The relationship between disgust sensitivity, anxiety and obsessions

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Running Head: Disgust sensitivity, anxiety and obsessions.

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Abstract

300 participants, including volunteers from an obsessional support group, filled in questionnaires relating to disgust sensitivity, health anxiety, anxiety, fear of death, fear of contamination and obsessionality as part of an investigation into the involvement of disgust sensitivity in types of obsessions. Overall, the data supported the hypothesis that a relationship does exist between disgust sensitivity and the targeted variables. A significant predictive relationship was found between disgust sensitivity and total scores on the Obsessive Compulsive Inventory (OCI; Foa, Kozak, Salkovskis, Coles and Amir, 1998) for both frequency and distress of symptomatology. Disgust sensitivity scores were significantly related to health anxiety scores and general anxiety scores and to all the obsessional subscales with the exception of hoarding. Additionally, multiple regression analyses revealed that disgust sensitivity may be more specifically related to washing compulsions: frequency of washing behaviour was best predicted by disgust sensitivity scores. Washing distress scores were best predicted by health anxiety scores, though disgust sensitivity entered in the second model. It is suggested that further research on the relationship between disgust sensitivity and obsessionality could be helpful in refining the theoretical understanding of obsessions.

Introduction

In his 1994 paper entitled 'Pollution of the mind', Rachman issued several challenges to researchers into the emotion of disgust. Amongst these were questions about the nature of the relationship between disgust sensitivity, obsessionality, compulsivity, contamination fear and fear of illness. This paper sets out to explore these issues.

Much has been claimed for the importance of disgust in a range of clinical syndromes, including a central role in the aetiology of specific phobias, particularly spider phobia (Watts, 1986; Matchett and Davey 1991; Davey, Forster, and Mayhew 1993; Davey, 1994a, 1994b; Mulkens, de Jong and Merckelbach 1996; Davey, McDonald, Hirisave, Prabhu, Iwawaki, Jim, et al. 1998; Muris, Merckelbach, Schmidt and Tierney, 1999; Woody and Teachman 2000; Arrindell 2000) and blood-injection-injury phobia (Sawchuk, Lohr, Tolin, Lee and Kleinknecht 2000; Sawchuk, Lohr, Westendorf, Meunier and Tolin 2002). Matchett and Davey (1991) for example proposed that disgust sensitivity enhances vulnerability to fear of particular kinds of stimuli which are categorised as fear-relevant but not actually physically harmful. De Jong and Muris (2002) have produced compelling evidence to support the hypothesis that the essence of spider phobia lies in a fear of contact with a disgusting stimulus, though Thorpe and Salkovskis (1998), have urged caution in putting disgust at the centre of spider phobia in particular and showed that the kind of disgust which spider phobics feel for spiders is quite different in several important ways from the more global emotion of disgust which is uncontaminated by phobic revulsion. This is also supported by Sawchuk, Lohr, Tolin, Lee and Kleinknecht (2000) who although finding evidence for elevated levels of disgust sensitivity in specific phobics compared to nonphobics, found that blood-injection-injury

phobics scored higher than spider phobics on a measure of contamination fear, and that this was correlated with the blood phobia measure but not with the spider phobia measure. Again, more recently, Vernon and Berenbaum (2002) report that the kind disgust evoked by spiders is specific to those creatures and is not part of a general disgust response.

There is some evidence that there is a gender bias in disgust sensitivity (Templer, King, Brooner and Corgiat 1984; Davey 1994a, Haidt, McCauley and Rozin, 1994; Druschel and Sherman 1999) and this has been suggested (Davey 1994a), as part of the explanation as to why there is a higher incidence of specific phobias in females than males though Arrindell, Mulkens, Kok and Wollenbroek (1999) failed to find evidence for this.

More recently, research studies have made claims for the role of disgust in a range of disorders including those based on shame guilt and embarrassment such as eating disorders (Davey, Buckland, Tantow, and Dallos, 1998; Troop, Murphy, Bramon and Treasure, 2000) obsessive compulsive personality types (Quigley, Sherman and Sherman, 1997) and Obsessive Compulsive Disorder (Straus 1948; Rachman, 1994; Sprengelmeyer, Young, Pundt, Sprengelmeyer, Calder, Berrios, et al., 1997; Muris, Merckelbach, Nederkoorn, Rassin, Candel and Horselenberg 2000; Phillips, Marks, Senior, Lythgoe, O'Dwyer, Meehan, et al., 2000; Mancini, Gragnani and D'Olimpio, 2001). Sprengelmeyer et al. (1997) showed that participants with OCD - and those with Gilles de la Tourette's syndrome (GTS) plus obsessive compulsive symptoms - were impaired in their ability to recognize the facial expression of disgust compared to people suffering from panic disorder, generalized anxiety disorder and GTS without obsessive compulsive symptoms. They suggest that an abnormal experience of the emotion of

