

## **Social Anxiety and Fear of Bodily Sensations in Panic Disorder and Agoraphobia: A Matched Comparison**

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*This study tests the hypothesis that social anxiety and fear of bodily sensations are associated with the development of agoraphobic avoidance behavior in panic disorder patients. Twenty patients with panic disorder were compared to 20 patients with panic disorder with agoraphobia, matched by sex and duration of disorder. The two groups did not differ on measures of fear and frequency of assertive social responses. However, the agoraphobics scored higher on measures of interpersonal sensitivity, depression, feelings of inadequacy, and hostility. They also reported higher fear of bodily sensations. Although definitive conclusions need to be postponed until prospective studies have been conducted, there is evidence suggesting that the development of agoraphobia in panic patients is associated with hypersensitivity to bodily sensations and interpersonal situations.*

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**KEY WORDS:** panic disorder; agoraphobia; interpersonal sensitivity; fear of bodily sensations.

### **INTRODUCTION**

The importance of panic attacks in the genesis of agoraphobia is supported by research findings and now generally accepted. In two samples of

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agoraphobic patients agoraphobic symptoms were always preceded by the onset of spontaneous panic attacks (Thyer & Himle, 1985; Garvey & Tuason, 1984). Other investigators found this to be true in 97% and 94.5% of agoraphobic patients (Uhde, Boulenger, & Roy-Byrne, 1985; Aronson & Logue, 1987). In line with these findings, the revised edition of the DSM-III (American Psychiatric Association, 1987) has replaced the former category "agoraphobia with panic attacks" with the new term "panic disorder with agoraphobia," thus emphasizing the primary role of panic.

It has been suggested that panic disorder represents a precursory stage of agoraphobia, that is, before phobic avoidance has developed (Sheehan & Sheehan, 1982). A number of studies have addressed the question of identifying characteristics that might predispose a panic patient for the development of agoraphobia. All of these studies have been cross-sectional comparisons of patients diagnosed as either panic disorder or agoraphobia. Aronson and Logue (1987) found that female sex, high interpersonal sensitivity, and any childhood anxiety or depressive disorder were associated with the development of phobic avoidance in panic disorder patients. Pollard and Cox (1988) found that agoraphobics scored higher than panic patients on a measure of social-evaluative anxiety. Thyer, Himle, Curtis, Cameron, and Nesse (1985) found that agoraphobics scored higher on ratings of interpersonal sensitivity, phobic anxiety, paranoid ideation, and alcohol use. Panic disorder patients had more frequent remissions of anxiety symptoms than agoraphobic patients.

A considerable confounding factor in all of these studies is duration of disorder. For instance, it is well-known that panic disorder or agoraphobia of long duration can give rise to substantial depressive symptomatology (e.g., Lesser *et al.*, 1988). Any observed differences between panic disorder and agoraphobic patients may be attributable to the longer duration of the disorder in the agoraphobics. In fact, the agoraphobic patients in the Thyer *et al.* (1985) study had their symptoms an average of 2 years longer than the panic disorder patients. Aronson and Logue (1987) did not report the duration of disorder for their patients. Pollard and Cox (1988) found no significant difference in duration of disorder for the panic and agoraphobic groups.

Two variables which may influence the development of agoraphobia are social anxiety and fear of bodily sensations. Social anxiety might play a role in the development of agoraphobia because socially anxious patients might feel embarrassed when others witness their panic. The role of fear of bodily sensations in the development of agoraphobia has been mentioned by Goldstein and Chambless (1978). They conceptualize agoraphobia as the product of interoceptive conditioning in which the conditioned stimuli are internal bodily sensations. In recent years, other authors have extended the concept of fear of bodily sensations to panic patients in general (Clark, 1986; van den Hout, van der Molen, Griez, & Lousberg, 1987).

The purpose of the present study is to compare a group of patients with panic disorder and a group of patients with agoraphobia, matched by sex and duration of disorder. Panic and agoraphobic patients are compared on measures of social anxiety and fear of bodily sensations. To allow cross-validation of others' findings, we will also compare the two groups on two well-known measures – the State Trait Anxiety Inventory and the Symptom Checklist-90.

