

Use of Practitioner-Based Complementary Therapies by Persons Reporting Mental Conditions in the United States

Benjamin G. Druss, MD, MPH; Robert A. Rosenheck, MD

Background: To our knowledge, this study provides the first national estimates for use of practitioner-based complementary treatments by US residents reporting mental conditions.

Methods: A total of 16038 respondents to the 1996 Medical Expenditure Panel Survey were asked about visits for 12 complementary medical services (eg, chiropractic services and herbal remedies). Bivariate and multiple regression models examined use of these therapies in individuals reporting a mental condition (n=1803), fair or poor mental health status (n=992), and 1 of 4 chronic medical conditions (n=3262) and in the remainder of the sample (n=10793).

Results: A total of 9.8% of those reporting a mental condition made a complementary visit, and about half of these (4.5%) made a visit to treat the mental condition. Persons reporting transient stress or adjustment disorders were most likely (odds ratio, 9.1%; 95% confidence interval, 5.5%-12.7%), and those with psychotic (odds ra-

tio, 1.5%; 95% confidence interval, 0.0%-4.2%) and affective (odds ratio, 2.6%; 95% confidence interval, 1.5%-3.8%) conditions least likely, to use complementary therapies to treat their mental condition. In multivariate models controlling for medical comorbidity, fair or poor mental health status, and demographic factors, report of a mental condition predicted a 1.27-fold increase in the odds of a complementary visit (95% confidence interval, 1.04-1.54).

Conclusions: Self-reported mental conditions were associated with increased use of complementary treatments, although use of these treatments was concentrated in respondents with transient distress rather than chronic and serious conditions. More research using structured diagnostic interviews is needed to examine the prevalence, patterns, and clinical implications of use of these treatments by individuals with mental conditions in "real world" community settings.

Arch Gen Psychiatry. 2000;57:708-714

RECENT YEARS have seen the rapid growth of interest in complementary medicine on the part of consumers, health care purchasers, and the media.^{1,2} However, the scientific literature has only recently begun to publish data on the efficacy, safety, and patterns of use for these treatments. The first major epidemiological survey of these therapies was not conducted until 1993,³ and only in the past several years has there been an organized call for a national research agenda studying these forms of care.⁴

A body of research has begun to examine the efficacy of complementary medicine for the treatment of depression and other psychiatric illnesses.⁵⁻⁷ However, these studies do not address the equally important question of how persons with mental conditions are using these treatments in the "real world." At least 2 fac-

tors make individuals with mental conditions a particularly important subpopulation in whom to study use of complementary therapies. First, patients undergoing psychiatric treatment may use these therapies at higher rates than the general population.⁸ Because these treatments may adversely interact with prescription psychotropic drugs,⁹ mental health providers need to know if and when their patients are using them.

Second, it has been suggested that even for individuals not undergoing psychiatric treatment, use of complementary medicine may be a marker for mental symptoms.¹⁰ A recent article¹¹ in the *New England Journal of Medicine* reporting a positive association between use of these treatments and depressive symptoms among women with breast cancer prompted an editorial¹² and subsequent debate^{11,13-15} about whether use of these treatments should be regarded as a marker for

From the Departments of Psychiatry and Public Health, Yale University and the Northeast Program Evaluation Center, VA Healthcare System, West Haven, Conn.

PARTICIPANTS AND METHODS

SAMPLE

The Medical Expenditure Panel Survey (MEPS) is conducted to provide nationally representative estimates of health care use, expenditures, sources of payment, and insurance coverage for the US civilian noninstitutionalized population. The 1996 MEPS used the 1995 National Health Interview Survey as the sampling frame.¹⁷ The subsample selected for the 1996 MEPS consisted of 10 597 responding National Health Interview Survey households.

Three interviews were conducted in each respondent's home during 1996. Respondents kept a diary of medical events (complementary and conventional provider visits) to enhance recall. Use data were also validated using interviews with health care providers.

Overall, 24 676 individuals responded to the core MEPS household interview, representing a joint National Health Interview Survey–MEPS response rate of 77.7%. For this study, we included all individuals aged 18 years or older who responded to the survey (n=16 038).

MENTAL SYMPTOMS AND MENTAL AND GENERAL MEDICAL CONDITIONS

In each interview, respondents were asked the following probe question: "We're interested in learning about health problems that may have bothered you in the past 12 months. Health problems include physical conditions, accidents, or injuries that affect any part of the body as well as mental or emotional health conditions, such as feeling sad, blue, or anxious about something." There was no limit on the number of conditions that a respondent could report. The interviewer recorded all conditions, regardless of whether the patient received any treatment.

