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Hypochondriasis. diagnostic issues and treatment.

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Citation

Greeven, J. F. (2007, June 12). *Hypochondriasis. diagnostic issues and treatment*. Retrieved from <https://hdl.handle.net/1887/12082>

Version: Corrected Publisher's Version

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Downloaded from: <https://hdl.handle.net/1887/12082>

Note: To cite this publication please use the final published version (if applicable).

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**Experience and evaluation of health-related thoughts and
anxiety-reducing behaviours in subjects with
hypochondriasis and obsessive-compulsive disorder**

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Abstract

Introduction: The present explorative study compared several phenomenological aspects of hypochondriasis and OCD that have been derived from formerly developed theories on these disorders.

Methods: We included 27 subjects with hypochondriasis, 18 with OCD (according to DSM-IV criteria) and 23 healthy control subjects, and we investigated whether they differed on phenomenological aspects as fear of having and fear of acquiring a disease, experience and evaluation of health-related thoughts and safety-seeking behaviours.

Results: Subjects with hypochondriasis were significantly more often afraid of being and becoming ill than were OCD and healthy control subjects and they had significantly more health-related thoughts after bodily sensations than did either of the other groups. Subjects with hypochondriasis but also subjects with OCD evaluated their illness-related thoughts and behaviours unreasonable. Subjects with hypochondriasis evaluated these thoughts and behaviours as significantly more unreasonable than did the healthy controls.

Discussion: Although some of our results are in line with current theories on hypochondriasis and OCD, others are less theory-consistent. Fears of having and acquiring an illness co-occur in hypochondriasis. Moreover, subjects with hypochondriasis seem to be more aware that their thoughts are unreasonable than was previously expected. Additional research on the meta-cognitions of subjects with hypochondriasis is warranted.

Keywords: hypochondriasis, obsessive-compulsive disorder, illness fear, meta-cognitions

Introduction

During the last decade, a number of important differences have been observed between subjects with hypochondriasis and subjects with OCD. Fallon (2000) hypothesized that the differences between hypochondriasis and OCD are primarily related to the distinction between the fear of having an illness, which is the defining feature of hypochondriasis, and the fear of acquiring an illness, which is common in subjects with OCD. In one study, he found that the number of days in which subjects with hypochondriasis were afraid of being ill exceeded the number of days that they were afraid of becoming ill, but no comparison was made between subjects with hypochondriasis and subjects with OCD (Fallon, Javitch, Hollander, & Liebowitz, 1991).

Barsky (1992) further postulated that, although subjects with hypochondriasis and OCD subjects have largely the same symptom presentation, they differ in ideation and (meta-) cognitions. Meta-cognitions can be defined as knowledge or beliefs about thinking and strategies used to regulate and control thinking processes (Moses & Baird, 1996). Barsky suggested that, unlike subjects with OCD, subjects with hypochondriasis tend to view their fears of illness and the subsequent anxiety-reducing behaviours as reasonable, sensible and appropriate; they do not try to resist them, and they openly proclaim their distress (i.e., they feel no shame about their preoccupations and fears). Furthermore, subjects with hypochondriasis

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have embedded their ideas about health and bodily symptoms within relatively inflexible thought patterns or schemas. In contrast, the ideas of OCD subjects tend to lack an organising principle and are perceived as discrete entities that disrupt the train of thought (Barsky, 1992). Finally, it was noted that OCD is characterized by exceptional feelings of responsibility for harm to self or others in the near future (Salkovskis, 1985, 1889), while disease conviction in the present is an important characteristic of hypochondriasis. In line with this notion, the behaviour of OCD subjects is likely to be directed toward avoiding places where they expect 'danger' (e.g., germs or radiation). In contrast, subjects with hypochondriasis are more likely to check their bodies or seek reassurance (c.f., Kellner, Abbott, Winslow & Pathak, 1987).