disgust may be implicated in the aetiology of OCD. Muris et al. (2000) examined the relationship of Disgust sensitivity to measures of fear, OCD (as measured by the Maudsley Obsessive Compulsive Inventory, Hodgson and Rachman, 1977), depression and eating disorder. Only agoraphobia and OCD were related to disgust sensitivity. On closer inspection they noted that the agoraphobic items carrying most of the weight were to do with being in public places or travelling on public transport, which they suggest may be related to the perceived lack of cleanliness in these situations. Further examination of the subscales of OCD revealed that significant relationships were found only between disgust sensitivity and the cleaning and slowness subscales. However, they note that the measure of disgust sensitivity they used was specifically related to the contamination of food, and has since been superseded by the Disgust Scale (Haidt et al., 1994). Mancini et al. (2001) overcame this problem by using the Haidt et al. (1994) Disgust Scale. They found that disgust sensitivity was a significant predictor of total obsession scores, and washing and checking subscales as measured by the revised Padua Inventory (van-Oppen, Hoekstra and Emmelkamp, 1995).

Further evidence for a connection between the disgust response and OCD has been found by Philips et al. (2000) in OCD patients with washing symptoms. MRI scans revealed that in these particular patients, both the insula, which is important in the perception of disgust, and the visual regions normally implicated in the recognition of aversive stimuli, were activated by washer-relevant pictures. In non-washers, these regions were only activated by normally disgusting pictures.

Four central dimensions to the experience of disgust have been identified by Rozin and colleagues. These fall broadly into themes categorised as behavioural, physiological,

facial expressivity and finally feelings of revulsion which relate qualitatively to the other factors (Rozin, Haidt and McCauley, 1993). They also investigated the characteristics of the disgust object itself, suggesting that there are seven domains of disgust elicitors: animals, body products, death, envelope violations, food, hygiene and sex. Some of these relate more to the fear response and others to a more conventional conception of disgust as resistance to ingestion. Another aspect of their theory of particular relevance to the present study are the laws of contagion and similarity (Rozin, Millman and Nemeroff 1986) which may have a bearing on the way in which objects first become associated with contamination. Briefly, the law of contagion proposes that things which have once been in contact with each other may continue to influence each other in the future through an 'essence' which facilitates the transfer of some of their properties even when they are no longer physically connected. The law of similarity suggests that objects which resemble each other share some basic properties so that an act perpetrated on one object will be felt by the other.

The importance of disgust to belief systems in anxiety disorders is still a relatively new concept. Previously, this essentially non-cognitive approach was justified by the perception of the place of disgust in the evolution of emotion as being very much at the instinctive, primitive, corporeal non-cerebral end of the spectrum of emotions. Darwin for instance remarked on 'how readily and instantly retching or actual vomiting is induced in some person by the mere idea of having partaken of any unusual food ' (1872/1965 p258). He went on to hypothesise that our forbears would have been able to vomit at will, and though this is now lost to us due to its being rendered redundant as a protective measure against danger by the transmission of information by speech and by

example, this ancient response is recalled into involuntary action whenever the mind ‘revolts at the idea of having partaken of any kind of food, or at anything disgusting’ (ibid).

The present study is concerned with an exploration of the relationship of disgust sensitivity to particular characteristics of obsessionality. It was hypothesised that disgust sensitivity would be related to obsessionality generally because the evidence suggests that it is connected to anxiety in general and fear of death in particular (Haidt et al. 1994). It is further suggested that disgust sensitivity will be of particular relevance to the subscale of obsessionality related to washing concerns, as a possible consequence of belief in the laws of sympathetic magic as outlined by Rozin, Millman and Nemeroff (1986) and examined in relation to Spider and Blood-injury phobia by Sawchuk, Lohr, Tolin, Lee and Kleinknecht (2000). Finally, following on from Rachman’s predictions, it was hypothesised that there would be a relationship between measures of obsessionality, disgust sensitivity, beliefs about contamination, health anxiety and general anxiety. It was therefore hoped that this would allow the further identification of some of the possible factors involved in types of obsessionality.

