

Comparing Emergency Department and Psychiatric Setting Patients With Panic Disorder

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In a recent study, the authors reported that 25% (108/441) of consecutive emergency department (ED) chest pain patients had panic disorder (PD). As part of this study, the authors sought to answer the question: How do ED patients with PD compare with patients with PD who seek treatment in a psychiatric setting? PD patients from an ED (n = 108) and psychiatric clinic (n = 137) were compared with respect to comorbid Axis I diagnoses, self-report scores, and recent suicidal ideation. The group of psychiatric patients was younger (36.5 vs. 52.3 years) ($P < 0.0001$) and consisted of proportionally more women (63% vs. 39%) ($P = 0.0001$) than the ED patients. The psychiatric patients had significantly higher rates of comorbid agoraphobia (100% vs. 15%) ($P < 0.0001$), social phobia (23% vs. 3%) ($P = 0.0001$), specific phobia (12.3% vs. 4.6%) ($P = 0.03$), and posttraumatic stress disorder (16.9% vs. 5.6%) ($P = 0.006$), compared with the ED patients, and displayed significantly higher scores on all of the self-report panic measures. However, the patients in both groups had similar rates of comorbid generalized anxiety disorder (41.2% vs. 33.3%) ($P = 0.17$), major depression (8.8% vs. 11.1%) ($P = 0.54$), and obsessive-compulsive disorder (1.5% vs. 2.8%) ($P = 0.7$). Both groups also did not differ on the Beck Depression Inventory and in their rate of report of recent suicidal ideation (32% vs. 25%) ($P = 0.23$). Both psychiatric and ED patients with PD appear to be highly distressed patients who require treatment. Early intervention for ED patients may prevent both chronic patient distress and development of the significant phobic avoidance observed in psychiatric patients. (Psychosomatics 1998; 39:512–518)

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As part of the "Montreal Heart Panic Project," we recently reported that 25% of a large sample of patients ($N = 441$) presenting to an emergency department (ED) for chest pain had panic disorder (PD).¹ In this study, the patients with PD reported significantly more psychological distress and higher rates of suicidal ideation than the ED patients without this specific and disabling anxiety disorder. Yet 98% of the patients with PD went undiagnosed by physicians. Because psychopharmacologic and cognitive-behavioral treatments are effective for roughly 80% of psychiatric patients with PD,²

we and others^{3,4} have emphasized the importance of improving physician recognition of this disorder and encouraged that these treatments, developed in mental health settings, be provided.

However, research on the actual effectiveness of psychiatric treatments for patients seen in the medical setting with this specific disorder is scarce. Treating medical patients with psychiatric disorders assumes that conventional psychiatric interventions are both required and effective for medical patients. This notion is partially based on the assumption that medical patients with psychiatric diagnoses have psychological distress profiles akin to psychiatric patients with the same primary diagnoses. Yet it is still unclear how patients consulting in medical settings and who are later found to have PD compare with psychiatric setting patients with this disorder. A comparison of these two groups of patients is important, as most of our knowledge on PD comes from the study of psychiatric setting patients. Study undertaking is problematic because PD is particularly common in various medical settings (primary care, cardiology, neurology, gastroenterology, EDs), where patients repeatedly consult for their undiagnosed panic symptoms that mimic physical conditions. Furthermore, patients remain in the medical system for up to a decade before obtaining appropriate treatment, mainly in mental health settings.⁵

The purpose of this study was to answer the question: How do ED medical patients found to have PD compare with patients with PD seeking treatment in a psychiatric clinic? We are unaware of any study that directly compared psychiatric and medical setting patients with PD that used well-established self-report instruments and structured interviews. A comparison of both psychiatric and medical patients with PD would highlight the differences/similarities between these two groups of patients. This study would clarify the need for treatment and would lead to the development of hypotheses on the type and extent of intervention required for medical patients with this diagnosis.

At the time of writing the protocol for the

Montreal Heart Panic Project, we hypothesized that ED and psychiatric patients would not differ in terms of demographic and psychological distress profiles.

METHODS

Patient Selection

ED Group. The ED group consisted of 108 patients who met DSM-III-R criteria for PD (with or without agoraphobia) among a sample of 441 consecutive chest pain patients presenting to an ED of a major teaching hospital specializing in cardiac care located in Montreal, Canada. Additional methodological details are provided elsewhere.¹

Psychiatric Setting Group. This group was initially comprised of 153 patients seeking treatment for PD at a psychiatric outpatient clinic of a major teaching hospital located in Montreal, Canada. Detailed diagnostic and self-report data were obtained for 137 patients who consented to participate in a treatment study. No differences existed between the participating and non-participating patients in terms of age, gender, and available baseline self-report information.

The comparison of both patient groups was planned before the onset of the studies as part of the Montreal Heart Panic Project.

