

Medical utilization across the anxiety disorders

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Abstract

Individuals with panic disorder often seek medical care for their symptoms prior to receiving effective treatment. However, little is known about how often, and in what settings, patients with other anxiety disorders present for medical treatment. In the present study, utilization of general and specialty medical services was coded via electronic chart review for 171 consecutive outpatients referred to an anxiety disorders clinic. Results indicated that panic disorder patients accrued the most medical visits overall, as well as the most frequent visits to cardiology, family medicine, and emergency medicine. Few differences in medical utilization were evident among patients with generalized anxiety disorder, obsessive-compulsive disorder, social phobia, and specific phobias. Patients with anxiety disorders appear to be frequent utilizers of medical services prior to receiving effective treatment. Our findings highlight the need for improved recognition and treatment of anxiety disorders, particularly panic disorder, in a number of medical settings.

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The economic burden of anxiety disorders in the United States is an estimated 42.3 billion dollars each year (Greenberg, Sitisky, & Kessler, 1999). This figure includes costs due to direct medical services, of which individuals with anxiety disorders are disproportionately high utilizers (Barsky, Delamater, & Orav, 1999; Kennedy & Schwab, 1997; Rees, Richards, & Smith, 1998; Zane, McAfee, Sherburne, Billeter, & Barsky, 2003). Lifetime medical costs for an individual diagnosed with an anxiety disorder average \$6,475, with even greater costs incurred among those with disorders such as panic, generalized anxiety, and post-

traumatic stress (Marciniak et al., 2005). Inflated utilization rates among such individuals are likely influenced by healthcare providers' difficulties in detecting the presence of an anxiety disorder (Fleet et al., 1996) and the distressing somatic symptoms common in anxiety (e.g., chest pain, shortness of breath) which mimic a variety of medical conditions.

The majority of research concerning medical utilization among anxiety disorder patients has focused on panic (see Katon, 1996, for a review). Panic disorder is characterized by recurrent and unexpected panic attacks in which individuals often misinterpret arousal-related body sensations (e.g., chest tightness, dizziness) as a sign of a medical catastrophe such as a heart attack (Clark, 1986). Not surprisingly, many individuals suffering from unexpected panic attacks first present to medical settings instead of mental health settings. To

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illustrate, Katerndahl and Realini (1995) conducted a medical utilization survey of 97 patients meeting DSM-III-R criteria for panic attacks. Of the participants who received care for their panic attacks, 49 percent sought help from a medical setting and only 26 percent from a mental health setting. This disparate pattern of medical utilization was even more evident among those seeking panic treatment for the first time, 85 percent of whom sought help in medical settings.

Medical utilization rates among individuals with panic disorder appear disproportionately high (Barsky et al., 1999; Katerndahl & Realini, 1997; Simpson, Kazmierczak, Power, & Sharp, 1994; Zane, McAfee, Sherburne, Billeter, & Barsky, 2003). In a 10 year retrospective investigation of case notes, Simpson et al. (1994) compared medical and pharmacological utilization rates between 100 consecutive panic patients and matched controls. In all 10 years of retrospective comparison, panic patients consulted their general practitioner significantly more often than matched controls. Similarly, Barsky et al. (1999) reported more frequent physician visits, emergency room visits, and mental health visits among patients with panic disorder as compared to general medical outpatients. In addition to the financial burden of these services, panic patients reported being significantly more dissatisfied with their medical treatment, and physicians rated these patients significantly more difficult to care for, as compared to non-panic controls. Interestingly, the panic group evidenced significantly fewer major and moderate medical problems, suggesting that the elevated healthcare utilization among these individuals was influenced more by panic-related symptoms than medical comorbidity.

Research indicates that the presence of panic attacks, irrespective of a panic disorder diagnosis, is predictive of increased healthcare utilization. For example, Boyd (1986) found that patients with panic disorder were more likely to seek out mental health and general medical services as compared to patients with a variety of other psychiatric conditions (e.g., major depressive episode, obsessive-compulsive disorder [OCD]). Moreover, among individuals with non-panic disorder diagnoses, those who experienced panic attacks were more likely than those who did not to seek treatment in both the medical and mental health care sectors. Given that panic attacks commonly occur in many anxiety disorders (Barlow et al., 1985), it is possible that individuals with anxiety disorders other than panic disorder are also high utilizers of medical services.