To date, only one study has focused specifically on the differences between the meta-cognitions of hypochondriac subjects and those of OCD subjects. This study concentrated on the extent to which both patient groups evaluated their ideations as reasonable. The results were consistent with the researchers' expectations: subjects with hypochondriasis exhibited higher levels of overvalued ideas (i.e., they evaluated their thoughts as more credible) than did the subjects with OCD (Neziroglu, McKay & Yaryura-Thomas, 2000). A replication of this study with OCD subjects who are afraid of acquiring a disease would be interesting, as this subtype is sometimes difficult to distinguish from hypochondriasis (Fallon et al., 1991; Rasmussen & Eisen, 1992; Fallon, 2000).

In the present explorative study an attempt was made to test some of these theory-driven hypotheses. For this aim, we conducted an explorative phenomenological study comparing subjects with

hypochondriasis, OCD subjects afraid of acquiring a disease and healthy control subjects. We formulated the following research questions: To what extent do subjects with hypochondriasis, subjects with OCD and healthy control subjects differ from each other on (i) fear of having a disease and fear of acquiring a disease, (ii) experience and evaluation of health-related thoughts and (iii) experience and evaluation of safety-seeking behaviours.

Methods

Study population

Patients who were at least 18 years of age and who met the DSM-IV criteria for hypochondriasis or OCD (established by means of the Structured Clinical Interview for DSM-IV Axis-I Disorders, SCID (First, Spitzer, Gibbon, & Williams, 1996)). They were selected within a framework of two separate randomized controlled trials (RCTs) conducted at two outpatient clinics for anxiety disorders in Leiden and Amsterdam (van Oppen, van Balkom, de Haan & van Dyck, 2006; Greeven et al., 2006). Exclusion criteria in both RCTs were as follows: co-morbid diagnoses of psychotic disorders, substance-use disorders, organic mental disorders, allergy to SSRIs and having received psychotherapy elsewhere. Pregnant and lactating women and patients who were using concomitant antidepressants, mood stabilizers, anti-psychotics or anti-coagulants were also excluded. Patients with co-morbid diagnoses of mood disorders, anxiety disorders and other somatoform disorders were included if they indicated that hypochondriasis or OCD was the psychiatric disorder from which they suffered the most.

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Medical records were reviewed to ensure that hypochondriacal complaints could not be explained by somatic illness. No patients were excluded because of a medical diagnosis. Since the present study was a small and explorative part of these RCT's, only 27 of the 112 consecutive hypochondriasis patients in the RCT and 43 of the 125 consecutive OCD patients included in the RCT participated and no special eligibility criteria were required. Of the patients with hypochondriasis, 66% had been referred by their general practitioners and 34% had responded to articles in newspapers. The corresponding percentages for the OCD patients were 73% and 27%. Written informed consent was obtained from each patient. The study received ethical approval from the participating medical centres, and it was conducted between January 1998 and July 2002. A convenience sample of normal control subjects ($N = 35$), matched for gender and age, was recruited among psychology students and relatives of students, all of whom were unaware of the purpose of the study. Subjects who reported having received any psychological or psychiatric help in the past were excluded. No formal interview, like the SCID, was administered to them to exclude a formal psychiatric diagnosis.

Assessment

The presence and severity of hypochondriacal symptoms was assessed using the hypochondriasis Y-BOCS, a clinician-administered semi-structured interview assessing presence and severity of hypochondriacal symptoms consisting of three a priori dimensions: hypochondriacal obsessions (including insight), compulsions and avoidance. The

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hypochondriasis Y-BOCS has exactly the same format as the OCD Y-BOCS and has good psychometric properties¹.

The presence and severity of OCD symptoms were assessed using the OCD Y-BOCS (Goodman, Rasmussen et al., 1989; Goodman, Price et al., 1996).