Method

Participants

300 participants were drawn from a variety of sources including members of the public, members of an Opera orchestra, members of a self-help group for those diagnosed as suffering from OCD (n=13) and students of the University of Greenwich who volunteered as part of a research participation scheme. . Not all the participants filled in

all the questionnaires, hence the varying number of participants reported in the various analyses in the results section. Of the 175 people who provided their demographic details 136 were female and 39 male, age range was 20 to 35, with a mean of 23.4 (SD 3.3). Although the mean female disgust sensitivity score (17.4) was higher than the male (14.7) the groups were not significantly different from each other. Participant scores on the OCI were comparable with samples used in previous research by Foa et al (1998) and Simonds, Elliott and Thorpe (2000): OCI total frequency mean was 29.6 (SD 20.2) and the total distress mean was 22.3 (SD 20.8).

Measures

(i) The Beck Anxiety Inventory. Beck and Steer (1990)

The scale consists of 21 items, each describing a common symptom of anxiety. The respondent is asked to rate how much he or she has been bothered by each symptom over the past week on a 4-point scale ranging from 0 to 3. The items are summed to obtain a total score that can range from 0 to 63.

(ii) The Obsessive Compulsive Inventory

The Obsessive Compulsive Inventory (Foa, Kozak, Salkovskis, Coles, and Amir 1998) is a 42-item self-report measure of obsessive-compulsive symptomatology. Participants rate each item for both frequency and distress on 5-point Likert type scales. The full scale yields total possible scores for both frequency and distress of 168. In addition to yielding total frequency and distress scores, frequency and distress can be rated separately for each of seven subscales: Washing, Checking, Doubting, Ordering, Obsessing, Hoarding

and Neutralising. Total frequency and distress scores possible for each subscale are as follows: Obsessions (32); Washing (32); Checking (36); Neutralising (24); Hoarding (12); Order (20); and, Doubting (12). Therefore, two full scale scores, and fourteen subscales scores may be derived. The α coefficients for the subscales range from 0.70 to 0.95.

(iii) The Disgust Sensitivity Scale (Haidt, McCauley and Rozin (1994)

This is a 32-item scale measuring disgust sensitivity across seven domains: animals, body products, death, envelope violations (injuries, wounds etc), food, hygiene and sex. An eighth subscale (sympathetic magic) is included in the overall score. The questionnaire is divided into two parts with the first half requiring an answer of true or false, and the second requiring endorsement of a 3 point scale ranging from 0, "not disgusting at all", to 1 "slightly disgusting" and finally 2 "very disgusting". The α coefficients for the eight subscales range from 0.34 to 0.64.

(iv) Whitely Index (Pilowsky, 1967). This is a health anxiety questionnaire consisting of 14 statements which are answered by circling a number on a five point scale indicating how much the statement 'is true for you'. Anchors are 'not at all', 'a little bit', 'moderately' 'quite a bit' and 'a great deal'. The Whitely Index score is found by summing the responses. There is no set cutoff score, but healthy people without health anxiety generally have a score of 21 +/- 7 (14 to 28). Patients with hypochondria are found to have a score of 44 +/- 11 (32 to 55).

(v) 2 questions relating to the specific hypotheses which were answered by circling a number from 1 to 5 on a Likert type scale with anchors of " not at all" and "a great deal" - these were:

1. Do you think you can become ill after touching something which looks diseased?
2. Do you sometimes think you can catch an illness just by seeing someone who is ill?

(vi) 1 question relating to the fear of death - ("are you afraid of death?") which was answered by circling a number from 1 to 4 (1 not at all, 2 a little bit, 3 moderately, 4 a great deal) -

Procedure

Participants volunteered after becoming aware of the research via adverts in the OCD support group newsletter, posters in local libraries, by word of mouth or as part of the departmental research participation. They contacted the researcher and were either sent the questionnaires and asked to return them in a prepaid envelope, or (in the case of those recruited through the research participation scheme) were asked to fill them in during a teaching session. All volunteers completed the questionnaires in the same order and were told that they could withhold any identifying details if they wished.

Results

Overview.

Data exploration began with an examination of Disgust Sensitivity (DS) scores to check for assumptions of normality. Following this, total frequency and distress scores from the Obsessive Compulsive Inventory (OCI) were examined and as expected were found to be positively skewed, as were scores on all the subscales. This necessitated the transformation of these variables ($\log_{(10)}^x$) before going on to examine the relationship between these data and other variables. The analyses then proceeded as follows.