Measures

Psychiatric Diagnoses (DSM-III-R). Psychiatric diagnoses in both the ED and psychiatric patients were made with the Anxiety Disorders Interview Schedule-Revised (ADIS-R).⁶ This structured interview protocol is designed to diagnose current Axis I anxiety and mood disorders and displays good interrater reliability for PD diagnosis in psychiatric settings.⁷ The test also includes screening questions for alcohol and substance abuse disorders and is one of the recommended structured interview protocols for panic research.⁸ Average interrater reliability ratings for PD in the ED group was high ($\kappa = 0.80$) based on the assessment of 100

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randomly selected taped interviews (23% of the total 441 interviews). For the psychiatric group, final Axis I diagnoses were reached by consensus between the ADIS-R (conducted by graduate students in clinical psychology) and psychiatrists' DSM-III-R diagnoses.

Self-Report Scales. Both psychiatric and ED patients completed these self-report questionnaires: depression: Beck Depression Inventory;⁹ anxiety: State-Trait Anxiety Inventory;¹⁰ and panic symptomatology: Mobility Inventory for Agoraphobia,¹¹ Agoraphobia Cognitions Questionnaire,¹² and the Body Sensations Questionnaire.¹²

The depression and anxiety self-report questionnaires are widely used in research and clinical practice in both medical and psychiatric populations. The panic symptomatology measures were recently recommended by a group of leading panic researchers as essential instruments to use in studies on PD.⁸ To our knowledge, the Montreal Heart Panic Project is among the first panic projects conducted in a medical setting to use these panic instruments that allow for comparisons with psychiatric populations.

ANALYSES

Chi-square analysis (for categorical data) and (analyses of variance) ANOVAs (for continuous data) were used to test demographic and psychological differences between the ED and psychiatric setting patients. Level of significance was set at $P < 0.05$. We adjusted for the possible confounding factors of age and gender in our comparisons.

RESULTS

Demographic Information

The sample of psychiatric patients with PD were significantly younger (36.5 years, standard deviation [SD] = 8.80), compared with the ED patients, 52.3 years, ($F = 154.9$, $df = 1$, $P = 0.0001$) and consisted of a greater proportion of women than the ED patients, 63% vs.

39% women, respectively ($\chi^2 = 14.6$, $df = 1$, $P = 0.0001$).

Structured Interview Diagnoses

A significantly greater proportion of the psychiatric patients had comorbid agoraphobia (100% vs. 15% [$\chi^2 = 186.9$, $df = 1$, $P < 0.0001$]), social phobia (23% vs. 3% [$\chi^2 = 20.1$, $df = 1$, $P = 0.0001$]), specific phobia (12.3% vs. 4.6% [$\chi^2 = 4.5$, $df = 1$, $P = 0.03$]), and posttraumatic stress disorder (16.9% vs. 5.6% [$\chi^2 = 7.4$, $df = 1$, $P = 0.006$]) than the ED patients. However, the patients in both groups did not differ in terms of comorbid generalized anxiety disorder (41.2% vs. 33.3% [$\chi^2 = 1.8$, $df = 1$, $P = 0.17$]), major depression (8.8% vs. 11.1% [$\chi^2 = 0.4$, $df = 1$, $P = 0.54$]), and obsessive-compulsive disorder (1.5% vs. 2.8% [$P = 0.7$, Fisher's Exact Test]).

Psychological Distress

Mean scores on the self-report scales are displayed in Table 1.

Depression. The psychiatric and ED patients' depression scores were not statistically different. Scores were within the moderate-severity range levels on the Beck Depression Inventory.⁹

General Anxiety. The ED patients reported significantly higher levels of state-trait anxiety than the psychiatric patients. Scores for both groups of patients on the State-Trait Anxiety Inventory were over one SD above the norm (working adults), suggesting abnormal levels of anxiety.¹⁰

Panic Symptomatology. The psychiatric patients displayed significantly higher scores on all of the panic measures (Mobility Inventory for Agoraphobia, Agoraphobia Cognitions Questionnaire, and the Body Sensations Questionnaire). Results were unchanged by adjustments for age and gender.

Suicidal Ideation. Both groups did not differ in their rate of report of recent suicidal ideations

(Question 9 of the Beck Depression Inventory). About 32% (43/135) of the psychiatric patients and 25% (25/101) of the ED patients had thought of killing themselves in the week before questionnaire completion ($\chi^2 = 1.4$, $df = 1$, $P = 0.23$).

