individuals with OCD feel an excessive need to act in response to their intrusive thoughts (Moulding & Kyrios, 2006). Moulding and Kyrios proposed that individuals with a greater need to exert control over events in their lives (i.e., higher DC) combined with a low evaluation of their level of control within a situation (i.e., lower SC), have a greater tendency to experience anxiety and are more likely to act to regain their sense of control and reduce their anxiety (e.g., following distressing intrusive thoughts). Converging evidence from studies examining more general levels of control in OCD suggests that individuals with OC symptoms may hold a higher level of DC (Brown, 2001; Moulding & Kyrios, 2007; Sookman, Pinard, & Beck, 2001), and a lower SC over the self and world (McLaren & Crowe, 2003; Moulding & Kyrios, 2007; Zebb & Moore, 2003). Rees and colleagues (2006) studied
differences between a clinical OCD and a non-clinical group on selected facets of specific dimensions of the revised NEO personality inventory, which have been shown to be more specific to OCD (Rector, Hood, Richter, & Bagby, 2002), and found that the “primary distinction between the two groups studied is that the OCD group displayed a distorted perception of their competence” (p. 40), with the OCD group showing lower scores.

Using the Vulnerability Schemata Scale, Sookman, Pinard and Beck (2001) found that need for control was higher in individuals with OCD (n=32) than in patients with other anxiety disorders (n=15), mood disorders (n=12) and a normal control group (n=52), although they suggested it was a response to a fear of negative affect. Moulding and Kyrios (2007) found that in a non-clinical student population, higher levels of general DC and lower levels of SC were associated with higher levels of OC-related beliefs and OC-symptoms, and control beliefs were also found to predict other OC-beliefs.

More recently, Moulding, Kyrios and Doron (2007) suggested that the link between OC phenomena and perceptions of control would be more evident in particular situations, such as where the individual’s SC is undermined (e.g., in situations appraised as threatening). In such situations, DC may lead to the use of short-term strategies aimed at regaining this sense of control. To examine this proposal, Moulding et al. examined the relationship between situation-specific appraisals of DC and SC in relation to other OCD-relevant constructs (responsibility, threat) and aspects of OCD symptoms (affect, action), using a large non-clinical sample. Individuals were presented with four OCD-relevant vignettes (concerns regarding leaving a tap running), which varied in the degree of threat and responsibility. In the scenarios, appraisals of desire to control were moderately increased by higher levels of responsibility and threat, while sense of control showed
little or no relationship with these constructs. Furthermore, control constructs predicted negative affect and the use of action to control the threat, over-and-above appraisals of responsibility and threat. The control appraisals were found to be particularly relevant to affect and action when threat was high, but responsibility low. It was suggested that the pattern of results is consistent with a higher DC, but lower SC, being linked to OCD-behaviors and affect. In particular, in specific situations where feared consequences may occur but perceptions of responsibility are low, control appraisals may be a determining factor in the motivation to act out compulsions.

The previous study by Moulding et al. (2007) was conducted in an analogue student population. While non-clinical participants experience OC related phenomena and associated cognitions, they may differ from clinical patients in the type, severity and symptom-related impairment (Rachman & de Silva, 1978). It is important to extend the analysis to clinical participants to enable stronger inferences regarding the relevance of control constructs to clinical presentations of OCD, and their relationship with other constructs currently implicated in OCD (threat, responsibility). Comparing the extent to which individuals with OCD show such dysfunctional control appraisals may enable a better understanding of the degree to which these dimensions are specific to OCD (versus other anxiety disorders), and what role they might play in this disorder, and perhaps in other disorders. Ultimately, this may strengthen our understanding of cognitive processes in OCD, and hopefully contribute to improved treatments for the disorder.

The present study extended previous findings by examining control appraisals in clinical and community populations (OCD, Anxiety Disorders, Community Controls), in checking-relevant situations. The first aim of the study was to examine overall
differences between groups in levels of DC and SC, along with responsibility and threat. While control constructs and threat are relevant to other anxiety disorders (e.g., Bandura, 1997; Rapee, 1998) it was expected that in OCD-relevant situations, individuals with OCD would differ to both control groups. Specifically, it was hypothesized the OCD group would display higher overall appraisals of responsibility, threat and desire for control, and lower appraisals of sense of control, than the control groups. The second aim of the study was to examine the influence of threat and responsibility manipulations on control appraisals, in order to further relate control constructs to beliefs in traditional cognitive theories of OCD. It was hypothesized that increasing the levels of responsibility and threat would increase the individual’s DC. Sense of control was predicted to increase with responsibility and decrease with threat (see Moulding & Kyrios, 2006). Finally, the study also explored whether the manipulations of responsibility and threat affected the diagnostic groups differently.