Considering the explorative character of the present study, we asked our participants several explorative questions on fear of having a disease, fear of acquiring a disease, experience and evaluation of health-related thoughts and safety-seeking avoidance behaviours. The final set of questions showed face validity according to several Dutch researchers and therapists on the field of hypochondriasis and OCD, but no additional psychometric analyses to assess its further validity or reliability were conducted. To answer our research questions, we selected those OCD and healthy control subjects who answered affirmatively to the question, 'Are you afraid of being ill or becoming ill in the future?' We further asked our subjects 16 questions concerning 1) the presence of illness fears and illness conviction, 2) the experience and evaluation of health-related thoughts, 3) the presence and evaluation of checking, 4) the presence and evaluation of avoiding and 5) the presence and evaluation of consulting behaviour. Response options were presented in a six-point Likert-scale format, ranging from 1 ('never') to 6 ('always'). The specific content and formulation of the questions is attached as an appendix to this article.

¹ Hypochondriasis Y-BOCS: a study on the psychometric properties of a clinician-administered semi-structured interview to assess hypochondriacal thoughts and behaviours, submitted for publication, Greeven, Spinhoven & van Balkom, 2006.

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Statistical analyses

Because of the non-normal distribution of the items of our questionnaire, we used Kruskall-Wallis tests to analyze differences between the three groups with regard to demographic and clinical variables. When significant main effects were found, pair-wise comparisons were conducted using Mann-Whitney tests. We used χ^2 tests for categorical variables. All tests were two-tailed, with alpha set at 0.05.

Results

In total, 68 subjects were included in the study. All 27 subjects with hypochondriasis were included, while 18 (42%) of the 43 OCD subjects and 23 (66%) of the 35 healthy control subjects were included (they had answered our selection question affirmatively).

None of the subjects with hypochondriasis suffered from a co-morbid diagnosis of OCD, and none of the OCD subjects suffered from co-morbid hypochondriasis.

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Table 1: Comparison of demographic and clinical characteristics of subjects with hypochondriasis, OCD and healthy control subjects

	hypochon-driasis	OCD	healthy control	p-
Age	42.0 ± 12.5	32.3 ± 4.0	43.1 ± 15.2	ns
Sex	18 (67%)	10 (56%)	16 (73%)	ns
Hypochondriasis Y-BOCS				
Obsessions	12.0 ± 3.7	3.1 ± 4.8	0.0 ± 0.0	<.001
Compulsions	10.0 ± 3.2	1.5 ± 3.0	0.0 ± 0.0	<.001
Avoidance	8.0 ± 5.5	1.6 ± 3.7	0.0 ± 0.0	<.001
Total	30.1 ± 10.3	6.3 ± 9.9	0.0 ± 0.0	<.001
OCD Y-BOCS				
Obsessions	2.4 ± 3.3	12.2 ± 2.9	0.0 ± 0.0	<.001
Compulsions	1.8 ± 3.5	12.1 ± 2.8	0.0 ± 0.0	<.001
Total	1.8 ± 3.5	24.3 ± 4.8	0.0 ± 0.0	< .001

As shown in table 1, there were no significant differences between the three groups with regard to either age or sex distribution. Subjects with hypochondriasis scored significantly higher than the OCD subjects did on the hypochondriasis Y-BOCS, and OCD subjects scored significantly higher than subjects with hypochondriasis did on the OCD Y-BOCS.

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Table 2: Comparison of thoughts and behaviour of subjects with hypochondriasis, OCD and healthy control subjects

