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The Social Costs of Anxiety Disorders

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Background. The social costs of anxiety disorders, which afflict a substantial proportion of the general population in the United States, are considered.
Method. Data from the National Institute of Mental Health (NIMH) Epidemiological Catchment Area Program were analysed.
Results. Over 6% of men and 13% of women in the sample of 18 571 had suffered from a DSM-III anxiety disorder in the past six months. Nearly 30% of those with panic disorder had used the general medical system for emotional, alcohol or drug-related problems in the six months prior to the interview. Those with anxiety disorders were also more likely to seek help from emergency rooms and from the specialised mental health system. Men with panic disorder, phobias or obsessive–compulsive disorder in the previous six months are more likely to be chronically unemployed and to receive disability or welfare.
Discussion. Once correctly diagnosed there are safe and effective psychopharmacologic and behavioural treatments for the anxiety disorders. Nevertheless the burden of anxiety disorders extends beyond the direct costs of treatment to the indirect costs of impaired social functioning.

It is estimated that nearly 15% of the general population in the US has suffered from at least one DSM-III anxiety disorder at some point in their lives (Regier *et al*, 1988). The lifetime rate of panic disorder is about 1.5% (Eaton *et al*, 1991); for obsessive–compulsive disorder the lifetime rate is 2.5% (Karno & Golding, 1991); the rates of phobias were most prevalent at about 14.3% (Eaton *et al*, 1991). Women consistently have about twice the rates of each anxiety disorder. Put in the context of the US population, these data show that over 30 million Americans have suffered from an anxiety disorder at some point.

The costs of anxiety disorders extend beyond those incurred from service utilisation to the indirect costs of impairment. Several researchers have examined the social morbidity that is associated with panic disorder (Markowitz *et al*, 1989; Weissman *et al*, 1989; Johnson *et al*, 1990; Klerman *et al*, 1991).

The objective of this report is to evaluate the social morbidity that is associated with each of the anxiety disorders. We examine financial dependence, help seeking, and drug and alcohol comorbidity among each of the diagnostic groups.

Method

The data come from the National Institute of Mental Health (NIMH) Epidemiological Catchment Area (ECA) Program, a survey of mental disorders in the United States (Regier *et al*, 1984; Robins *et al*, 1984; Robins & Regier, 1991). The ECA sample consisted of 18 571 non-institutionalised adults from five US sites: New Haven, Connecticut; Baltimore, Maryland; Durham, North Carolina; St Louis, Missouri; Los Angeles, California. The data used in the analyses come from Wave I of that study.

The NIMH Diagnostic Interview Schedule (DIS) was used in the ECA. It is a structured diagnostic interview designed to be used by trained lay interviewers (Robins *et al*, 1981). Algorithms which employed the DSM-III criteria were used to determine the presence of diagnoses (American Psychiatric Association, 1980). The anxiety disorders that are included in the analyses are panic disorder, obsessive–compulsive disorder (OCD) and phobias (social, simple and agoraphobia pooled). In addition panic disorder, OCD and phobias are pooled to create "any anxiety disorder". Other groups that were compared in the analyses include: those who reported panic attacks, but did not meet criteria for panic disorder; and those who had no Axis I disorder. In an attempt to disentangle the effects of comorbid major depressive disorder (MDD) on social morbidity, those with panic disorder were further classified as "panic disorder with MDD" or "panic disorder without MDD". Neither generalised anxiety disorder (GAD) or post-traumatic stress disorder (PTSD) were included because those diagnoses were not part of Wave I of the five site ECA program. Comorbid drug and alcohol abuse or dependence were examined pooling abuse and dependence.

The NIMH DIS also elicits information regarding occupational functioning, financial assistance, and help-seeking for emotional, drug or alcohol problems. Financial assistance that is examined includes receipt of disability, welfare or unemployment payments in the past six months. These forms of financial assistance are examined separately and combined to comprise "any financial assistance". The help-seeking behaviours that are examined below include use of the following service providers during the six months prior to the interview: general medical system, specialised mental health system, human services, and emergency room. All sources of help-seeking were combined to comprise "any help-seeking" in the past six months.