Several investigations indicate that healthcare utilization rates are high among patients with a variety of anxiety disorders (Kennedy & Schwab, 1997;

Swinson, Cox, & Woscyna, 1992). Kennedy and Schwab (1997) collected retrospective accounts of medical utilization among individuals with OCD, panic disorder, and generalized anxiety disorder (GAD) in addition to a control group of college students. Panic patients visited family medicine facilities significantly more often than did the other anxiety groups and controls. There were also differences in the amount of medical specialist utilization among the four groups. For example, GAD patients reported significantly more gastroenterological visits than control participants, while panic patients reported significantly more neurological visits than control participants. Utilization rates among individuals with other anxiety disorders (social phobia, specific phobias, PTSD) were not assessed in this study. Rees et al. (1998) compared medical utilization rates and costs incurred among patients with panic disorder, social phobia, and non-anxious control participants. Individuals with panic disorder reported utilizing significantly more primary care and emergency services than both the patients with social phobia and non-anxious control group. In addition, the mean cost of specialist utilization was greater for the panic disorder group than the social phobia and non-anxious control groups. The social phobia group evidenced higher specialist utilization than the control group only concerning psychological or psychiatric services (40 percent vs. 2.3 percent, respectively). As with Kennedy and Schwab (1997) and Rees et al. (1998) assessed utilization via retrospective patient self-reports and investigated a relatively small number of anxiety disorders.

Understanding where and at what rate individuals with anxiety disorders seek care may help to improve the detection, triaging, and treatment of these disorders in patients who present in medical settings. Such improvements are important given that anxiety disorders are often undetected (Fleet et al., 1996) and poorly managed (Roy-Byrne et al., 2002) in such settings. The substantial financial burden created by excessive medical utilization may be lessened by the provision of timely and empirically supported treatment (Barlow, 2002). In addition, clinicians who treat individuals with anxiety disorders characterized by unnecessary medical utilization could use such information to reduce these unnecessary medical visits.

At present, two important methodological weaknesses limit conclusions that can be drawn from the existing literature concerning medical utilization across the anxiety disorders: (a) few studies have examined differences in utilization among a wide variety of anxiety disorders, and (b) most studies assess utilization via

retrospective patient self-reports, which are less reliable than objective measures. The present study was conducted to address these limitations by providing an objective account of medical utilization among patients with various anxiety disorders. Specifically, using electronic medical records obtained from a clinically representative sample of anxiety disorder patients, we examined the number of physician visits during the year prior to seeking treatment in an anxiety disorder specialty clinic. On the basis of previous research, we hypothesized that patients with panic disorder would evidence the highest rates of overall medical utilization, as well as utilization of emergency and primary care services.

1. Method

1.1. Participants

Data were collected from the electronic medical charts of 171 consecutive patients evaluated in an outpatient anxiety disorders clinic. The sample included 41 patients with a principal diagnosis of panic disorder, 36 with GAD, 32 with specific phobia, 31 with OCD, and 31 with social phobia. Sixty-one patients (35.7 percent) had at least one additional Axis I diagnosis, including 29 with an anxiety disorder, 25 with major depressive disorder, and 34 with a different Axis I diagnosis. The mean age was 37.7 years ($SD = 13.9$) and the sample was predominantly female (61.4 percent) and Caucasian (93.3 percent). Just over half of these patients (52.6 percent) were married.

1.2. Diagnostic procedure

Patients were evaluated in a multidisciplinary anxiety disorders clinic within a large medical center.

Each patient participated in an evaluation consisting of a 1.5-h semi-structured diagnostic interview with a trained Masters or Doctoral level psychologist who administered the anxiety and mood disorders sections of the Mini International Neuropsychiatric Interview (MINI; Sheehan et al., 1998). These sections of the MINI are comparable to the SCID in terms of their adequate reliability and validity (Sheehan et al., 1998). The assessment also included a 1-h interview with a psychiatrist who examined the patient's medical and pharmacological history. All assessors met together with the clinic director (the third author) to discuss diagnostic impressions, case conceptualization, and to formulate a treatment plan for each patient. For patients with more than one diagnosis, the principal diagnosis was determined based on considerations of acute distress, impairment in functioning, and urgency of treatment. Although inter-rater reliability for the principal diagnosis was not formally examined, patients were only included in the present study if there was 100 percent inter-rater agreement on the patient's principal diagnosis.