	Group 1 ¹ (n = 27)	Group 2 ² (n = 18)	Group 3 ³ (n = 23)	
Content of thoughts				
Fear of being ill	3.3 ± 1.2	1.3 ± 1.6	0.9 ± 0.9	1 > 2***; 1 > 3***; 2 = 3
Fear of becoming ill	3.4 ± 1.0	2.4 ± 1.4	1.4 ± 2.0	1 > 2*** ; 1 > 3***; 2 > 3*
Experience of thoughts				
Thoughts after bodily sensation	3.9 ± 1.0	2.0 ± 1.9	1.5 ± 1.2	1 > 2***; 1 > 3***; 2 = 3
Sudden thoughts	2.7 ± 1.4	2.2 ± 1.3	1.3 ± 1.3	1 = 2; 1 > 3* ; 2 > 3*
Evaluation of thoughts				
Thoughts unreasonable	2.4 ± 1.5	2.2 ± 1.5	1.3 ± 1.9	1 = 2; 1 > 3*; 2 = 3
Checking				
Frequency of checking	6.3 ± 1.0	3.9 ± 2.2	1.4 ± 0.7	1 > 2**; 1 > 3**; 2 > 3**
Checking unreasonable	2.3 ± 1.8	1.2 ± 1.7	0.4 ± 0.8	1 = 2; 1 > 3*; 2 = 3
Checking preventive	1.4 ± 1.6	1.7 ± 1.7	1.0 ± 1.3	1 = 2 = 3
Checking reassuring	2.1 ± 1.5	2.6 ± 0.9	1.7 ± 1.8	1 = 2 = 3
Avoiding				
Frequency of avoiding	4.5 ± 2.3	5.1 ± 2.1	0 ± 0	1 = 2
Avoiding unreasonable	1.8 ± 1.9	2.0 ± 2.1	0 ± 0	1 = 2
Avoiding preventive	0.8 ± 1.1	3.4 ± 1.1	0 ± 0	1 < 2**
Consulting doctors/family members				
Frequency of consulting	3.0 ± 2.0	2.1 ± 2.0	1.0 ± 0	1 = 2; 1 > 3*; 2 = 3
Consulting unreasonable	1.3 ± 1.6	1.5 ± 1.7	2.0 ± 0	1 = 2 = 3
Consulting preventive	1.4 ± 1.6	1.3 ± 1.6	1.4 ± 0.9	1 = 2 = 3
Consulting reassuring	3.5 ± 1.3	3.2 ± 1.1	1.9 ± 0.4	1 = 2; 1 > 3*; 2 > 3**

* p < 0.05; **p < 0.01; *** p < 0.001;

¹ Hypochondriasis; ² OCD; ³ Healthy Control-group members

As shown in table 2, subjects with hypochondriasis were afraid of being and becoming ill significantly more often than either the OCD subjects or the healthy control subjects were. Subjects with OCD were afraid of becoming ill significantly more often than were the healthy control subjects. The correlation between the fear of being ill and the fear of becoming ill was significant for subjects with hypochondriasis ($r = 0.57, p < 0.01$), but not for subjects with OCD ($r = 0.33$) or for healthy control subjects ($r = -0.27$).

In comparison to OCD and healthy control subjects, subjects with hypochondriasis experienced health-related thoughts significantly more often after bodily sensations. Compared to healthy control subjects, subjects with hypochondriasis and OCD subjects reported sudden thoughts significantly more often. Subjects with hypochondriasis evaluated their health-related thoughts as unreasonable significantly more often than did healthy control subjects.

Both clinical groups checked their bodies significantly more often than did the healthy control subjects. Subjects with hypochondriasis, however, checked their body significantly more often than did subjects with OCD. As shown in table 2, subjects with hypochondriasis evaluated their checking behaviour as unreasonable significantly more often than did the healthy control subjects.

Subjects with OCD avoided certain situations out of prevention significantly more often than did subjects with hypochondriasis.

Subjects with hypochondriasis consulted doctors and family members significantly more frequently than did the healthy control subjects. Subjects with hypochondriasis and OCD subjects consulted doctors and

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family members to be reassured significantly more often than did the healthy control subjects.

Discussion

The present explorative study examined the extent to which subjects with hypochondriasis, subjects with OCD and healthy control subjects differ from each other on the presence of (i) fear of having a disease and fear of acquiring a disease, (ii) experience and evaluation of health-related thoughts and (iii) experience and evaluation of safety-seeking behaviours.