Correlational analyses were carried out between: i) DS and total and subscale scores of the OCI; ii) DS and Health Anxiety (HA); iii) DS and general anxiety as measured by the Beck Anxiety Inventory (BAI). Next, the distribution of responses to the question ‘Are you afraid of death?’ was inspected and the relationship between these responses and DS was explored using one-way Analysis of Variance.

After these preliminary analyses, an examination of the predictive power of the variables was undertaken using multiple regression analyses utilizing the Stepwise method because of its parsimony. The target variables were the OCI total frequency and distress scores, and the OCI subscale scores of particular relevance to this study – the washing and checking subscale scores. The main possible predictors were the DS, HA and BAI scores. Finally, the relationship between DS, HA, BAI, fear of death, OCI total (frequency and distress) scores and OCI washing (frequency and distress) scores was explored.

Disgust Sensitivity Scores

Disgust Sensitivity scores (DS) were examined. The mean score was 17.1 (SD 5.34).

Scores were normally distributed and can be seen in Table 1.

Insert Table 1 about here

OCI Scores

Total scores on the OCI (frequency) and OCI (distress) were calculated. For the OCI (frequency) scores, 271 respondents had a mean of 29.6, SD 20.2, and a range of 0-105.

The scores of the 269 respondents who completed the OCI (distress) scale had a mean of 22.3, SD 20.8, range of 0-118..

Relationship between Disgust Sensitivity and OCI measures

The correlation between DS and OCI total Frequency scores was $r=.33$ ($p<.0005$), and between DS and OCI total Distress scores was also $r=.33$, ($p<.0005$). Correlations between these subscales and disgust sensitivity scores are found in table 2.

Insert Table 2 about here

DS is highly correlated with all OCI subscales except hoarding frequency. The strongest relationship is between DS and both the washing frequency and the washing distress subscale.

Disgust Sensitivity: Health Anxiety and Anxiety

Scores on the Health anxiety (HA) questionnaire were examined. There were 239 respondents, with a mean of 26, SD 8.6, range was 15-55. The relationship between DS and HA was explored: $r = .29$, $p < .0005$. Anxiety scores (BAI) were examined. There were 271 respondents, with a mean of 13.4, SD 8.5, range was 0-48. The relationship between BAI and DS was explored: $r = .20$, $p = .001$

Fear of Death

The distribution of responses to the question “Are you afraid of death?” is as shown in Table 3:

Insert Table 3 about here

The relationship between this and disgust sensitivity was explored by one way Analysis of Variance using the groups divided according to their responses to the question. Overall there was a highly significant difference between the groups. ($F_{3,209} = 4.460$, $p = .005$). Tukey’s test revealed that those who endorsed the “Not at all” option were significantly less disgust-sensitive than the endorsers of “moderately” and “a great deal”.

Multiple Regression Analyses: Predictors of Obsessionality

In order to explore the relative importance of the range of variables to obsessive compulsive symptomatology, a stepwise multiple regression was carried out using HA, DS, and BAI scores as the explanatory variables on first the OCI Total Frequency Score and then the OCI Total Distress score. All three explanatory variables were significant: the order in which they were selected is shown in Table 4:

Insert Table 4 about here

The third models accounted for 41% of the variance in the OCI frequency scores and 44% of the variance in the OCI distress scores.

As noted above, the washing subscale of the OCI (both F & D) was the most strongly correlated with DS. In order to explore the relative importance of DS to the washing subscale as compared to the other relevant variables, a stepwise multiple regression was carried out using HA, DS and BAI scores as the explanatory variables on first the washing subscale (frequency) score and then the washing subscale (distress) score. As a further check on whether it is the contamination element of the disgust response which is of most importance in predicting scores of the washing subscales of the OCI, two other variables were entered into the multiple regression – answers to the questions “Do you think that you can become ill after touching something which looks diseased?” (Q1) and “Do you sometimes think you can catch an illness just by seeing someone who is ill?”

(Q2). These were coded on a 5 point Likert scale with “Not at all” to “a great deal” as anchors. These analyses are shown in Table 5:

Insert Table 5 about here

The fourth model accounted for 34% of the variance in the Washing frequency scores and the fourth model accounted for 37% of the variance in the Washing distress scores.

DS is the most significant element in considering washing frequency (behaviour), accounting for 21% of the variance, followed by HA then BAI. Health Anxiety is the most significant element in considering washing distress (affective response), accounting for 22% of the variance, followed by DS. In the final models relating to both washing frequency and distress, all the variables entered as significant predictors except Q2.

