Article

The Use of Complementary and Alternative Therapies to Treat Anxiety and Depression in the United States

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Objective: This study presents data on the use of complementary and alternative therapies to treat anxiety and depression in the United States.

Method: The data came from a nationally representative survey of 2,055 respondents (1997–1998) that obtained information on the use of 24 complementary and alternative therapies for the treatment of specific chronic conditions.

Results: A total of 9.4% of the respondents reported suffering from "anxiety attacks" in the past 12 months; 7.2% reported "severe depression." A total of 56.7% of those with anxiety attacks and 53.6% of those with severe depression reported using complementary and alternative therapies to treat these conditions during the past 12 months. Only 20.0% of those with anxiety attacks and 19.3% of those with severe depression visited a complementary or alternative therapist. A total of 65.9% of the respondents seen by a conventional provider for anxiety attacks and 66.7% of those seen by a conventional provider for severe depression also used complementary and alternative therapies to treat these conditions. The perceived helpfulness of these therapies in treating anxiety and depression was similar to that of conventional therapies.

Conclusions: Complementary and alternative therapies are used more than conventional therapies by people with self-defined anxiety attacks and severe depression. Most patients visiting conventional mental health providers for these problems also use complementary and alternative therapies. Use of these therapies will likely increase as insurance coverage expands. Asking patients about their use could prevent adverse effects and maximize the usefulness of therapies subsequently proven to be effective.

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Community surveys carried out over the past decade document that more than one-third of Americans use complementary and alternative medicinal treatments in a given year (1–4). There is reason to believe that the use of complementary and alternative therapies is more common among people with psychiatric problems than the rest of the population because fatigue, insomnia, chronic pain, anxiety, and depression are among the most commonly reported reasons for the use of complementary and alternative therapies in community surveys (1, 4, 5). Results from the few previous studies of the use of complementary and alternative therapies among psychiatric outpatients reported in the literature are consistent with this speculation in showing high rates of complementary and alternative therapy use (6–8). Consistent with this evidence, a recent national survey of complementary and alternative therapies use (4) reported that the use of such treatments is more common among people with self-defined anxiety and depression than among people with any other commonly occurring chronic condition other than back or neck problems. However, that report did not present data on the details of complementary and alternative therapies use among respondents with anxiety or depression, such as the types of users and the overlap of the use of complementary and alternative therapies with the use of conventional mental health services. This more detailed information is presented in the current report, which is based on the recent national survey.

Method

Sample

The survey was carried out between November 1997 and February 1998 among a sample of nationally representative telephone households by using random-digit dialing to select households and a random selection method to select one respondent age 18 or older for interview in each sample household. Verbal informed consent was obtained from all respondents before they began the interview. Eligibility was limited to English speakers without cognitive or physical impairments that prevented completion of an interview. The average administration time was 30 minutes. The Beth Israel Deaconess Committee on Clinical Investigations, Boston, Mass., approved the survey methods.

A total of 2,055 interviews were completed, representing a 60% weighted response rate. Weighting was used to adjust the data for geographic variation in cooperation (i.e., by region of country and urbanicity) and variation in probability of selection within each household. Another weighting adjusted for aggregate discrepancies between the sample distributions and Census population distributions on a variety of sociodemographic variables (9, 10). More details on the sample design are presented elsewhere (4). Owing to missing age data for six respondents, analyses are limited to the remaining 2,049 respondents.

TABLE 1. Overall Use of Complementary and Alternative Therapies for Treatment of Self-Defined Anxiety Attacks or Severe Depression Among Survey Respondents in Past 12 Months

	Incidence			
	Anxiety Attacks (N=193)[a]		Severe Depression (N=148)[a]	
Use of Therapy	%	SE	%	SE
Any complementary or alternative therapy	56.7[b]	4.6	53.6[b]	5.2
Cognitive feedback	34.4	4.8	30.2	4.8
Oral medication	6.8	2.3	8.7	2.7
Physical treatment	7.6	2.2	5.4	2.2
Other	22.7	5.0	27.4	5.8
Saw any complementary or alternative therapist	20.0[b]	4.3	19.3[b]	4.3

[a] Percents and standard errors based on weighted data. Sample sizes are unweighted.
[b] Percents differ from those in Table 3 of Eisenberg et al. (4) because the latter were confined to the subsample of respondents who reported these conditions as among the three most bothersome or serious medical conditions, whereas the results reported here are for the total subsamples of respondents who reported these conditions.