1.3. Medical utilization coding procedure

An electronic chart review was conducted for the 12 months prior to the date of each patient's evaluation in the anxiety disorders clinic. We coded the frequency of outpatient clinician visits and medical services in 11 settings (see Table 1 for a complete list). Medical utilization related to surgeries, inpatient stays, and non-clinician visits (e.g., for research or educational purposes) was not coded. In addition, clinician visits in psychiatry and psychology were not coded as the present study was concerned with medical utilization apart from mental health services.

Table 1
Twelve months utilization of general and specialty medical services

Medical setting	Panic disorder, $n = 41$ (percent)	OCD, $n = 31$ (percent)	Social phobia, $n = 31$ (percent)	GAD, $n = 36$ (percent)	Specific phobia, $n = 31$ (percent)	χ^2 (4)
Cardiology	46.3	16.1	16.1	27.8	18.8	12.78*
Dermatology	34.1	19.4	22.6	27.8	31.3	2.54
Endocrinology	4.9	9.7	6.5	5.6	12.5	1.99
Emergency medicine	43.9	16.1	22.6	27.8	25.0	7.89†
ENT	17.1	3.2	6.5	8.3	6.3	5.19
Family medicine	46.3	19.4	16.1	25.0	31.3	10.31*
Gastroenterology	7.3	6.5	6.5	8.3	3.1	0.85
Internal medicine	43.9	38.7	25.8	44.4	43.8	3.37
Neurology	12.2	0.0	3.2	8.3	9.4	5.08
Preventive and occupational medicine	24.4	9.7	29.0	16.7	15.6	4.85
Urgent care	48.8	32.3	35.5	47.2	31.3	4.16

Note. † $p < .10$; * $p < .05$.

2. Results

2.1. Medical utilization and demographic variables

The average anxiety patient accrued 6.2 outpatient clinician visits ($SD = 6.3$) during the 12 months prior to evaluation in our clinic. The total number of medical visits was unrelated to gender ($t [169] = 1.53, p = .13$), age ($r = .02, p = .75$), or marital status (married vs. never married, divorced, or widowed; $t [158] = 1.22, p = .22$). Demographic variables were significantly correlated with utilization of specific medical services in only five of 33 analyses. Specifically, age was positively correlated with internal medicine visits ($r = .20, p = .0005$) and negatively correlated with urgent care visits ($r = -.23, p = .003$). Women evidenced significantly more visits than men to preventative medicine, $t (169) = 3.75, p = .0002$, and urgent care, $t (169) = 2.84, p = .003$. Lastly, unmarried patients made more emergency room visits, $t (158) = 2.00, p = .05$, than married patients. The five anxiety disorder patient groups did not differ in age, gender, or marital status (all $ps > .17$). Accordingly, we elected not to include demographic variables as covariates in subsequent analyses.

2.2. Overall medical utilization across the anxiety disorders

Fig. 1 depicts the mean number of medical visits for patients with panic disorder, specific phobia, GAD, social phobia, and OCD. A one-way ANOVA indicated a

statistically significant difference in medical utilization among the anxiety patient groups, $F (4, 166) = 4.77, p = .001$. Fisher's LSD post hoc tests indicated that, as hypothesized, patients with panic disorder had higher rates of utilization than those with OCD ($p = .0002$), social phobia ($p = .001$), GAD ($p = .04$), and marginally higher rates than those with specific phobia ($p = .08$). Patients with specific phobias evidenced the second highest rates of utilization and had significantly more visits than OCD patients ($p = .04$). No other post hoc between-group differences were found.