## METHOD

### Diagnosis

Patients referred to our research project on anxiety disorders were judged by a referring professional as possibly suffering from an anxiety disorder.

On a first visit the Anxiety Disorders Interview Schedule—Revised [ADIS-R (DiNardo, O'Brien, Barlow, Waddell, & Blanchard, 1983); Dutch version (de Ruiter, Garssen, Rijken, & Kraaimaat, 1987)] was administered. The ADIS-R is a structured interview protocol specifically designed to facilitate differential diagnosis among the anxiety disorders. In addition, the ADIS-R provides screening for affective disorders, somatoform disorders, substance use, and psychotic symptoms. The interview has been shown to permit reliable differential diagnosis among the anxiety disorders in an American sample (DiNardo *et al.*, 1983). Data from a reliability study using the Dutch version of the ADIS-R also showed acceptable diagnostic agreement (de Ruiter, Prick, Moons, Garssen, & Beerkens, 1988). Kappa was .65 for agoraphobia and .60 for panic disorder, using DSM-III criteria (American Psychiatric Association, 1980). In the present study diagnoses were arrived at through consensus agreement between two clinicians experienced with anxiety disorder patients.

A number of psychological questionnaires were administered on a second visit to the research program.

### Subjects

Subjects included 20 patients with panic disorder and 20 patients with panic disorder with agoraphobia, diagnosed according to DSM-III-R criteria (American Psychiatric Association, 1987). Severity of avoidance for the patients with panic disorder with agoraphobia was severe in five patients, moderate in eight, mild in six, in partial remission in one patient. The 20 agoraphobic patients were taken from a larger sample of 88 agoraphobic patients. Of the 40 patients, 26 were referred by psychiatric

residents at the outpatient clinic of the Psychiatric Department of the University Hospital of Utrecht; 7 were referred by other outpatient clinics in the area, and 7 were self-referred.

The two groups were matched by sex and duration of disorder. There were 9 men and 11 women in each group. Mean duration of the disorder was 51.0 months (SD = 71.9) for the agoraphobic group and 50.2 months (SD = 69.6) for the panic disorder group. In each group there were 11 patients who were medication-free. Of the remaining patients in the panic disorder group, medications were antidepressant plus benzodiazepine (one patient), benzodiazepine (four patients), benzodiazepine plus nonpsychotropic medication (two patients), and nonpsychotropic medication (two patients). In the agoraphobic group one patient used an antidepressant plus a benzodiazepine, seven used a benzodiazepine, and one used nonpsychotropic medication. The two groups did not differ significantly in age [ $t(38) = -.52, p < .61$ ], education [ $\chi^2(3) = .97, p < .81$ ], referral source [ $\chi^2(2) = .44, p < .80$ ], or use of medication [ $\chi^2(5) = 3.73, p < .59$ ].

### Measures

*State-Trait Anxiety Inventory (STAI)*. The Dutch version of this well-known measure of general anxiety has been shown to be reliable and valid (van der Ploeg, Defares, & Spielberger, 1979; Spielberger, Gorsuch, & Lushene, 1970). Both state and trait versions are used in this study.

*Symptom Checklist-90 (SCL-90)*. This questionnaire is a widely used and well-validated self-report inventory for measuring the severity of psychopathology in psychiatric outpatients and has been validated for Dutch populations (Arrindell & Ettema, 1986; Derogatis, Lipman, & Covi, 1973). The SCL-90 has eight subscales: Agoraphobia, Anxiety, Somatic Complaints, Depression, Distrust and Interpersonal Sensitivity, Insufficiency, Hostility, and Sleep Disturbances.

*Fear of Bodily Sensations Questionnaire (FBSQ)*. The FBSQ asks subjects to rate how fearful they are of each of 14 sensations (see Table II). The items are taken from a questionnaire developed by van den Hout, van der Molen, Griez, and Lousberg (1987) and consist of physical sensations often mentioned by panic patients during panic attacks. Answers are given on a 5-point scale ranging from 0 (not at all fearful) to 4 (extremely fearful). The total score, that is, the sum of the item scores, ranges from a possible 0 to a possible 56. Cronbach's alpha for the total FBSQ score was .90 for a sample of 141 patients suffering from various anxiety disorders.