**Method**

**Participants**

Three groups of participants were involved in this study, a group with OCD, a group with other anxiety disorders, and a community control group. The original OCD group included 28 participants. To ensure that the checking scenarios were relevant to the fears of individuals with OCD, participants were excluded if they did not report checking as a primary symptom on a structured clinical interview (ADIS-IV, Brown, DiNardo, & Barlow, 1994) and they scored lower than 1 SD above non-clinical norms on the checking subscale of the Padua Inventory-Washington State University Revision (Burns, Keortge, Formea & Sternberger, 1996). This left 16 participants in the final OCD group (11
Seventeen participants were in the anxiety disorders group (AD group; 11 females; \(M_{\text{age}}=41.0, SD=14.6\); range 19–65; \(M_{\text{level education}}=13.6\) years, \(SD=2.34\)). In the AD group, four participants had social phobia as the primary disorder, five had generalized anxiety disorder, six had panic disorder and two had specific phobias.

Clinical participants were recruited via psychology clinics, consumer groups, and advertisements in the local paper. Diagnoses were confirmed using a semi-structured interview (ADIS-IV; Brown et al., 1994) administered by registered psychologists. Entry criteria for inclusion were: (a) a primary diagnosis of OCD (OCD group) or other anxiety disorder (AD group), (b) no current substance abuse, and (c) no current/past schizophrenia, bipolar disorder or organic mental disorder. Comorbidity with depression or other anxiety disorders was not an exclusion criterion for the OCD group, as long as OCD was the primary disorder, and the comorbid disorders were not in the extreme range of severity. However, OCD comorbidity was not permitted in the AD group.

In the final community control (CC) group there were 27 participants (19 females; \(M_{\text{age}}=38.2, SD=14.3\); range 19–69; \(M_{\text{level education}}=16.4\) years, \(SD=3.13\)). Participants in the non-clinical group were recruited from several sites (hospital staff, university students, working population). One non-clinical participant was excluded as they disclosed a psychiatric history on screening questions.

Demographic differences were examined across groups. No difference were found on age, \(F(2,56)=.254, p>.05\), or gender, \(\chi^2(2)=.156, p>.05\). There was a difference in educational level, \(F(2,56)=4.021, p<0.05\). Post-hoc comparisons using Tukey’s method
suggested there were marginally significant differences on education between the community group and OCD group ($p=0.054$), and the community and AD group ($p=0.057$), with the community group showing higher educational levels.

**Design**

A 3(group) X 2(threat) X 2(responsibility) split-plot design was used, with all subjects completing the four vignettes in random order. The vignettes varied in threat (low/high) by responsibility (low/high).

**Measures**

*The Obsessive-Compulsive Vignette Inventory (OCVI)*\(^2\) was designed for a previous study (Moulding et al., 2007), and consists of four scenarios relevant to an obsessive-compulsive concern, doubt over whether a tap was left running (see Table 1). The scenarios were designed to vary in terms of threat level (low/high) and responsibility (low/high; for more information regarding validity of manipulation see Moulding et al., 2007). Participants were asked to place themselves in the situation “as if it was actually happening to you” and to imagine the “possible negative outcomes that could occur.” Following each scenario was a series of questions, assessing appraisals (responsibility, threat, control) and response (affect/action). Specifically, two appraisal questions concerned responsibility (“personal responsibility” and “negative outcomes depending only on you”) and two assessed threat (“severity” and “probability” of negative outcomes, adapted from Rhéaume et al., 1995). Three questions assessed appraisals of perceived control (over the outcome, your emotions/thoughts and behaviors/actions), and four assessed desire for control (over outcome, the certainty of outcome,

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\(^1\) One community participant did not report their age.
emotions/thoughts, their behaviors/actions). Affect was assessed through two items (level of discomfort/distress, urge to do something). Finally, one question following all the scenarios assessed the relevance of the scenarios to the participant’s life.