Measures

The interview was described to respondents as a survey about the health care practices of Americans carried out by investigators from Harvard Medical School. No mention was made of complementary and alternative therapies in characterizing the study. The first substantive questions concerned perceived health, functional impairment due to health problems, and interactions with medical doctors. The next questions asked about approximately two dozen chronic conditions on the basis of a checklist. The categories "anxiety attacks" and "severe depression" were included in this checklist. Interviewers then queried respondents about their lifetime and 12-month use of 24 complementary and alternative therapies that we subsequently divided into four larger subcategories for purposes of analysis: cognitive feedback (relaxation techniques, imagery, self-help groups, hypnosis, and biofeedback), oral medication (herbal medicine, megavitamins, homeopathy, and naturopathy), physical treatments (massage, chiropractics, osteopathy, yoga, and acupuncture), and other therapies (spiritual healing by others, dietary modifications, lifestyle diet, special diet for losing or gaining weight, energy healing, aromatherapy, folk remedies, laughter, other therapy to treat pain, and other lifestyle intervention programs).

Lifetime users of each complementary and alternative therapy were then asked their age at first use, their time of use, whether their complementary and alternative treatment was supervised by a professional trained in their use, and their reasons for recent use. Respondents who reported chronic conditions were asked about their use of complementary and alternative therapies in the past 12 months for each of these conditions. Use of conventional therapies for chronic conditions in the past 12 months was assessed for up to five chronic conditions for each respondent. When an individual respondent reported having more than five conditions, a random five were selected for questioning, and condition-specific data were weighted to adjust for differential probabilities of selection. Respondents with chronic conditions were asked to rate the perceived helpfulness of complementary and alternative therapies and conventional therapies. The final questions dealt with sociodemographics.

Statistical Analysis

Cross-tabulations were used to estimate the proportions of respondents who had, in the 12 months before the interview, used conventional and complementary therapies and alternative therapies for self-defined "anxiety attacks" and "severe depression." Cross-tabulations were also used to estimate the proportions of respondents who perceived these therapies to be helpful. Finally, logistic regression analysis was used to study the sociodemographic predictors of 12-month complementary and alternative therapies use among respondents with anxiety attacks and severe depression.

All results are based on analyses using weighted data. To adjust for the design effects introduced by this weighting, jackknife repeated replications simulations (11) were used to estimate standard errors. Jackknife repeated-replications simulations are one of several methods that use simulations of coefficient distributions in subsamples to generate empirical estimates of standard errors and significance tests. The ratios of the coefficients to these adjusted standard errors were used to compute the 95% confidence intervals of estimates. Tests for the significance of sets of predictors taken together were computed by using Wald chi-square tests from coefficient variance or covariance matrices on the basis of jackknife repeated-replications simulations.

Results

Distribution of Therapy Types

A total of 9.4% of the respondents reported that they had anxiety attacks, and 7.2% reported that they had severe depression at some time in the 12 months before the interview. A total of 38.8% (N=75) of the people with anxiety attacks also reported having severe depression. Most complementary and alternative therapies use was unsupervised (Table 1). As noted in the introduction, a previous report (4) found that the use of complementary and alternative therapies for the treatment of anxiety attacks and severe depression is considerably higher than that reported for any of the nearly two dozen chronic physical conditions assessed in the survey, with the exception of back and neck pain (in which the use of chiropractic medicine is common). Anxiety attacks, severe depression, and back and neck pain were the only four conditions for which a majority of people with the conditions reported the use of complementary and alternative treatments. Complementary and alternative therapies use for these four conditions was nearly twice as common as for many other conditions, such as allergies, arthritis, and hypertension (4).

A detailed breakdown of the types of complementary and alternative therapies used by respondents to treat their anxiety attacks and severe depression is presented in Table 2. As shown here, a wide range of complementary and alternative therapies were used. The most commonly used were relaxation techniques and spiritual healing by others.

Sociodemographic Correlates of Use

Bivariate logistic regression analysis was used to study the sociodemographic predictors of complementary and alternative therapies use for the treatment of anxiety attacks and severe depression. No statistically significant ef-

fects ($p<0.05$, two-tailed tests) were found for any of the nine predictors of use of complementary or alternative therapies (gender, education, age, income, race, marital status, employment status, region of the country, and urbanicity) in either the subsample of respondents with anxiety attacks or the subsample with severe depression.