DISCUSSION

Contrary to our initial expectations, the ED and psychiatric setting patients with PD differed on several demographic and psychological variables. The sample of psychiatric setting patients were younger and consisted of proportionally more women than the ED patients. The psychiatric patients also had proportionally more comorbid phobic disorders, primarily agoraphobia, and scored higher than the ED patients on all of the panic measures. However, both groups had similar proportions of comorbid generalized anxiety disorder and major depression. The patients also did not differ on their State-Trait Anxiety and Beck Depression Inventory scores, as well as in their report of recent suicidal ideation, supporting, at least partially, our initial hypotheses.

Since, to our knowledge, this is the first study to compare a large sample of medical and psychiatric setting patients with PD that used well-established psychological scales and a structured interview, there is little basis on which we can compare our findings. However, our results are consistent with one preliminary report that showed that cardiology patients with non-cardiac chest pain and panic symptoms ($n = 22$) displayed significantly less panic symptom severity than the PD patients seen by psychotherapists ($n = 26$) on a nonvalidated questionnaire.¹³

One interpretation of our finding of lower levels of self-reported psychological distress on the panic symptomatology scales is that the ED patients are possibly in the initial stages of their disease process. Consequently, the more disabling cognitive (catastrophic interpretation of bodily sensations) and behavioral (agoraphobic avoidance) complications characteristic of psychiatric patients may not yet have ensued. Although we did not determine lifetime psychiatric diagnoses for the ED patients, 90% of these patients with PD reported they were never told they had either PD or agoraphobia before their

TABLE 1. Mean scores of emergency department (ED) and psychiatric setting patients with panic disorder on self-report measures of depression, general anxiety, and panic symptomatology

Rating Scale	Psychiatric Group ($n = 137$)	ED Group ($n = 108$)	<i>F</i>	<i>P</i>
Depression	16.4 ^a	15.5 ^a	0.32 ^a	0.573 ^a
Beck Depression Inventory, mean \pm SD	16.9 \pm 8.8	14.9 \pm 11.5	2.57	0.111
State Anxiety	45.2 ^a	50.9 ^a	7.56 ^a	0.006 ^{a,b}
Mean \pm SD	46.1 \pm 12.5	49.9 \pm 12.9	5.70	0.018 ^b
Trait Anxiety	48.2 ^a	51.5 ^a	3.09 ^a	0.08 ^a
Mean \pm SD	52.8 \pm 12.6	46.5 \pm 12.7	19.39	0.0001 ^b
Panic Symptomatology				
Mobility Inventory (unaccompanied)	3.3 ^a	1.6 ^a	130.4 ^a	0.0001 ^{a,b}
Mean \pm SD	3.4 \pm 0.89	1.6 \pm 0.98	244.9	0.0001 ^b
Mobility Inventory (accompanied)	2.6 ^a	1.43 ^a	75.2 ^a	0.0001 ^{a,b}
Mean \pm SD	2.5 \pm 0.74	1.44 \pm 0.84	122.8	0.0001 ^b
Body Sensations Questionnaire	3.19 ^a	2.19 ^a	53.9 ^a	0.0001 ^{a,b}
Mean \pm SD	3.19 \pm 0.77	2.17 \pm 0.86	98.2	0.0001 ^b
Agoraphobia Cognitions Questionnaire	2.63 ^a	1.76 ^a	123.4 ^a	0.0001 ^{a,b}
Mean \pm SD	2.67 \pm 0.58	1.72 \pm 0.76	62.7	0.0001 ^b

^aAdjusted for age and gender.

^bSignificant difference between psychiatric and ED patients ($P < 0.050$).

ED visit. In contrast, the psychiatric patients had their disorder for a mean of 11.7 years ($SD = 9.9$) at the time they sought psychiatric treatment, a finding consistent with those in the literature.⁵ This may partially explain why all of the psychiatric patients had PD complicated by agoraphobia, whereas only 15% of the PD medical patients also had this comorbid disorder that develops in about 50% of PD patients, often within the first year of their initial panic attacks.¹⁴

An additional interpretation of these findings is that patients consulting for physical symptoms eventually found to have PD may have a different subtype of the disorder that leads to lower scores on the panic measures.¹¹ In our sample of ED patients with PD, 44% (48/108) had nonfearful PD. The patients with nonfearful PD meet DSM-III-R (and DSM-IV) criteria for PD, yet have attacks that involve intense periods of discomfort without fear (including fear of dying, going crazy, or losing control). Nonfearful PD occurs in at least 30% of PD patients with noncardiac chest pain and may be a particular characteristic of PD in medical patients that requires further investigation.^{13,15}

Despite the fact that the ED patients had less severe panic symptomatology, their overall psychological distress profile suggests these patients require treatment. The ED patients had high rates of comorbid generalized anxiety disorder, and their scores on the State-Trait Anxiety Inventory and Beck Depression Inventory suggest at least moderate distress. Moreover, the finding that 25% of the ED patients with PD had recent suicidal thoughts is possibly the most potent argument for treatment. This finding may especially be true since PD appears to be an independent risk factor for suicidal ideation in these ED patients, as we have previously reported.¹⁶ Finally, a 3- to 4-year follow-up of chest pain patients with normal coronary arteries showed that those patients with PD report more continuing chest pain, worsening of health, greater reduction in exertional capacity, poorer social adjustment, more anxiety symptoms, and more psychological distress than those without PD.¹⁷ This study suggests that without treat-

ment, PD patients seeking care in the medical setting may not improve with the passage of time and that their condition may even worsen. A follow-up study of the ED patients in the Montreal Panic Project is currently under way to replicate Beitman et al.'s¹⁷ findings.