2.3. Medical utilization in general and specialty settings across the anxiety disorders

Next, we examined the percentage of individuals with at least one visit to various general and specialist settings. Overall, visits to general medical settings were more common than visits to specialty settings. The most frequently visited medical settings were internal medicine and urgent care (both 39.8 percent), family medicine (28.7 percent), and emergency medicine (28.1 percent). Among medical specialty settings, anxiety patients most often utilized dermatology (27.5 percent) and cardiology (26.3 percent). As shown in Table 1, chi-square tests revealed statistically significant differences in utilization among the anxiety patient groups in three settings: emergency medicine, family medicine, and cardiology testing. In each of these settings, patients with panic disorder demonstrated the highest utilization rates. Post-hoc examination of standardized residuals indicated that panic

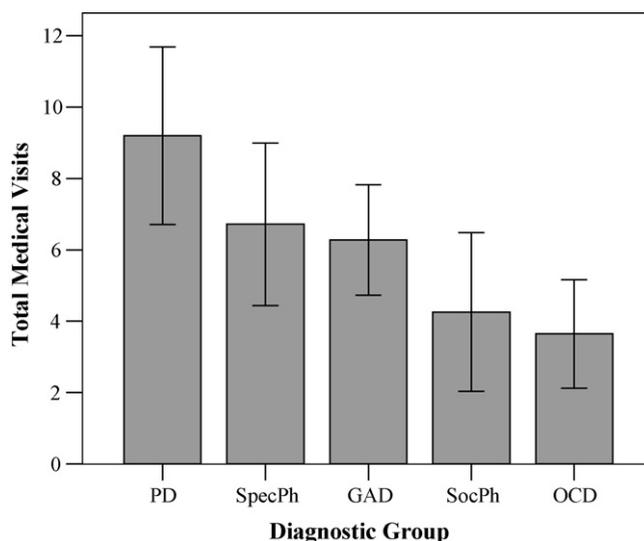


Fig. 1. Total 12 months medical visits across the anxiety disorders. Note. Error bars represent 95 percent confidence intervals. PD: panic disorder; SpecPh: specific phobia; GAD: generalized anxiety disorder; SocPh: social phobia; OCD: obsessive-compulsive disorder.

disorder patients had (a) significantly ($p < .05$) more cardiology visits than the other groups, (b) significantly ($p < .05$) more emergency room visits than patients with OCD, social phobia, and specific phobias, and (c) significantly ($p < .05$) more family medicine visits than patients with OCD, social phobia, and GAD. No statistically significant differences between the non-panic anxiety patient groups were evident in utilization rates in any medical setting.

2.4. Effects of comorbidity on medical utilization

To examine the association between diagnostic comorbidity and medical utilization, we compared total medical visits, as well as the frequency of visits to general and specialty medical settings, between anxiety patients with ($n = 61$) and without ($n = 110$) an additional Axis I diagnosis. Results of 12 Chi-square analyses yielded only a single statistically significant comparison: urgent care visits were more common among patients with a comorbid disorder than those with only a single anxiety disorder (52.5 percent vs. 32.7 percent), $\chi^2(1) = 6.38, p = .009$.

3. Discussion

On average, anxiety patients visited general and specialty medical providers more than six times during the year prior to their evaluation in an outpatient anxiety disorders clinic. This rate of medical utilization did not include inpatient or surgical treatments, mental health visits, or medication prescriptions. These results are consistent with previous research demonstrating inflated utilization rates among individuals with anxiety disorders (e.g., Kennedy & Schwab, 1997) and highlight the financial burden of anxiety disorders to both patients and the healthcare system.

Because we did not include a control group of patients without anxiety disorders, it was not possible to compare the degree of medical utilization from our sample to a normative population. Fortunately, several previous studies have shed light on this issue. Marciniak, Lage, Landbloom, Dunayevich, and Bowman (2004) found that 12-month outpatient medical utilization rates among matched controls were approximately 50 percent lower than those of anxiety disorder patients. Similarly, Barsky et al. (1999) reported that panic disorder patients accrued more than twice as many 12-month physician visits ($M = 10.6$) as general medical outpatients ($M = 4.4$). Assuming this general pattern applies to participants in the present study, the

impact of an anxiety disorder on medical utilization was likely substantial.