Overlap in Use of Treatments

Previous research has shown that overall complementary and alternative therapies use is positively associated with the use of conventional medicine (1, 4). As shown in Table 3, the same was found to be true for people who use complementary and alternative therapies to treat anxiety attacks and severe depression. The rate of conventional mental health professionals seen by all survey respondents with anxiety attacks in the past 12 months is somewhat lower than the 46.4% rate of 12-month service use for respondents with panic disorder in the National Comorbidity Survey, whereas the rate for all respondents with severe depression is identical to the rate of 12-month service use for respondents with major depression in the same study (12). As shown in Table 3, the conventional treatment rates are considerably higher in the subsamples of people who used complementary and alternative therapies to treat these conditions. A breakdown of this overlap from the perspective of the conventional provider is presented in Table 4.

Perceived Helpfulness of Treatment

The proportions of anxious and depressed users of complementary and alternative therapies and conventional therapies who perceived these therapies to be "very helpful" are reported in Table 5. The proportions who found complementary and alternative therapies to be "very helpful" are comparable to the proportions who found conventional therapies to be "very helpful." No evidence was found for significant variation in the perceived helpfulness of complementary and alternative therapies on the basis of whether the respondent also used conventional therapy. There was no significant variation in the perceived helpfulness of conventional therapy on the basis of whether the respondent also used complementary and alternative therapies.

TABLE 2. Use of Specific Types of Complementary and Alternative Therapies for Treatment of Self-Defined Anxiety Attacks or Severe Depression Among Survey Respondents in Past 12 Months

	Incidence			
	Anxiety Attacks (N=193)[a]		Severe Depression (N=148)[a]	
Type of Therapy	%	SE	%	SE
Cognitive feedback	34.4	4.8	30.2	4.8
Relaxation techniques	20.1	3.4	19.7	3.9
Imagery	10.4	4.3	6.5	3.1
Self-help group	4.4	1.4	7.6	2.5
Hypnosis	3.0	1.8	1.8	1.8
Biofeedback	1.6	1.3	1.5	1.5
Oral medication	6.8	2.3	8.7	2.7
Herbal medicine	3.3	1.4	4.3	1.7
Megavitamins	3.6	1.9	3.4	2.1
Homeopathy	1.7	1.4	1.0	0.7
Naturopathy	1.9	1.4	1.5	1.5
Physical treatments	7.6	2.2	5.4	2.2
Massage	5.2	1.9	2.1	1.3
Chiropractics	0.5	0.4	1.0	1.0
Osteopathy	0.3	0.3	0.0	0.0
Acupuncture	0.9	0.7	0.6	0.6
Yoga	1.7	1.2	1.7	1.3
Other therapies	22.7	5.0	27.4	5.8
Spiritual healing by others	9.9	4.3	10.5	5.1
Dietary modifications	3.3	1.9	3.1	2.1
Lifestyle diet	0.4	0.4	0.0	0.0
Special diet for losing or gaining weight	0.9	0.9	0.0	0.0
Energy healing	2.8	1.8	5.4	2.7
Aromatherapy	2.6	1.2	3.7	1.9
Laughter	0.5	0.5	0.0	0.0
Other therapy to treat pain	2.6	1.3	3.8	2.0
Other lifestyle intervention program	3.2	2.5	1.7	1.2
Folk remedies	0.0	0.0	2.6	2.5

[a] Percents and standard errors based on weighted data. Sample sizes are unweighted.

Discussion

The results reported here are limited by the restriction of the sampling frame to people who spoke English and lived in households with telephones, as well as by the relatively low response rate (60%) (1). An additional limitation is that we have no independent confirmations of respondent characterizations of themselves as having "anxiety attacks" or "severe depression." Finally, the omnibus nature of the survey made it impossible to probe a variety of issues regarding complementary and alternative therapies use for anxiety and depression as deeply as would have been done in a survey that focused exclusively on mental disorders. For example, no information was obtained on the types of herbal therapies used to treat these conditions or the extent to which conventional providers either recommended or provided complementary and alternative therapies.

Within the context of these limitations, the results suggest that the majority of people in the United States with self-defined anxiety attacks or severe depression use some form of complementary and alternative therapy to treat these conditions. This means that people with these conditions are considerably more likely to use complementary and alternative therapies than conventional medical or mental health treatments.