The weighted six month prevalence of each diagnostic group is reported. Six month prevalence was used to conform with the time frame that was available for service utilisation. The social costs are presented as rates of social morbidity among the groups of subjects who are classified according to the presence of each diagnosis in the past six months. All analyses (except prevalence) were conducted on unweighted data and were stratified by gender. Analyses of financial assistance and occupational functioning are limited to those from 18 to 65 years of age.

Table 1
Demographics of the ECA sample[1]

	Percentage of sample
Gender	
women	59.0
men	41.0
Race	
white	65.5
African-American	23.5
other	11.0
Marital status	
married	46.8
widowed	17.7
separated/divorced	15.0
Never married	20.5
Age (years)	
18–24	12.2
25–34	21.9
35–44	13.3
45–64	22.0
65+	30.5
Mean (s.d.)	48.89 (20.21)

1. $n = 18571$ non-institutionalised US adults.

Results

The demographics of the sample are described in Table 1. Over 6% of men and 13% of women had suffered from a DSM–III anxiety disorder in the six months prior to the DIS interview. More specifically, the six month prevalence of panic disorder was 0.5% for men and 1.0% for women; for OCD the rates were 1.3% for men and 1.7% for women; the rates of phobias were 5.7% among men and 11.9% for women. Among those with panic disorder about 20% of the men and 30% of the women had comorbid MDD. In addition there was a substantial group (about 0.6% of men and 1.1% of women) who had panic attacks in the past six months, yet did not meet DSM–III criteria for panic disorder.

Financial assistance

Financial dependence is elevated among individuals with anxiety disorders (Table 2). About 20% of men in the sample without Axis I disorders were not currently employed, but about 36% of men with phobias, 45% with OCD, 60% with panic disorder and about 30% with subclinical panic attacks did not have jobs. For women there was less striking elevation in rates of unemployment associated with anxiety disorders.

There is also a greater chance of chronic unemployment (not employed for at least five years) among those with anxiety disorders (Table 2). Each anxiety disorder was associated with an increased rate of chronic unemployment for men, with panic disorder and OCD having the greatest elevation.

Men with panic disorder are about six times as likely to receive disability payments as those with no Axis I diagnosis; the rates of disability are somewhat lower for OCD and phobias (Table 3). Receipt of

Table 2
Employment status of the 18–64-year-olds in the sample (rate per 100)

	Not currently employed		Not employed in the past 5 years	
Diagnosis (past six months)	Men	Women	Men	Women
Panic disorder	60.00	68.57	25.00	28.57
panic disorder without MDD	64.71	69.64	29.41	28.57
panic and major depression	33.33	64.29	0.00	28.57
panic attacks (subclinical)	29.73	55.67	15.09	28.20
Obsessive–compulsive	44.78	65.25	17.91	28.81
Phobia	35.69	54.05	12.72	28.02
No Axis I diagnosis	21.05	45.92	4.63	23.72

Table 3
Current financial assistance (rate per 100) received by 18–64-year-olds in the sample

Diagnosis (past six months)	Disability payments		Welfare		Unemployment compensation		Any assistance	
	Men	Women	Men	Women	Men	Women	Men	Women
Panic disorder	33.33	14.58	6.67	30.93	0.00	2.06	36.67	41.67
panic disorder without MDD	31.82	17.57	9.09	34.67	0.00	1.33	36.36	45.95
panic and major depression	37.50	4.55	0.00	18.18	0.00	4.55	37.50	27.27
panic attacks (subclinical)	13.89	10.10	5.41	19.00	5.56	3.03	22.22	31.31
Obsessive-compulsive	22.50	12.93	2.50	13.61	2.50	3.40	25.00	29.25
Phobia	19.38	7.63	2.18	16.53	4.67	2.69	24.69	24.71
No Axis I diagnosis	5.43	4.24	1.23	9.59	3.01	2.19	9.21	15.13

welfare payments is also elevated among those with anxiety disorders. In the US this includes Aid for Dependent Children, thus the rates are higher among women. The elevation is greatest in women with panic disorder.