*The Padua Inventory – Washington State University Revised* (Burns, Keortge, Formea, & Sternberger, 1996) is a 39-item inventory measuring the degree of disturbance caused by a range of intrusive thoughts and compulsive behaviors. The measure has adequate test–retest reliability ($r = .76$; Burns et al., 1996). The PI-R has items assessing: (a) thoughts of harm occurring to self or others; (b) impulses to harm self or others; (c) contamination obsessions and washing compulsions; (d) checking compulsions; and (e) dressing rituals.

Procedure

After indicating their interest in volunteering for the research, clinical participants underwent the ADIS-IV to confirm diagnosis. All participants were given the questionnaires to return by reply-paid mail. Clinical participants were reimbursed up to AUST$20 for attending the ADIS interview.

Statistical Analyses

Analysis was performed with SPSS 14.0. In examining the overall difference between groups, planned comparisons were used to compare the OCD and CC groups,

\[2\] The full OCVI is available from the contact author.
and the two clinical groups in their affective responses and appraisals of control, responsibility and threat within the scenarios. For the planned comparisons, the sample size obtained was sufficient to detect moderate to large effects (Effect size $f = .340$) with 80% power. To examine the validity of the manipulation, 2 (threat) X 2 (responsibility) x 3 (group) ANOVAs were performed on threat and responsibility appraisals, and affective response. To examine the influence of manipulations of responsibility and threat on control appraisals and the other outcome measures, a series of 2 (threat) X 2 (responsibility) x 3 (group) ANOVAs were performed. Further exploration was performed on all significant interaction effects, using analysis of simple effects of group differences at each level of the dependent variable, with Ryan-Einot-Gabriel-Welsch-Range posthoc tests.

**Results**

Data-screening indicated a small level of missing data (0.58%); missing values were replaced with item means separately for each group. Analysis did not indicate any outliers with excessive influence using Cook’s Distance. Internal consistency was acceptable for all appraisal measures (see Table 2).

**Overall differences between Groups**

First, we wished to check the validity of the scenarios as being related to OCD-checking concerns. As expected, the OCD group appraised the scenarios as more personally relevant than either control group, supporting the contention that the scenarios are OCD-relevant. Furthermore, as expected, comparisons indicated that the OCD group

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3 The use of strategies assessing to confront or avoid the threat were also assessed. Analyses are available from the contact author.
showed higher urge/distress within the scenarios than the community group. The comparison of the OCD and AD groups failed to reach significance ($p=.058$), but the trend was in the expected direction.

Second, we examined the overall ratings of appraisals across the groups. With respect to appraisals, the OCD group showed higher levels of threat, responsibility and desire for control than the CC group, and lower levels of sense of control than the CC group. Importantly, the OCD group showed higher appraisals of threat and desire for control than the AD group. However, the OCD group was not significantly different from the AD group on sense of control and responsibility appraisals.

Insert Table 2 about here

Responsibility and Threat Manipulation Check

Responsibility appraisals were significantly higher in the high versus low responsibility conditions and the high versus low threat conditions, with a large effect due to the responsibility manipulation (Table 3). Threat appraisals were also significantly higher in the high versus low responsibility condition and high versus low threat conditions, with a large effect due to the threat manipulation (Table 3). As expected, urge/distress was higher in the high versus low responsibility condition, and in the high versus low threat condition (Table 3). Thus, the manipulation worked as predicted.

Responsibility and Threat Manipulations

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$^4$ Power analysis performed using G*Power 3.0.10 (Faul, Erdfelder, Lang, & Buchner, 2007).
SC was not affected by the manipulation, while DC was increased moderately in the high versus low threat, and high versus low responsibility conditions (Table 3). The threat by group interaction was significant for threat appraisals, $F(2,57)=4.12, p<.05$, partial $\eta^2=.13$; sense of control, $F(2,57)=6.29, p<.01$, partial $\eta^2=.18$; and desire for control, $F(2,57)=3.35, p<.05$, partial $\eta^2=.11$. At low levels of threat there were differences between groups, $F(2,57)=3.95, p<.05$, with posthoc tests suggesting that the OCD group was higher than the AD group on threat appraisals; at high levels of threat, there was a significant difference between groups, $F(2,57)=6.38, p<.01$, with posthoc tests suggesting that the OCD group reported higher threat appraisals than the CC group (Table 3). In interpreting the interaction on SC, there was a significant group effect at low threat, $F(2,57)=4.57, p<.05$, with the OCD group reporting less control than the CC group; there were also SC differences at high levels of threat, $F(2,57)=3.66, p<.05$, with the OCD group lower than both control groups. Regarding DC, there were differences between groups at low threat levels, $F(2,57)=4.04, p<.05$, with the OCD group higher than the AD group; at high threat levels, there were group differences, $F(2,69)=6.39, p<.01$, with the OCD group reporting higher DC than both control groups.