*Bodily Sensations Questionnaire (BSQ)*. The instructions of the BSQ ask subjects to rate the frequency with which 32 bodily sensations have occurred during the past month. The 14 sensations of the FBSQ are among

these 32 items. Ratings are made on a 4-point ordinal scale consisting of the categories "did not occur," "one or more times a month," "one or more times a week," and "daily." The total BSQ score is the sum of the items for which the patient endorsed "daily" or "one or more times a week." This score ranges from a possible 0 to a possible 32.

*Social Anxiety Questionnaire (SAQ)*. This is a Dutch self-report inventory for social anxiety and social skills (van Dam-Baggen, 1987; van Dam-Baggen & Kraaimaat, 1987). The inventory consists of 35 items which have to be rated independently on 5-point scales for discomfort and for frequency of social responses. The inventory has five subscales concerning giving criticisms, expressing opinions, giving compliments, initiating conversations, and making positive self-assertions. In the present study only the total scores on discomfort and frequency are used. Cronbach's alpha for discomfort and frequency was between .91 and .96 for different samples. Test-retest reliability (6 weeks) was .85 and .88 for discomfort and frequency, respectively. The SAQ correlated .76 with another Dutch measure for social anxiety, the Social Anxiety Schedule (SAS; Willems, Tuender-de Haan, & Defares, 1973).

Two-tailed *t*-tests were used to evaluate the significance of the difference between mean scale scores of the two groups. Results were considered significant for  $p < .05$ .

## RESULTS

Table I shows mean scores on STAI, SCL-90, and SAQ for the two groups. Agoraphobic patients scored higher on hostility, interpersonal sensitivity, feelings of insufficiency, depression, and, of course, agoraphobia. The two groups did not differ on somatization, sleep disturbances, and state and trait anxiety.

To examine the *clinical significance* of the differences between the two groups, the observed means were compared to the norms for psychiatric outpatients. The score for agoraphobic patients on the SCL Agoraphobia scale is in the "high range," on a scale that runs from "average," "above average," "high," to "very high." Panic disorder patients score average on this scale. Thus, panic disorder patients did not differ from the average psychiatric outpatient in degree of agoraphobia. On the SCL-90 depression scale, agoraphobic patients scored average, and panic disorder patients below average. For the Insufficiency, Interpersonal Sensitivity, and Hostility scales, the difference between agoraphobic and panic disorder patients was similar, that is, one level lower for panic disorder patients (Arrindell & Etema, 1986).

**Table I.** Scores of Patients with Panic Disorder and Panic Disorder with Agoraphobia on the State Trait Anxiety Inventory (STAI), Symptom Checklist-90 (SCL-90), and Social Anxiety Questionnaire (SAQ)

| Measure                   | Panic disorder |      | Panic disorder with agoraphobia |      | <i>t</i> |
|---------------------------|----------------|------|---------------------------------|------|----------|
|                           | M              | SD   | M                               | SD   |          |
| STAI                      |                |      |                                 |      |          |
| State                     | 49.7           | 12.9 | 53.7                            | 13.2 | .96      |
| Trait                     | 51.2           | 10.2 | 56.3                            | 12.6 | 1.42     |
| SCL-90                    |                |      |                                 |      |          |
| Agoraphobia               | 14.0           | 5.7  | 24.1                            | 8.1  | 4.50**   |
| Anxiety                   | 29.6           | 7.8  | 32.4                            | 8.5  | 1.07     |
| Depression                | 33.9           | 12.1 | 41.9                            | 11.8 | 2.10*    |
| Somatization              | 28.0           | 9.6  | 33.2                            | 9.4  | 1.73     |
| Insufficiency             | 19.0           | 4.3  | 23.4                            | 7.1  | 2.37*    |
| Interpersonal sensitivity | 32.0           | 10.2 | 39.5                            | 12.9 | 2.05*    |
| Hostility                 | 8.6            | 1.6  | 10.7                            | 4.0  | 2.24*    |
| Sleep problem             | 7.2            | 3.7  | 6.1                             | 3.0  | -.98     |
| SAQ                       |                |      |                                 |      |          |
| Total discomfort          | 71.2           | 19.9 | 80.8                            | 21.1 | 1.40     |
| Total frequency           | 100.8          | 24.4 | 98.4                            | 13.0 | -.35     |

\* $p < .05$  (two-tailed).