Subjects with hypochondriasis reported significantly more fear of having a disease and fear of acquiring a disease than did subjects with OCD or healthy control subjects, while OCD subjects reported significantly more fears of acquiring a disease than did healthy control subjects. The correlation between fear of having a disease and fear of acquiring a disease was significant only for subjects with hypochondriasis. This is an interesting finding in light of the assumption that the perception of immediate threat (e.g., illness conviction) in subjects with hypochondriasis and fear of harm in the near future (e.g., illness fear) by OCD subjects is a characteristic distinction between hypochondriasis and OCD (Kellner et al., 1987).

Furthermore, there has been a debate going on whether illness fears and illness convictions are two separate constructs within hypochondriasis (Kellner, 1987, Pilowsky, 1967) or whether they represent two phenomenologically different syndromes (Cote et al., 1996) (c.f. Noyes, Langbehn, & Carney, 2004). Our results, however, support none of both

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hypotheses: both fear of having a disease and fear of acquiring a disease are associated and characteristic features of hypochondriasis.

The second objective of our study was to investigate the experience and evaluation of health-related thoughts in all three groups. In line with the DSM-IV criteria for hypochondriasis (American Psychiatric Association, 1994), health-related thoughts after the experience of a bodily sensation were reported more often by subjects with hypochondriasis than they were by either OCD subjects or healthy control subjects. Both OCD subjects and subjects with hypochondriasis reported significantly more sudden illness-related thoughts than did healthy control subjects.

Subjects with hypochondriasis and OCD subjects did not differ in the evaluation of their health-related thoughts and checking behaviours. In contrast to the suggested differences between both patient groups, as formulated by Barsky (1992) and Neziroglu et al. (2000), our results imply that subjects with hypochondriasis are at least as aware that their health-related thoughts and checking behaviours are unreasonable as OCD subjects are. Moreover, Hypochondriasis evaluated their health-related thoughts and checking behaviours as significantly more unreasonable than the healthy control subjects did. These findings are in contrast to the current image of subjects with hypochondriasis, who are generally considered as difficult, treatment refractory patients and it could have important treatment implications, as both researchers and clinicians generally accept that being aware of that of disturbing thoughts might be unreasonable, or in other words, the presence of insight is pivotal for amelioration or recovery.

Our third research question was directed at the evaluation of safety-seeking behaviours. Subjects in both clinical groups checked more

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frequently than did healthy control subjects, while subjects with hypochondriasis checked their bodies significantly more frequently than did the OCD subjects. In addition, subjects with hypochondriasis consulted doctors and family members more frequently than healthy control-group members did. In accordance with cognitive behavioural theory concerning OCD (Salkovskis, 1985), OCD subjects perceived their avoidance behaviour significantly as a way of preventing illness more frequently than did either subjects with hypochondriasis or healthy control subjects. Both OCD subjects and subjects with hypochondriasis were more frequently inclined than healthy control-group members were to consult doctors and family members in order to be reassured.

We must be cautious when drawing definite conclusions from the present results, as our study is subject to several important limitations. First, with regard to the first research question, the finding that subjects with hypochondriasis reported fear of becoming ill in the future significantly more frequently than did subjects with OCD, although quite interesting in itself, should urge caution when interpreting the differences in the perception of health-related thoughts and safety-seeking behaviours between the groups. We selected our OCD subjects according to affirmative answers to the following question: 'Are you afraid of being ill or becoming ill in the future?' Our study population thus may not provide the necessary representative reflection of the subgroup of OCD subjects who suffer from somatic or contamination obsessions and cleaning or washing compulsions. Second, we asked our subjects several explorative questions that only have face validity, but possibly lack construct validity. For example, we did not ask our subjects directly about disease conviction, but asked them whether

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they were afraid of having an illness. Third, our sample size was rather small, especially the OCD group, and consequently possible significant differences between the groups may have remained undetected.