Finally, the responsibility by threat interaction was significant for threat ratings, $F(1,57)=9.68, p<.01$, partial $\eta^2=.15$. At low levels of threat, there was a significant effect of increasing responsibility condition on increasing threat appraisals, $F(1,57)=22.80, p<.001$, but there was no effect of responsibility on threat appraisals at high levels of threat, $F(1,57)=.61, p>.05^5$.

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5 Significant interaction effects reported. All other interaction effects non-significant, all $p>.05$. 
In sum, the interactions suggested that the OCD group reported lower level of SC than community controls when no threat was present, and lower levels of SC than both control groups in the presence of threat. The OCD group showed higher DC than the CC group when threat was absent, and higher DC than both control groups when threat was present. In general, the OCD group reported greater levels of threat than community controls when in threatening situations, while the responsibility manipulation had little effect on threat appraisals in highly threatening situations.

Insert Table 3 about here

Discussion

This study examined control appraisals of clinical groups with OCD or with other anxiety disorders (AD) and a non-clinical control group, in four hypothetical checking-relevant scenarios varying in threat and responsibility levels. As predicted and consistent with previous findings (Moulding et al., 2007), responsibility and threat were successfully manipulated, and led to increases in DC and urge/distress. Sense of control was largely unaffected by manipulations of threat and responsibility. Group differences in these measures were also examined. Consistent with hypotheses, the OCD cohort showed higher levels of DC, threat and responsibility, greater urge/distress, and lower levels of SC than the CC group. Furthermore, the OCD group also showed higher levels of DC and threat than the AD group.

As in a previous study using a non-clinical sample (Moulding et al., 2007), desire for control (DC) appraisals increased with the manipulations of threat and responsibility.
This provides further evidence for the interrelatedness of DC, responsibility and threat; although the increase in DC was only of a moderate size. Thus, the results point to a possible interplay between the factors; responsibility and threat can increase the desire to control within a situation; however, the previous non-clinical study suggested that desire for control may also be directly related to affect and compulsive actions in OCD (see Moulding et al., 2007).

In contrast, SC was not affected by the manipulation of responsibility. This finding is consistent with the weak links between the constructs in other studies (Lopatka & Rachman, 1995; Moulding & Kyrios, 2007; Moulding et al., 2007), and suggests that perceiving oneself as responsible in a situation does not necessarily lead to increased perceptions of control over the outcomes. For instance, a student undertaking an exam may feel responsible for the results without feeling much control over the situation (cf. Salkovskis & Freeston, 2001). Conversely, in situations where the threat is high and one perceives control to be impossible, an individual may have a perception of low responsibility for negative outcomes. As Mancini and Gangemi (2004) note, individuals cannot be held responsible in situations that are completely out of their control; “no one is bound to do what is impossible” (p. 114). Consistent with findings in the non-clinical cohort (Moulding et al., 2007), levels of SC also did not change with the manipulation of threat. These findings provide further evidence that threat may not always impact on one’s sense of control. However, there are potential ceiling effects of a vignette manipulation, and future research in real-world situations would be required to more fully investigate the relationship between control, responsibility and threat constructs.
In the examination of group differences, it was found that the OCD group reported greater DC, lower SC, and greater appraisals of threat and responsibility than the CC group. This is consistent with the cognitive theories that suggest that individuals will appraise situations differently based on their prior beliefs (e.g., OCCWG, 1997); individuals with psychological disorders would be expected to interpret situations in a different fashion to non-clinical participants, due to higher levels of dysfunctional beliefs. Furthermore, at high levels of threat, individuals with OCD had both a lower level of SC and higher level of DC than both control groups, supporting the contention that these variables may play a role in the unique responses to such situations by OCD groups.