\*\* $p < .001$  (two-tailed).

Mean scores on total Social Anxiety Questionnaire discomfort and frequency scales were not significantly different in the two groups. Compared to the standard norms for psychiatric patients, the observed means on discomfort are in the below-average range for both groups, while the mean scores on frequency are in the average range for both groups (van Dam-Baggen & Kraaimaat, 1987).

Agoraphobic patients reported significantly greater fear of bodily sensations than panic disorder patients (see Table II.) The sum of the FBSQ item scores was significantly higher for the agoraphobic group. Item scores of 5 of the 14 items of the FBSQ were significantly higher for the agoraphobic patients. Agoraphobics were more afraid of weakening of muscles, feelings of suffocation, faintness, abdominal distress, and paresthesias. However, when controlling for multiple tests by dividing the significance level by the number of tests [ $p = .05/14 = .0035$  (Grove & Andreasen, 1982)], none of the items were significant. The two groups did not differ on frequency of bodily sensations [BSQ;  $t(37) = .75$ ,  $p < .46$ ].

We also examined whether there were any differences related to sex or medication use (yes versus no medication) on any of the variables, but no significant differences were detected.

**Table II.** Scores of Patients with Panic Disorder and Panic Disorder with Agoraphobia on the Fear of Bodily Sensations Questionnaire (FBSQ)

| Item                                 | Panic disorder |      | Panic disorder with agoraphobia |       | <i>t</i> |
|--------------------------------------|----------------|------|---------------------------------|-------|----------|
|                                      | M              | SD   | M                               | SD    |          |
| 1. Muscles weakening                 | .33            | .59  | 1.20                            | 1.24  | 2.79**   |
| 2. Palpitations                      | 2.00           | .84  | 2.50                            | 1.15  | 1.52     |
| 3. Dizziness                         | 1.67           | 1.37 | 2.45                            | 1.28  | 1.82     |
| 4. Tightness around the chest        | 1.89           | 1.41 | 2.65                            | 1.42  | 1.65     |
| 5. Feeling of not getting enough air | 1.39           | 1.46 | 2.55                            | 1.28  | 2.62**   |
| 6. Blurred vision                    | 1.11           | .96  | 1.90                            | 1.62  | 1.85     |
| 7. Nausea                            | .78            | 1.00 | 1.00                            | 1.30  | .59      |
| 8. Irregular heartbeat               | 2.00           | 1.14 | 2.50                            | 1.19  | 1.32     |
| 9. Faintness                         | 1.78           | 1.59 | 3.05                            | 1.32  | 2.69*    |
| 10. Sudden fast or deep breathing    | 1.44           | 1.15 | 2.25                            | 1.48  | 1.86     |
| 11. Trembling                        | 1.56           | 1.29 | 2.05                            | 1.57  | 1.05     |
| 12. Abdominal distress               | 1.06           | 1.16 | 1.95                            | 1.47  | 2.04*    |
| 13. Hot flashes                      | 1.06           | 1.16 | 1.75                            | 1.41  | 1.65     |
| 14. Paresthesias                     | .94            | 1.11 | 1.80                            | 1.28  | 2.19*    |
| Total FBSQ score                     | 19.00          | 9.30 | 30.53                           | 13.03 | 3.08**   |

\* $p < .05$  (two-tailed).\*\* $p < .01$  (two-tailed).

## DISCUSSION

In several respects, our results show agreement with findings of other studies. But there are also some notable differences. Like Thyer *et al.* (1985) we found no differences in state and trait anxiety between the two groups. We also replicated the finding of higher scores on interpersonal sensitivity in agoraphobic compared to panic disorder patients (Aronson & Logue, 1987; Thyer *et al.*, 1985). However, we found that agoraphobic patients scored higher on depression, feelings of insufficiency, and hostility, which the other investigators did not. When interpreting these results, it should be kept in mind that although we found statistically significant differences between panic disorder and agoraphobic patients on these variables, most of these differences were still within one standard deviation of each other.

