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ScienceDirect
Comprehensive Psychiatry 48 (2007) 132–136
Comprehensive PSYCHIATRY
www.elsevier.com/locate/comppsych

Specific phobia and comorbid depression: a closer look at the National Comorbidity Survey data

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Abstract

Previous studies examining the relationship between specific phobia and major depression have reported mixed findings. The results of some studies have suggested that specific phobia is associated with a higher prevalence of comorbid depression, whereas others have found no association. The purpose of this study was to further examine whether specific phobia is an independent contributor to major depression by using data from the National Comorbidity Survey, a household probability sample of adults (n = 5877) aged 15 to 54 years in the United States. After adjusting for demographic differences and comorbid mental disorders, multiple logistic regression analyses confirmed that specific phobia remains positively associated with comorbid depression (odds ratio, 1.9; 95% confidence interval, 1.6-2.4). Additional analysis found this relationship to be specific to individuals with a fear of heights, animals, and closed spaces, as well as those endorsing at least 2 irrational fears. These results suggest that the types and number of fears play an important role in the probability of lifetime depression.

1. Introduction

It is well known that specific phobia and depression are highly comorbid disorders, where the onset of specific phobia precedes that of depression in most cases [1,2]. Several studies have closely examined the relationship between specific phobia and depression, but they have reported mixed findings. One study was based on the Epidemiologic Catchment Area (ECA) survey of an adult community sample, which found specific phobia to be an independent predictor of major depression [3]. However, reports of 2 prospective, longitudinal studies did not find such a link between specific phobia and depression [4,5]. In the National Comorbidity Survey (NCS), specific phobia has also been associated with depression, but the nature of this relationship has not been well characterized [6]. Specifically, it is not clear if the association remains significant after adjusting for potential confounding psychiatric disorders. In addition, it is not known to what extent the risk of depression is related to the types (eg, heights, animals) and numbers of fears or phobias.

The purpose of this study was to determine if the link between specific phobia and depression remains significant after adjusting for demographic and comorbid psychiatric illnesses. If a positive association exists, it would also be interesting to see if this association is specific to a particular type and number of fears. Thus, our second goal is to look at the contributions of the specific types and numbers of irrational fears to lifetime diagnosis of depression. Although it would also be helpful to do a similar analysis with respect to types and numbers of phobias, this was not possible in the existing sample. The reason is that for individuals who endorsed more than one fear, the NCS diagnostic instrument did not establish which fears accounted for the phobia diagnosis.[1] Examining irrational fears may give a crude approximation of how the corresponding types and numbers of phobias relate to depression.

2. Methods

The NCS is based on a national probability sample (n = 5877) of individuals aged 15 to 54 years living in the community in the United States. Fieldwork was carried out between September 1990 and February 1992 with a

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doi:10.1016/j.comppsych.2006.10.010

[1] One way to isolate the different phobia types is to look at cases that endorse only one fear. However, this results in a very small number of cases (n = 161) such that examining the rate of depression in each of the phobia types would not be representative of the phobia population.

Table 1
Prevalence of lifetime major depression among adults with specific fears in the community

No. of adults with specific fears	Lifetime prevalence of major depression among those with specific fears	
	N	%
Storms (n = 502)	142	28.3
Water (n = 559)	159	28.4
Close spaces (n = 694)	233	33.6
Flying (n = 729)	192	26.3
Blood (n = 798)	223	27.9
Heights (n = 1199)	326	27.2
Animal (n = 1272)	356	28.0

response rate of 82.4%. A full description of study methodology is described in detail elsewhere [7].