As Mancini et al. (2001) found that Disgust Sensitivity was also a significant predictor of checking behaviour, this analysis was also carried out here, looking at both checking frequency and distress scores. Results are shown in Table 6.

Insert Table 6 about here

BAI was the most important predictor of both frequency and distress scores (15% and 20% of variance accounted for respectively). The second model accounted for 20% of

the variance in the Checking frequency scores and the third model accounted for 24% of the variance in the Checking distress scores.

Relationship between all variables

A final analysis examined the relationship between DS, HA, BAI, fear of death scores, OCI total (frequency and distress) scores and OCI washing (frequency and distress) scores. Results are shown in Table 7.

Insert Table 7 about here

Discussion

The aim of the present study was to investigate the relationship between disgust sensitivity, obsessionality, health anxiety, general anxiety, fear of contamination and fear of death. Based on the existing literature, it was expected that disgust sensitivity, health anxiety and general anxiety would emerge as significant predictors of general obsessionality and of particular subtypes of obsessions, such as washing and checking. Overall, the results indicate that a relationship does exist between disgust sensitivity and the targeted variables. In a correlational analysis, disgust sensitivity scores were significantly related to all the obsessional subscales with the exception of hoarding. Additionally, they were also significantly related to health anxiety scores and general anxiety scores.

When assessing predictors of washing frequency and distress, disgust sensitivity emerged as the most important predictor of washing frequency, with health anxiety being the best predictor of washing distress. General anxiety emerged as the most important predictor of total obsession frequency whilst health anxiety was the best predictor of total obsession distress. General anxiety was also the best predictor of both checking frequency and distress, with disgust sensitivity playing only a marginal role. These results in part support the findings of Mancini et al. (2001) who found that washing behaviour was best predicted by disgust sensitivity. These findings do not however indicate that disgust sensitivity is a factor in all forms of obsessionality (see Sprengelmeyer et al. 1997). Indeed, disgust sensitivity was found to be of secondary importance in the prediction of washing distress, made little impact on the prediction of

checking frequency and distress, and was similarly lacking in explanatory power with relation to total frequency and distress scores.

The use of the OCI allowed us to assess the relative importance of predictors of frequency and distress separately: for example, it facilitated the evaluation of the effect of anxiety, health anxiety or disgust sensitivity on both the emotional response (distress scores) to the obsessional behaviour and on the incidences of the behaviour itself (frequency scores). An illustration of this is that whilst disgust sensitivity best predicted washing frequency, washing distress was best predicted by Health Anxiety scores, with disgust sensitivity entering only into the second model. This perhaps suggests disgust sensitivity may be important in the initial occurrence of obsessions (leading to a repetition of action for example) but plays a subsidiary role in the emotional consequences of those obsessions (distress). Essentially, it may be that disgust gives rise to some obsessions but subsequent processing of the obsession, such as worry about the implications for one's health, results in the experience of distress.

In sum, results reported here suggest that the potency of disgust sensitivity as an explanatory factor in obsessions is mainly confined to the washing behaviour, as measured by the washing frequency subscale. In terms of the conceptualization of disgust in psychopathology, the analyses suggest that as disgust sensitivity is related to measures of health anxiety, general anxiety and to OCD, it is likely to belong to this end of the spectrum of emotions rather than to those associated with the affective disorders.

A limitation of this study is that it was carried out with non-OCD patients. Although non-clinical samples can inform theoretical models of clinical conditions that are distributed along a continuum of severity, we cannot assume that this pattern of findings

would emerge in a sample of OCD patients. Even though there was a small percentage of OCD sufferers in the study, this was based on self-report and not on any diagnostic criteria. Therefore, even their responses may not be typical of clinical OCD. Future research should assess disgust sensitivity in a clinical sample.

It should also be noted that a significant amount of the variance in relation to the criterion factors was not explained by the variables here. Salkovskis (1985, 1989, 1999) has emphasised the importance of interpretations of responsibility in the aetiology of OCD, suggesting that the belief that one perceives oneself to be responsible for a possibly ruinous outcome if one does not act, is central to the OCD experience. On the other hand, Menzies, Harris, Cumming and Einstein (2000) suggest that exaggerated danger expectancies are central in obsessive-compulsive disorders with inflated responsibility playing a secondary role. It is possible that some of the variance could be explained by these factors and future research should include an assessment of the relative importance of these variables.