Agoraphobics' higher scores on SCL-90 depression and insufficiency factors are probably attributable to the (usually) far greater degree of impairment of agoraphobia, compared to panic disorder. As a result of the limitations caused by avoidance behavior, the agoraphobic patient may be

more prone to feel depressed and inadequate in relation to a panic patient who is still able to function relatively normally. The higher hostility score in the agoraphobic group, however, cannot be readily explained in a similar manner.

The higher interpersonal sensitivity of agoraphobic compared to panic disorder patients is a rather consistent finding across studies (Aronson & Logue, 1987; Thyer *et al.*, 1985; present study). Most authors interpret this result as suggestive of embarrassment or humiliation of panic attacks in the presence of others. Some even consider this trait as possibly predictive of the development of agoraphobic avoidance behavior in panic patients (Aronson & Logue, 1987). In line with this, we predicted that agoraphobics would also score higher on our measure of social anxiety and nonassertiveness. However, we found no significant differences between the two groups. This result seems at odds with the findings of Pollard and Cox (1988), who found that agoraphobics had significantly higher social-evaluative anxiety than panic disorder patients. A possible explanation for the difference in findings may be the nature of the instrument we employed. The SAQ measures discomfort and frequency of circumscribed, overt assertive behaviors, such as giving criticisms and expressing one's opinion. The Willoughby Personality Schedule (WPS) employed by Pollard and Cox (1988) measures a construct termed "hypersensitivity to interpersonal situations" (Turner, DiTomasso, & Murray, 1980). Inspection of the items of the WPS reveals that many items concern cognitions related to fear of rejection. In short, the SAQ measures social skills, whereas the WPS and the SCL-90 interpersonal sensitivity scale measure a construct one might term "fear of negative evaluation." The latter scales may be more relevant to the experience of embarrassment and fear of having panic attacks in public, as observed in agoraphobics. However, until longitudinal follow-up studies of panic disorder patients have been conducted, it remains unclear whether the higher interpersonal sensitivity is a cause or an effect of agoraphobia.

Agoraphobic patients displayed significantly greater fear of bodily sensations than panic patients. The difference was significant for the total score and for five specific sensations: weakening of muscles, feeling of suffocation, faintness, abdominal distress, and paresthesias. This finding offers some refinement to cognitive models of panic proposing that high fear of bodily sensations is characteristic of panic patients in general (Clark, 1986; van den Hout *et al.*, 1987). High fear of bodily sensations seems particularly associated with the development of agoraphobia: we suggest that it may be predictive of such development. One could argue that agoraphobics have higher fear of bodily sensations because of their longer-standing and more severe disorder; however, we controlled for duration of disorder and still found that agoraphobics had greater fear of bodily sensations. It might also be argued

that higher fear of bodily sensations in agoraphobics is a simple consequence of having more severe symptoms, but both groups did not differ on a measure of frequency of bodily symptoms. On the basis of the present findings it is impossible to arrive at definite conclusions regarding the role of fear of bodily sensations in the development and maintenance of panic disorder without agoraphobia. Our findings would need to be replicated. Also, nonpanic anxiety disorder patients would need to be included in the study.

Intraindividual factors as investigated in the present study are but one of many factors possibly influencing the development of agoraphobia in panic patients. In an earlier study, we hypothesized that individuals in the social environment of agoraphobic patients would be more likely to provide help and respond to the patients' dependency needs than individuals in the environment of panic disorder patients. We investigated whether panic disorder and agoraphobic patients differed in their perception of the helpfulness of individuals in their social environment, but our hypothesis was not supported by the data (de Ruiter, Rijken, & Garssen, 1987). Given the limitations of this study—we measured only the perception of the helpfulness of the environment from the patient's perspective—the role of environmental influences still deserves further consideration.

It is intriguing to ask why some panic disorder patients develop agoraphobia and others do not. The present study provides some clues as to variables that may play a role in this development. It can be tentatively concluded that fear of bodily sensations and interpersonal sensitivity are associated with the development of agoraphobia.

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