The age and gender differences between the ED and psychiatric setting patients also requires elaboration. The fact that the ED patients were older and consisted of a greater proportion of men than the psychiatric setting patients may, at first glance, appear to be a surprising finding. In fact, it is generally believed that PD begins in the early 20s and is more common in women. However, studies have consistently shown that PD patients who seek treatment for unexplained chest pain, such as those in our ED study, are older, with mean ages ranging from 45 to 54 years.^{3,4,18,19} Furthermore, in most of these studies, the proportion of men and women with PD was not significantly different. Why PD chest pain patients are older is unclear. As previously mentioned, we did not examine lifetime diagnoses of PD in our ED sample, and it is impossible to ascertain the age at onset of PD here. In another study of chest pain patients with PD, Beitman et al.²⁰ did obtain lifetime diagnoses and found that the panic syndrome, contrary to reports emanating from psychiatric samples, had a late onset for several patients. Beitman et al. proposed that the older mean age of PD may also reflect the normal distribution of the disorder, with older male patients more likely to consider heart disease as a cause. Nevertheless, the concept of late-onset PD uncovered in medical settings requires further investigation and clinical attention. Physicians may be more reluctant to consider a diagnosis of PD in an older patient with relatively new symptoms if it is generally believed that PD most often begins in early adulthood.

Several limitations and particulars of this study should be considered when interpreting the results. First, the sample of psychiatric patients with PD was not consecutive, whereas the ED sample was. Perhaps a sample of consecutive patients referred to the psychiatric clinic would have been more appropriate in terms of

external validity than our sample of patients who consented to participate in the standard treatment program for PD and PD anxiety offered at the psychiatric hospital. However, the former method would have required conducting structured interviews (ADIS-R) and self-report assessments for the over 1,000 patients who are referred annually to the outpatient clinic of Montreal's largest psychiatric hospital. Second, PD patients in the ED sample had presented a chief complaint of chest pain. Although chest pain is a common symptom of PD, PD patients also seek treatment for other symptoms such as palpitations, dizziness, difficulty breathing, etc. These patients were not evaluated in our study and thus limits the generalization to all PD patients who seek care in an ED. Conducting structured interviews on consecutive patients presenting with any potential panic symptoms, although interesting, would have been a task of considerable complexity and cost.

Finally, although our study results support the importance of attempting to treat medical patients with PD, several questions remain at least partially unanswered. First, will patients consulting for physical symptoms found to be of psychiatric origin consent to psychiatric treatment? Second, should the patients be treated in the medical setting or referred for treatment in the mental health setting? Third, what type and extent of treatment is required for these patients? Although most of the evidence comes from the study of depression in primary care, the findings supports the notion that most medical patients accept mental health interventions and that treatments provided in the primary care setting are effective.²¹ Moreover, the relatively low levels of agoraphobic avoidance in the ED patients of this study suggests that extensive exposure therapy, as it is usually provided in psychiatric settings, may not be required for most patients, thus simplifying treatment. One study by Swinson *et al.*²² even suggests that a 1-hour session in which ED patients with panic attacks ($n = 17$) received exposure instruction, without any additional therapist contact, was significantly more effective than reassurance in another patient group ($n = 16$) in lessening depression, agoraphobic

avoidance, and panic attack frequency at 6-month follow-up. The exposure instruction appeared to be of value, even though the patients had relatively low levels of agoraphobic avoidance. This study, however, focused on patients with panic attacks, not necessarily PD. Future research should test this simple, inexpensive treatment with patients with the disorder. Alternatively, future investigations could compare standard psychiatric setting cognitive-behavioral or pharmacological treatments with briefer interventions provided in the medical setting that include information on the disorder, cognitive restructuring, exposure to bodily sensations, and breathing retraining. Particular attention should be paid to patients with nonfearful PD in these investigations.

CONCLUSION

There are several differences between the psychiatric and ED patients with PD. Although the psychiatric patients appear more distressed, according to the number of reported panic symptoms, the ED patients have psychological distress profiles that warrant intervention. Future research should test whether brief and early intervention prevents PD from taking a chronic course.

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