In accord with our hypotheses, individuals with panic disorder evidenced the highest rates of medical utilization. The presence of panic disorder was associated with higher overall medical utilization than was GAD, OCD, social phobia, and specific phobias. In particular, panic patients had significantly more visits to cardiology, emergency medicine, and family medicine. It is likely that the distressing and often spontaneously occurring somatic symptoms specific to the experience of panic prompt patients to seek both emergency and general medical services. The frequent failure of physicians to identify panic disorder in emergency medicine (98 percent; Fleet et al., 1996) and primary care settings (61 percent; Spitzer et al., 1994) ensures that many patients receive extensive and often unnecessary medical services prior to being accurately diagnosed. To illustrate, Sheehan (1982) reported that most panic disorder patients see an average of 10 physicians before it is recognized that they have panic disorder as opposed to a medical condition.

Medical utilization rates, both overall and in general and specialty settings, evidenced few significant differences among patients with OCD, GAD, social phobia, and specific phobias. In fact, only one comparison yielded statistical significance: specific phobias were associated with more overall medical visits than OCD. Overall, these findings are consistent with those of Kennedy and Schwab (1997) in suggesting that few differences in medical utilization exist among anxiety patients without panic disorder. These findings should not be taken as an indication that excessive medical utilization is not a concern for individuals with non-panic anxiety disorders. Instead, given the lack of meaningful differences in medical utilization among anxiety patients without panic disorder our findings provide little justification for intervention efforts targeting specific non-panic anxiety disorders in any particular medical setting (e.g., OCD in dermatology).

Given that all patients in the present study were seeking evaluation and acute treatment of their anxiety problems, our findings attest to the high frequency of medical utilization among individuals whose anxiety symptoms are either untreated or fail to respond to treatment. Accordingly, reducing unnecessary medical visits and their associated financial and practical burdens on the healthcare system should be an important priority for treatment providers. Past research has focused on improving the recognition of anxiety disorders through the use of screening measures such as the PRIME-MD (Spitzer, Kroenke, & Williams, 1999).

Unfortunately, improved recognition of anxiety disorders often fails to lead to improved treatment in medical settings (Fifer et al., 1994; Mathias et al., 1994), highlighting the need to integrate screening, diagnostic, and intervention procedures. Empirically supported interventions for anxiety disorders, such as cognitive-behavioral therapy and serotonergic medications, have the potential to reduce medical utilization and its attendant costs (i.e., medical cost offset). To illustrate, a recent series of studies has demonstrated that a brief combined CBT-pharmacotherapy intervention for panic disorder in primary care produced substantial symptom improvement and cost savings relative to a treatment as usual regardless of patients' degree of medical illness comorbidity (Katon et al., 2006; Roy-Byrne et al., 2005).

A number of limitations of the present study should be noted. First, because our participants were recruited from an outpatient anxiety clinic they likely had more severe anxiety symptoms than non-treatment-seeking patients in the community. As such, our results may overestimate the effects of clinical anxiety symptoms on medical utilization when applied to the population of all individuals with an anxiety disorder. Second, we were unable to determine whether medical visits were related to anxiety symptoms. It is possible that the elevated rate of medical utilization among patients with panic disorder was influenced by a higher degree of bona fide medical problems in this group (Katon et al., 1986; Rogers et al., 1994). Third, the frequency of medical visits at other institutions during the study period was not assessed. The present findings likely underreport the degree of medical utilization for those patients who did not receive all their medical services at the study site. Fourth, we were not able to include a group of patients with PTSD in the present study because very few patients with this diagnosis were referred to the anxiety clinic during the study period.

In summary, the present study indicates that prior to receiving effective treatment, patients with anxiety disorders are frequent utilizers of medical services. This pattern is particularly pronounced among patients with panic disorder, who visited family medicine, cardiology, and the emergency room with greater frequency than those with other anxiety disorders. Our findings point to the important need for improved recognition and treatment of anxiety disorders in medical settings. In addition, given the financial burden created by excessive medical utilization, mental health providers should make decreasing unnecessary physician visits a treatment priority. Future research should examine the efficacy of existing anxiety disorder treatments in

producing medical cost offset, as well as identify effective strategies to screen, diagnose, and treat anxiety disorders in medical settings, particularly with respect to panic disorder in emergency medicine and primary care settings.

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