Taken as a whole, those with anxiety disorders received considerably more financial assistance than those with no mental disorder; gender differences disappear when the forms of financial assistance are combined.

Help seeking

The rates of seeking specialised mental health services (such as out-patient visits to a mental health specialist) are magnified for both men and women with anxiety disorders (Table 4). About one-third of those with panic disorder and nearly one-fifth of those with panic attacks or OCD seek help from a mental health specialist. This is considerably higher than about 2% of those with no Axis I diagnosis.

Those with anxiety disorders are also more likely to seek help in emergency rooms and from primary care practitioners (Table 4). For comparison, less than 4% of individuals without an Axis I diagnosis sought help from the general medical system for emotional or drug or alcohol-related problems in the prior six months. The rates were much higher for those with anxiety disorders, especially panic disorder (over 25%). This might result from the physiological symptoms of a panic attack such as palpitations and shortness of breath – which mimic cardiac problems.

Taken as a whole, the help-seeking for emotional or drug or alcohol-related problems among anxiety disorder patients is very high. Over half of the patients with panic disorder seek help. Nearly 30% of those with other anxiety disorders, yet less than 10% of those with no diagnosis seek help for emotional problems.

Substance abuse

There were higher rates of alcohol and drug abuse and dependence among those suffering from anxiety disorders (Table 5). Women's rates of substance abuse and dependence were lower than men's. Nevertheless, women with anxiety disorders had higher rates of substance abuse than those with no Axis I diagnosis.

Discussion

The burden of anxiety disorders extends beyond the direct costs of treatment to the indirect costs

Table 4
Help seeking for emotional, drug or alcohol problems (rate per 100) by individuals in the sample in the past six months

Diagnosis (past six months)	General medical system		Specialised mental health system		Human services		Emergency room		Any help seeking	
	Men	Women	Men	Women	Men	Women	Men	Women	Men	Women
Panic disorder	33.33	25.93	36.67	31.48	13.33	11.11	3.33	3.70	63.33	56.48
panic disorder without MDD	40.91	25.61	31.82	30.49	13.64	12.20	4.55	4.88	68.18	56.10
panic and major depression	12.50	28.00	50.00	36.00	12.50	8.00	0.00	0.00	50.00	60.00
panic attacks (subclinical)	13.95	13.45	16.28	20.17	2.33	6.72	0.00	1.68	32.56	32.77
Obsessive-compulsive	7.07	11.96	17.17	16.30	4.04	4.35	0.00	0.00	24.24	27.72
Phobia	8.33	10.67	8.33	7.53	3.92	4.71	1.23	0.78	17.40	20.00
No Axis I diagnosis	1.93	3.80	1.70	2.13	1.05	1.94	0.07	0.18	4.35	7.19

Table 5
Substance abuse/dependence (rate per 100) in the sample

Diagnosis (past six months)	Alcohol		Drug	
	Men	Women	Men	Women
Panic disorder	40.00	13.21	3.33	4.72
Panic attacks (subclinical)	16.28	6.90	16.28	2.54
Obsessive-compulsive	27.27	6.59	8.08	4.89
Phobia	13.86	3.55	5.74	1.89
No anxiety disorder	6.82	1.09	2.16	0.95

of impaired social functioning. People with anxiety disorders suffer from considerable social morbidity – they have elevated rates of financial dependence and unemployment, substance abuse and dependence. The highest social costs are seen in those who suffer from panic disorder either with or without comorbid MDD. Even those with subclinical panic are at an elevated risk of impaired social functioning.