To the best of our knowledge, this study is the first attempt to establish the differences between hypochondriasis and OCD (as described by Barsky, 1992) empirically. A number of the theoretical differences were not confirmed by our data: subjects with hypochondriasis reported both fear of having a disease and fear of acquiring a disease, reported sudden thoughts (but subjects with hypochondriasis experienced more health related thoughts after a bodily sensation) and they evaluated their health-related thoughts and behaviours as more unreasonable than OCD subjects did. OCD subjects and subjects with hypochondriasis also conducted similar safety-seeking behaviours, although OCD subjects avoided situations more from the point of view of prevention

The results of this study do implicate, that the nosological boundaries of hypochondriasis might need further revision. We agree with the suggestion of Creed and Barsky (2004) that the current categorical approach of hypochondriasis in the DSM-IV does damage to the variety in expressions of this disorder. These authors suggest that this approach should be replaced by a dimensional approach, which might more completely describe the nature and the extent of hypochondriacal complaints. Future research should focus on which dimensions (e.g. illness fears, illness conviction, bodily symptoms, and insight (cf Creed & Barsky, 2004)) properly define the construct hypochondriasis. In particular more attention needs to be paid to insight. Although 'poor insight' is a specifier in the current DSM-IV, it has rarely been investigated. It would, however, be

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interesting to compare characteristics and associated features of subjects with hypochondriasis with or without insight (like safety-seeking behaviors, prognosis and treatment efficacy).

Our results may also have further relevant implications for clinical practice. Interest in the role of meta-cognitions in the development and maintenance of anxiety disorders has been increasing recently. A prominent message that emerges from research on meta-cognitions in Generalized Anxiety Disorder, OCD and Post-traumatic Stress Disorder is that treatment should focus on challenging meta-cognitions in order to develop more adaptive meta-cognitive knowledge (Wells, 1995). The results of treatment studies on meta-cognitions seem promising (Wells & Semb, 2004; Fisher & Wells, 2005). In line with these developments, the literature on hypochondriasis stands to benefit greatly from a shift in focus from the presence and the content of health-related intrusions and worries to their perception and significance. The primary goal of this shift would be the extension and improvement of the existing treatment arsenal with such therapeutic techniques as challenging meta-cognitive beliefs and mindfulness (Wells, 2002).

Appendix

Selection question 'Are you afraid of being ill or becoming ill in the future?'

No/Yes

Response options for the following questions were presented in a six-point Likert scale format, ranging from 1 ('never') to 6 ('always')

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1. How often are you afraid that you are currently suffering from a serious disease?
2. How often are you afraid that you will become seriously ill in the future?
3. When you have thoughts about a serious disease, how often do these thoughts occur after a bodily sensation?
4. When you have thoughts about a serious disease, how often do these thoughts occur to you suddenly?
5. How often do you find your thoughts about a serious disease unreasonable?

The following questions concern checking behaviour. Checking means controlling your body for feared symptoms (e.g. lumps and swellings), because of your fear of having or acquiring a disease.

6. How often do you check your body because of your fear of having or acquiring a disease?
7. How often do you find your checking behaviour unreasonable?
8. How often do you think that checking your body will prevent you from becoming ill?
9. How often can you reassure yourself by checking your body?

The following questions concern avoidance. Avoidance means not carrying out certain activities or avoiding certain situations, which confront you with your fear of having or acquiring a disease.

10. How often do you avoid certain activities because of your fear of having or acquiring a disease?
11. How often do you find the avoidance of activities for fear of a serious disease unreasonable?

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12. How often do you think that avoiding activities for fear of a serious disease will prevent you from becoming ill?

The following questions concern consultation of family friends about your fear of having or acquiring a disease.

13. How often do you consult friends or family members because of your fear of having or acquiring a disease?

14. How often do you find consultation with physicians and/or friends out of fear of a serious disease unreasonable?

15. How often do you think that consulting physicians and/or friends out of fear of a serious disease will prevent you from becoming ill?

16. How often can you reassure yourself by consulting physicians and/or friends out of fear of a serious disease?