These results are consistent with suggestions that control appraisals are important in OCD, and also with suggestions that control may interact with other OCD-relevant beliefs. For example, it could be that a vicious cycle is operating to escalate levels of OC-beliefs and behaviors (i.e., for some individuals, desire for control prompts action; taking action makes individuals feel greater responsibility; individuals with higher responsibility have greater desire for control and threat, etc.). This suggestion may perhaps help explain some of the inconsistencies in the literature regarding the relationship of responsibility to OCD-symptoms (Rachman, Thordarson, Shafran, & Woody, 1995; Tolin, Worhunsky, & Maltby, 2006); in some situations, those with low beliefs regarding responsibility may still perform OCD actions if they have a high DC. This is consistent with the higher levels of DC appraisals in the group with OCD versus the group with other anxiety disorders. The role of DC may also contribute to the prevention of habituation in OCD and thereby maintain OCD symptoms. That is, individuals with high DC may be driven
to keep performing OCD actions, which would result in increased feelings of responsibility and would prevent the disconfirmation of dysfunctional cognitions.

The present research provides evidence that consideration of control constructs may be warranted in cognitive theory, and indicates the need for further studies. However, there are some limitations to the generalizability of the current study. First, the validity of the appraisal scales may have been compromised due to possible item redundancy reflected in the high alpha coefficients of these scales (cf. Loevinger’s discussions of the attenuation paradox, Loevinger, 1954). Future studies should focus on further refining this measure, possibly by reducing redundancy through careful item selection, or alternative measures. Second, the non-clinical community group had marginally higher educational levels than the clinical groups. It is possible that differences between clinical and community groups in their responses to the scenarios could have been due to educational differences rather than differences in clinical status per se. Future studies should match groups on this variable. Future studies should also screen community groups for clinical disorders with a structured clinical interview, as there is the possibility that individuals in this study may not have self-identified such disorders. Third, in the current study, participants completed the measures at home, which raises the possibility of external influences (e.g., others filling out parts of questionnaires or discussing answers with others). Administration of the measure in the presence of an experimenter in future studies would ensure that such influences are eliminated.

Fourth, future studies should include direct manipulations of the control variables in order to provide evidence for a causal influence of control on OCD symptoms, and to
examine the suggestion that responsibility and threat appraisals would increase with DC. Adaptation of the scenarios to in-vivo experimental designs would also further extend the clinical relevance of the present research. Finally, the findings of the current study are limited to individuals with OCD checking symptoms. Future studies using a wider range of participants and stimuli would allow generalizability of the results to other presentations of OCD.

If control constructs do prove to be robustly related to OCD symptoms in future studies, it could lead to improvements in the efficacy of psychological treatments for OCD, particularly for those clients who do not respond to current treatments. For example, discussing control constructs could potentially assist in building engagement in therapy, and in reducing the likelihood that clients will “drop out” of cognitive therapy. Clients with a high desire for control may be sensitive to feelings that the therapist is controlling the situation, and be especially vulnerable at times of the commencement of exposure therapy due to the attack on sense of control this could bring. Discussing this possibility with clients prior to exposure and response prevention may help to normalize the experience, and reduce the risk of catastrophizing (for other treatment suggestions to address control in OCD, see Moulding & Kyrios, 2006).

In conclusion, this paper examined the relationship of desire to control and sense of control to aspects of OC-symptoms within specific situations. As in the non-clinical study, higher levels of DC were moderately affected by responsibility and threat manipulations, but SC was not affected by these constructs. However, the OCD group was found to have higher SC and lower DC than the community group, and further, showed higher desire for control than the AD group in the OCD-relevant situations.
These findings provide early support for the hypothesis that OCD is related to individuals experiencing a lowered SC and higher DC, which may increase distress and motivate action to confront the threat, particularly when responsibility is low or ambiguous. Future studies addressing the limitations of this manipulation are needed to extend these findings.
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Table 1. The four scenarios used in the Obsessive-Compulsive Vignette Inventory by threat/responsibility condition