Some evidence exists regarding the efficacy of certain complementary and alternative therapies in treating depression and, to a lesser extent, anxiety. The most extensive evidence comes from nearly 30 controlled trials that have evaluated St. John's wort (*Hypericum perforatum*) in the treatment of depression. Two separate meta-analyses of these studies (13, 14) concluded that St. John's wort is superior to placebo and comparable to conventional pharmacotherapy in the treatment of various severities of depression. The first U.S., large-scale, controlled clinical trial to study the effect of St. John's wort on major depres-

TABLE 3. Conventional Mental Health Professionals Seen by All Survey Respondents With Self-Defined Anxiety Attacks or Severe Depression and Subsamples Who Used Complementary and Alternative Therapies for These Conditions in Past 12 Months

	Incidence							
	All Respondents				Users of Complementary and Alternative Therapies			
	With Anxiety Attacks (N=135)[a]		With Severe Depression (N=105)[a]		With Anxiety Attacks (N=63)[a]		With Severe Depression (N=43)[a]	
Provider	%	SE	%	SE	%	SE	%	SE
Any conventional mental health professional	40.8	6.0	36.4	5.5	51.9	9.4	63.9	8.3
Psychiatrist	16.6	4.8	21.3	4.4	25.4	8.3	30.3	8.0
Other physician	12.6	3.9	7.4	2.7	16.6	6.2	19.7	8.4
Psychologist	17.7	5.1	18.1	4.0	18.7	5.8	47.8	9.5
Social worker	4.6	2.3	4.5	2.0	8.6	5.3	6.7	4.9
Clergy	4.9	3.1	8.5	3.1	7.2	5.1	16.2	7.5
Other	1.6	0.9	0.8	0.8	3.2	2.7	0.0	0.0

[a] Respondents were asked about their use of conventional therapies for only a random subsample of up to five chronic conditions. As a result, the numbers of respondents in these denominators are smaller than the total numbers who reported having anxiety attacks or severe depression or using complementary and alternative therapies to treat these conditions. These are unweighted numbers, although percents and standard errors are based on weighted data.

TABLE 4. Use of Complementary and Alternative Therapies for Treatment of Self-Defined Anxiety Attacks or Severe Depression Among Survey Respondents Who Saw Conventional Mental Health Professionals for Those Conditions in Past 12 Months[a]

	Use of Therapy by Respondents Who Saw Conventional Professionals														
	Any Conventional Mental Health Professional			Psychiatrist			Other Physician			Psychologist			Social Worker, Clergy, or Other		
Disorder and Use of Therapy	N	%	SE	N	%	SE	N	%	SE	N	%	SE	N	%	SE
Anxiety attack	51			20			17			22			12		
Any complementary or alternative therapy		65.9	11.8		89.5	6.4		81.8	9.4		50.2	18.1		85.8	8.6
Cognitive feedback		55.2	11.5		79.9	10.4		60.3	15.0		40.7	15.8		85.8	8.6
Oral medication		10.5	6.6		7.8	7.7		13.6	10.7		1.7	1.8		26.2	19.2
Physical treatment		5.0	2.3		6.3	4.1		6.7	5.1		4.3	3.3		0.0	0.0
Other		14.9	6.4		14.1	9.7		26.8	13.5		16.8	10.9		13.9	12.0
Severe depression	46			26			9			22			14		
Any complementary or alternative therapy		66.7	8.1		61.6	11.2		86.7	10.3		83.6	6.9		62.4	14.0
Cognitive feedback		36.9	9.2		33.8	10.8		30.7	19.1		49.6	13.6		40.9	17.0
Oral medication		8.2	5.1		7.0	4.9		0.0	0.0		13.7	8.4		0.0	0.0
Physical treatment		5.3	3.4		8.2	6.2		4.6	4.8		1.8	1.9		10.1	9.6
Other		39.9	10.0		35.2	11.5		80.0	12.3		50.0	13.6		27.0	15.8

[a] Respondents were asked about their use of conventional therapies for only a random subsample of up to five chronic conditions. As a result, the numbers of respondents in these denominators are smaller than the total numbers (193 with anxiety attacks and 148 with severe depression) who used conventional therapies to treat these conditions. These are unweighted numbers, although percents and standard errors are based on weighted data.

sion is currently underway with funding from the National Institutes of Health's National Center for Complementary and Alternative Medicine (15). Another fairly extensive series of studies has evaluated the effects of various types of exercise in treating depression. Two meta-analyses of these studies (16, 17) concluded that both aerobic and nonaerobic exercise are superior to results obtained from control groups on waiting lists in treating mild to moderate depression. Less extensive evidence exists from two controlled trials (18, 19) showing positive effects of relaxation (the complementary and alternative therapy most commonly used to treat anxiety and depression) and meditation on the reduction of depression and from one controlled trial (20) showing positive effects of relaxation on the reduction of anxiety. At least seven randomized controlled trials have evaluated the effects of the herb kava (*Piper methysticum*) for the symptomatic treatment of mild anxiety (21–27). The results have been positive but have been criticized because of methodological flaws. Finally, two trials have evaluated the effects of acupuncture in treating depression by using sham or nonspecific acupuncture as a control. One of these (28) found positive effects, and the other (29) did not.