There are safe and effective psychotherapeutic and psychopharmacologic treatments of each anxiety disorder (e.g. panic disorder: NIH Consensus Development Conference Statement, 1991; OCD: The Clomipramine Collaborative Study Group, 1991; phobias: Barlow, 1988; Gelernter *et al*, 1991). Thus, if the disorder is detected by a physician, proper treatment can reduce social morbidity. However, because of the prevalence of anxiety disorders, and inadequate screening procedures, help seeking behaviour places a tremendous burden on the health care system in the US. Short screens are currently being evaluated for use in primary care settings and in emergency rooms (Apfeldorf *et al*, 1994; Broadhead *et al*, 1995).

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References

American Psychiatric Association, Committee on Nomenclature and Statistics (1980) *Diagnostic and Statistical Manual of Mental Disorders* (3rd Edn) (DSM-III) Washington, DC: APA.

Apfeldorf, W. A., Shear, M. K., Leon, A. C., *et al* (1994) A brief screen for panic disorder. *Journal of Anxiety Disorders*, **8**, 71–78.

Barlow, D. (1988) *Anxiety and its Disorders: The Nature and Treatment*. New York: Guilford Press.

Broadhead, W. E., Leon, A. C., Weissman, M. M., *et al* (1995) Development and validation of the SDDS-PC screen for multiple mental disorders in primary care. *Archives of Family Medicine*, in press.

Clomipramine Collaborative Study Group (1991) Clomipramine in the treatment of patients with obsessive-compulsive disorder. *Archives of General Psychiatry*, **48**, 730–738.

Eaton, W. W., Dryman, A. & Weissman, M. M. (1991) Panic and phobia. In *Psychiatric Disorders in America: The Epidemiologic Catchment Area Study* (eds L. N. Robins & D. A. Regier). New York: The Free Press.

Gelernter, C. S., Uhde, T. W., Cimbolic, P., *et al* (1991) Cognitive-behavioral and pharmacologic treatments of social phobia. *Archives of General Psychiatry*, **48**, 938–945.

Johnson, J., Weissman, M. M. & Klerman, G. L. (1990) Panic disorder, comorbidity and suicide attempts. *Archives of General Psychiatry*, **47**, 805–808.

Karno, M. & Golding, J. M. (1991) Obsessive-compulsive disorder. In *Psychiatric Disorders in America: The Epidemiologic Catchment Area Study* (eds L. N. Robins & D. A. Regier). New York: The Free Press.

Klerman, G. L., Weissman, M. M., Ouellette, R., *et al* (1991) Panic attacks in the community: Social morbidity and health care utilization. *Journal of the American Medical Association*, **265**, 742–746.

Markowitz, J. S., Weissman, M. M., Ouellette, R., *et al* (1989) Quality of life in panic disorder. *Archives of General Psychiatry*, **46**, 984–992.

NIH Consensus Development Conference (1991) Treatment of panic disorder. NIH Consensus Development Conference, September 25–27, 1991, 9. Bethesda, Maryland.

Regier, D. A., Boyd, J. H., Burke, J. D., *et al* (1988) One-month prevalence of mental disorders in the United States: based on five epidemiologic catchment area sites. *Archives of General Psychiatry*, **45**, 977–986.

——, Myers, J. K., Kramer, M., *et al* (1984) The NIMH Epidemiological Catchment Area Program: historical context, major obstacles, and study population characteristics. *Archives of General Psychiatry*, **41**, 934–941.

Robins, L. N., Helzer, J. E., Croughan, J., *et al* (1981) National Institute of Mental Health Diagnostic Interview Schedule: its history, characteristics, and validity. *Archives of General Psychiatry*, **38**, 381–389.

——, ——, Weissman, M. M., *et al* (1984) Lifetime prevalence of specific psychiatric disorders in three sites. *Archives of General Psychiatry*, **41**, 949–958.

—— & Regier, D. A. (eds) (1991) *Psychiatric Disorders in America: The Epidemiologic Catchment Area Study*. New York: The Free Press.

Weissman, M. M., Klerman, G. L., Markowitz, J. S., *et al* (1989) Suicidal ideation and suicide attempts in panic disorder and panic attacks. *New England Journal of Medicine*, **321**, 1209–1214.

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