<table>
<thead>
<tr>
<th>Condition</th>
<th>Scenario</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low threat</td>
<td>You are at a friend’s house, and your friend feels thirsty so <strong>they</strong> get themselves a drink of tap-water. Later you both go to a restaurant, and while you are there your friend tells you that <strong>they</strong> are not sure if <strong>they</strong> turned off the tap, which was <strong>dripping slightly</strong>. Your friend also states that they think that the sink <strong>did not</strong> have a plug in it, so the water could drain out. Your friend lives alone.</td>
</tr>
<tr>
<td>Low threat</td>
<td>You are at a friend’s house, and <strong>you</strong> are feeling thirsty so <strong>you</strong> get yourself a drink of tap-water. While you are drinking, you are distracted by a lively discussion with your friend. Later you both go to a restaurant, and while you are there you realise that <strong>you</strong> are not sure if <strong>you</strong> had turned off the tap, which was <strong>dripping slightly</strong>. You also think that the sink <strong>did not</strong> have a plug in it, so the water could drain out. Your friend lives alone.</td>
</tr>
<tr>
<td>High threat</td>
<td>You are at a friend’s house, and your friend feels thirsty so <strong>they</strong> get themselves a drink of tap-water. Later you both go to a restaurant, and while you are there your friend tells you that <strong>they</strong> are not sure if <strong>they</strong> had turned off the tap, which was <strong>running rather strongly</strong>. Your friend also states that <strong>they</strong> think the sink <strong>might have had</strong> a plug in it, and that it was next to some appliances such as a toaster and microwave oven, which were plugged in. Your friend lives alone.</td>
</tr>
<tr>
<td>High threat</td>
<td>You are at a friend’s house, and you are feeling thirsty so <strong>you</strong> get yourself a drink of tap-water. While you are drinking, you are distracted by a lively discussion with your friend. Later you both go to a restaurant, and while you are there you realise that <strong>you</strong> are not sure if <strong>you</strong> had turned off the tap, which was <strong>running rather strongly</strong>. You also think that the sink <strong>might have had</strong> a plug in it, and that it was next to some appliances such as a toaster and microwave oven, which were plugged in. Your friend lives alone.</td>
</tr>
<tr>
<td>Scenario Measures</td>
<td>OCD</td>
</tr>
<tr>
<td>-------------------</td>
<td>--------</td>
</tr>
<tr>
<td>Affect</td>
<td></td>
</tr>
<tr>
<td>Urge/Dis</td>
<td>5.26 (1.36)</td>
</tr>
<tr>
<td>Appraisals</td>
<td></td>
</tr>
<tr>
<td>Threat</td>
<td>5.31 (1.24)</td>
</tr>
<tr>
<td>Resp</td>
<td>5.51 (1.36)</td>
</tr>
<tr>
<td>SC</td>
<td>4.58 (1.54)</td>
</tr>
<tr>
<td>DC</td>
<td>7.16 (1.32)</td>
</tr>
<tr>
<td>Personal Relevance</td>
<td>6.06 (2.38)</td>
</tr>
</tbody>
</table>

Note: OCVI=Obsessive-Compulsive Vignette Inventory; AD=anxiety disorder; CC=community control; Urge/Dis=Urge/discomfort; Confront=confrontational strategies; Resp=responsibility; SC=sense of control; DC=Desire for control.

*aReliability estimate not provided as a single item.

*** p<.001; ** p<.01; * p<.05.
Table 3. Means (SD) for appraisals and affect/action responses by condition and group, and F-statistics (partial η²) for main effects.

<table>
<thead>
<tr>
<th>Measures</th>
<th>Low Threat</th>
<th>High Threat</th>
<th>Main Effects - F (partial η²).</th>
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<td>Low Resp</td>
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<tr>
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<td>7.03 (1.94)</td>
<td>4.00 (2.37) 7.84 (1.64)</td>
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<td>2.30 (1.64) 6.19 (1.90)</td>
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<td>4.25 (1.82)</td>
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<td>3.06 (2.15)</td>
<td>6.32 (1.71) 6.00 (2.03)</td>
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<td>Control Sense</td>
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<td>4.65 (1.84)</td>
<td>4.88 (1.69) 4.17 (1.88)</td>
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</tbody>
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Note: AD=anxiety disorder; CC=community control; Urge/Dis=Urge/Discomfort; Resp=Responsibility.
*** p<.001, ** p<.01, * p<.05. See text for significant interaction effects.