Contrary to the results of Knaudt et al. (6) in a survey of psychiatric outpatients in North Carolina, who found that herbal therapies made up a substantial proportion of total complementary and alternative therapies use, our national data found that herbal therapies made up only a small proportion of all complementary and alternative therapies use for self-defined anxiety attacks and severe depression. However, this is such a rapidly changing area of treatment, due in large part to substantial increases in

TABLE 5. Percentages of Survey Respondents With Self-Defined Anxiety Attacks or Severe Depression Who Rated Conventional Therapies and Complementary and Alternative Therapies "Very Helpful" in Treating These Conditions[a]

	Rated Therapy "Very Helpful"					
	Respondents With Anxiety Attacks			Respondents With Severe Depression		
Respondent Group and Type of Therapy	N	%	SE	N	%	SE
Respondents who used conventional therapies						
Any conventional professional	51	67.8	8.7	46	58.7	8.0
Psychiatrist	20	60.9	15.7	26	60.7	10.5
Other physician	17	34.2	14.5	9	42.5	18.5
Psychologist	22	77.6	9.7	22	47.2	11.6
Social worker, clergy, or other	12	42.6	18.6	14	56.1	14.3
Respondents who used complementary and alternative therapies						
Any complementary and alternative therapy	89	60.3	6.8	63	52.7	8.3
Cognitive feedback	54	50.9	8.9	39	47.9	9.4
Oral medication	11	54.5	16.8	13	38.4	16.0
Physical treatments	15	53.2	14.5	7	6.8	6.9
Other	31	47.5	13.4	26	43.3	13.9

[a] Respondents were asked about their use of conventional therapies for only a random subsample of up to five chronic conditions. As a result, the numbers of respondents in these denominators among users of conventional therapies are smaller than the total numbers (193 with anxiety attacks and 148 with severe depression) who used conventional therapies to treat these conditions. The denominator numbers are unweighted, although percents and standard errors are based on weighted data.

direct-to-consumer advertising of herbal therapies and expansion of sales into grocery stores and pharmacies in recent years, that the situation might well be different at present. No information was collected on the types of herbal therapies used to treat anxiety or depression, making it impossible for us either to confirm or refute data from less representative studies on the types of herbal therapies most often used to treat these conditions.

The high proportions of self-defined anxious and depressed patients who use complementary and alternative therapies are especially striking because insurance coverage for these therapies has only recently begun (30). On the basis of the plausible assumption that demand for complementary and alternative treatments is similar to demand for conventional health care in sensitivity to how much patients are willing to pay out of pocket (31), it seems likely that the proportion of people using complementary and alternative therapies will increase as insurance coverage for these treatments expands in the future.

We found that there is a positive association between complementary and alternative therapies use and use of conventional therapy. Close to nine out of every 10 patients with self-defined anxiety attacks who are seen by a psychiatrist also use some type of complementary and alternative therapy to treat anxiety, while more than six out of every 10 patients with self-defined severe depression who are seen by a psychiatrist also use some type of complementary and alternative therapy to treat depression. These rates hold regardless of the wide range of sociodemographic characteristics of patients.

It is important to recognize that this combined use of complementary and alternative therapies and conventional therapy can be dangerous, because case studies show that some types of complementary and alternative therapies can create potentially dangerous interactions with pharmacotherapies (32, 33). For example, recent case reports suggest that mixing St. John's wort with selective serotonin reuptake inhibitors can induce a mild serotonin syndrome (34). In vitro studies also suggest that hypericum extracts are potent inducers of hepatic enzymes and are therefore capable of reducing the plasma concentrations of a variety of concomitant prescription medications, such as indinavir for patients with HIV (35, 36).

We know from our previous analyses of other parts of the survey reported here that only a minority of patients who use complementary and alternative treatments inform their doctors (3, 4). As this is the case, and in light of the potential risks of some complementary and alternative therapies, mental health professionals need to adopt a more proactive posture than they have up until now to discuss complementary and alternative therapies use with their patients. Opening up lines of communication could help prevent adverse clinical effects, as well as maximize the usefulness of any complementary and alternative therapies subsequently proven to be effective (32).

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