2.1. Diagnostic assessment

Diagnostic and Statistical Manual of Mental Disorders, Revised Third Edition diagnoses were obtained by lay interviewers trained in using a modified version of the World Health Organization Composite International Diagnostic Interview [8,9]. The psychiatric disorders included major depression, dysthymia, generalized anxiety disorder (GAD), specific phobia, social phobia, nonaffective psychosis, bipolar disorder, panic attacks, panic disorder, agoraphobia, posttraumatic stress disorder (PTSD), alcohol dependence, and substance dependence (past 12-month and lifetime prevalence). Recruitment and consent were approved by the Human Subjects Committees at the Harvard Medical School (Boston, MA) and the University of Michigan (Ann Arbor, MI).

For the assessment of specific phobia, individuals were first presented with a list of fears that fell into 8 categories, including fears of water, heights, thunder, animals, blood/dental fear, flying, closed spaces, and being alone. Those who endorsed at least one fear were then evaluated for a phobia diagnosis. If they meet criteria for a phobia diagnosis, it was not specified as to which of the fears accounted for the diagnosis. In addition, if one or more fears were endorsed, the age of onset was determined only for the first fear, thus, not necessarily reflective of the age of onset of the phobia. A more detailed description is provided elsewhere [10].

2.2. Statistical analysis

Analyses were carried out with STATA 6.0 Statistical Software package (STATA, College Station, TX). First, the prevalence of specific phobia was determined in the sample. Univariate analyses were then used to compare the rate of lifetime depression among those with and without specific phobia. Next, multiple logistic regression analyses were used to determine the relationship between specific phobia and the odds of major depression, adjusting for differences in demographic characteristics (age, sex, race, marital status, income, education), and then additionally adjusting for other mental disorders (panic disorder, agoraphobia, PTSD, GAD, social phobia, bipolar disorder, alcohol and drug dependence). Results are reported in odds ratios (OR) with 95% confidence intervals (CI) for all multiple logistic regression analyses.

Additional analyses were conducted to examine the contributions of each of the specific fears, and numbers of fears, to a lifetime diagnosis of major depression. For these analyses, the "fear of being alone" group was excluded because it was not an official subtype of specific phobia according to the *Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition* [11]. First, the prevalence of each of the specific types of fears and the prevalence of having one or more fears were determined. Univariate analyses were then used to compare the rate of lifetime depression among the types and numbers of fears. To examine the contributions of each specific fear to the odds of major depression, multiple logistic regression analyses were used, adjusting for demographic and other mental disorders and additionally adjusting for all other specific fears. To examine the relationship between the numbers of fears and major depression, multiple logistic regression

Table 2
Association between types of specific fears and major depression among adults in the community

Types of specific fears	Lifetime prevalence of major depression		
	Unadjusted	Adjusted for demographics and other mental disorders[a]	Adjusted for demographics, other mental disorders,[a] and all other specific fears
Storms	2.1 (1.6-2.6)[b]	1.3 (0.97-1.6)	0.9 (0.7-1.2)
Water	2.1 (1.7-2.6)[b]	1.4 (1.01-1.8)[b]	1.1 (0.8-1.3)
Close spaces	2.9 (2.3-3.8)[b]	1.6 (1.2-2.2)[b]	1.4 (1.04-1.8)[b]
Flying	1.9 (1.6-2.3)[b]	1.3 (1.01-1.7)[b]	1.0 (0.72-1.3)
Blood	2.2 (1.7-2.7)[b]	1.4 (1.2-1.8)[b]	1.2 (0.9-1.5)
Heights	2.2 (1.9-2.6)[b]	1.7 (1.4-2.05)[b]	1.4 (1.2-1.8)[b]
Animal	2.4 (2.0-2.9)[b]	1.8 (1.5-2.1)[b]	1.6 (1.3-1.9)[b]

Values are expressed as OR (95% CI). The contrast group for ORs among the specific fears was the group not endorsing that particular specific fear.

[a] Demographics include age, sex, marital status, race, education, and income. Other mental disorders include panic disorder, agoraphobia, PTSD, GAD, social phobia, bipolar disorder, and alcohol and drug dependence.

[b] Denotes significance at the .05 level, 2-sided test.