The connection between disgust sensitivity, health anxiety and clinical obsessions may be of use in treatment strategies, though the desensitisation of the general disgust response may present a challenge as Smits, Telch and Randall (2002) have found. However, it may give explanatory power to the cognitive behavioural conceptualization of obsessional washing. For instance, disgust sensitivity appears to be differentially related to - on the one hand, the frequency of washing behaviour and on the other, the distress experienced by those engaging in such behaviour. So disgust sensitivity may act as a trigger for obsessional concerns (thus impacting on frequency) but further non-disgust

specific processing of this initial triggering event ('what does this thought mean?') may be more responsible for increases in distress.

It is clear from this research that explanatory models need to be multi-dimensional and subtype specific. It is also clear that much remains to be discovered about the relationship between the emotion of disgust, health anxiety, and obsession.

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Tables

Table 1 Distribution of Disgust Sensitivity scores

Disgust Sensitivity Score (DS)	Frequency
0-4	2
5-9	28
10-14	51
15-19	103
20-24	67
25-29	19

Table 2 Correlations between Disgust Sensitivity scores and subscales of the OCI.

Variable	Correlation	P value
Washing Frequency	.41	<.0005
Washing Distress	.41	<.0005
Checking Frequency	.23	<.0005
Checking Distress	.23	<.0005
Doubting Frequency	.15	.013
Doubting Distress	.21	.001
Orderliness Frequency	.28	<.0005
Orderliness Distress	.33	<.0005
Obsessions Frequency	.20	.001
Obsessions Distress	.23	<.0005
Hoarding Frequency	.12	.057
Hoarding Distress	.14	.019
Neutralising Frequency	.18	.004
Neutralising Distress	.22	<.0005

Table 3. Relationship between fear of death and Disgust Sensitivity

	N(percentage)	Mean DS score
Not at all	66 (27%)	15.2
A little bit	76 (31%)	17.0
Moderately	67 (28%)	18.3
A great deal	33 (14%)	18.8
Total	242	

Table 4 Multiple Regression: Models for OCI Total Scores

OCI Frequency		% variance explained
1 st model: BAI	$F_{1,208}=92.1, p<.0005$	30
2 nd model:BAI + HA	$F_{2,207}=66.3, p<.0005$	39
3 rd model: BAI + HA+DS	$F_{3,206}=50.1, p<.0005$	41
OCI Distress		
1 st model: HA	$F_{1,207}=92.7, p<.0005$	31
2 nd model: HA+BAI	$F_{2,206}=74.2, p<.0005$	41
3 rd model: HA+BAI+DS	$F_{3,205}=54.5, p<.0005$	44

Table 5 Multiple Regression: Models for Washing Subscales Scores

Washing Frequency		% variance explained
1 st model: DS	$F_{1,208}=57.9, p<.0005$	21
2 nd model: DS+HA	$F_{2,207}=45.6, p<.0005$	30
3 rd model: DS+HA+BAI	$F_{3,206}=33.6, p<.0005$	32
4 th model: DS+HA+BAI+Q1	$F_{4,205}=28.1, p<.0005$	34
Washing Distress		
1 st model: HA	$F_{1,207}=59.0, p<.0005$	22
2 nd model: HA+DS	$F_{2,206}=49.5, p<.0005$	32
3 rd model: HA+DS+Q1	$F_{3,205}=38.8, p<.0005$	35
4 th model: HA+DS+Q1+BAI	$F_{4,204}=30.1, p<.0005$	37

Table 6 Multiple Regression: Models for Checking Subscales Scores

Checking Frequency		% variance explained
1 st model: BAI	$F_{1,208}=38.5, p<.0005$	15
2 nd model: BAI + DS	$F_{2,207}=27.3, p<.0005$	20
Checking Distress		
1 st model: BAI	$F_{1,207}=53.1, p<.0005$	20
2 nd model: BAI + HA	$F_{2,206}=34.3, p<.0005$	24
3 rd model: BAI + HA+ DS	$F_{3,205}=26.0, p<.0005$	27

Table 7: Summary of relevant correlations (Spearman's type)

	OCI total frequency score	OCI total distress score	Washing frequency score	Washing distress score
Disgust Sensitivity	.33	.33	.41	.41
Health Anxiety	.51	.54	.44	.48
BAI	.52	.51	.35	.33
Fear of Death	.16 ^a	.20 ^b	.23	.23

All significant at the $p < 0.0001$ level (2-tailed) except ^a $p = 0.017$ and ^b $p = 0.004$