Conditions reported by the respondent were recorded by interviewers as verbatim text, and then subsequently entered as 1996 *International Classification of Diseases, Ninth Revision (ICD-9)*,¹⁸ codes by professional coders. Interviewers each underwent 80 hours of training, and coders all had degrees in nursing or medical record administration. A total of 5% of records were rechecked for errors; error rates in these rechecks were less than 2.5%.

Mental conditions were categorized as follows: (1) psychotic conditions (*ICD-9* codes 295.0-295.9, 297.0-297.9, and 298.0-298.9), (2) affective conditions (*ICD-9* codes 296.0-296.9 and 311.0-311.9), (3) anxiety conditions (*ICD-9* codes 300.0 and 300.2), (4) adjustment disorders or short-term reactions to stress (*ICD-9* codes 308.0-309.9), (5) substance use conditions (*ICD-9* codes 303.0-305.9), and (6) all codes falling between *ICD-9* codes 290.0 and 319.9 that were not in the previous categories (these were considered "other" mental conditions). Psychotic, affective, anxiety, and substance use conditions were typically coded based on respondents' specific reports of a diagnosis. Adjustment reactions or reactions to stress were coded when respondents reported transient "stress" or other emotional difficulties related to specific life events. A staff psychiatric nurse established diagnoses in cases of diagnostic ambiguity or uncertainty.

A global subjective emotional health rating (a Likert scale rating overall mental health from excellent to poor) has been shown to be correlated with the presence of a mental disorder, particularly major depressive illness.¹⁹ Therefore, as a second means of capturing mental conditions, distress, or both, we also examined responses to the following question: "In general, would you say that your mental health is excellent, very good, good, fair, or poor?"

Four chronic medical conditions were used as a basis for comparison: (1) diabetes (*ICD-9* codes 250.0-250.9), (2) hypertension (*ICD-9* codes 401.1-401.9), (3) ischemic heart disease (*ICD-9* codes 410.0-414.9), and (4) back problems (*ICD-9* codes 720.0-724.9). These tracer conditions, a subset of those studied in the Medical Outcomes Study,²⁰ were chosen to represent a range of symptom profiles and severity. A supervising primary care physician made final diagnoses in cases of clinical uncertainty.

To account for comorbidity, each of these 3 variables—mental conditions, general conditions, and mental symptoms—were treated as separate, although correlated, measures of health status. A fourth group, without any of these 3 conditions, was used as a comparison group in all analyses.

For each condition, interviewers asked about health service use, including conventional (eg, inpatient stays and outpatient medical visits) and complementary (described

Continued on next page

emotional distress in medical settings. In another study,¹⁶ diagnosis of major depression was found to be positively associated with use of nonprescription dietary supplements in a sample of young adults. These findings suggest the need for representative data covering a wider spectrum of psychiatric diagnoses and complementary treatments than have so far been available.

This study uses data from the largest survey ever conducted, to our knowledge, on the use of practitioner-based complementary therapies in the United States to examine the prevalence and predictors of use of these treatments among individuals reporting mental conditions and mental distress. We examined the following questions: What is the prevalence of complementary medicine use among those reporting psychiatric conditions, distress, or both in the United States? Does report of a psychiatric disorder predict an increased likelihood of use

of these therapies? Among those reporting mental conditions, what are the predictors and patterns of use of complementary treatments?

RESULTS

CHARACTERISTICS OF THE SAMPLE

A total of 1803 individuals, or 11.2% of the sample, reported a mental condition, 992 (6.2%) reported fair or poor mental health, and 3262 (20.3%) reported one of the tracer medical conditions. Respondents who reported fair or poor mental health were older and less likely to have a high school education than the other groups. Individuals reporting a mental or physical condition had a higher mean number of conditions (medical and mental), and were substantially more likely to have had a con-

in greater detail later in the article) visits during the past year.

COMPLEMENTARY MEDICINE

In the context of questions about general medical service use, all MEPS participants were asked about visits to chiropractors in the past year. A separate section asking about use of complementary therapies began with the following probe question: "In order to get as complete a picture as possible of all sources of health care, we would also like to ask about the use of other forms of health care, including treatment you may have previously told me about, such as the treatments shown on this card. Frequently this type of care is referred to as alternative or complementary care. During the calendar year 1996, for health reasons, did you consult someone who provides these types of treatments?" As with conventional medical services, interviewers were instructed to report only formal, paid visits, as opposed to informal discussions with friends, pharmacists, or store employees.

The card contained the following categories: acupuncture; nutritional advice or lifestyle diet; massage therapy; herbal remedies purchased; biofeedback training; training or practice of meditation, imagery, or relaxation techniques; homeopathic treatment; spiritual healing or prayer; hypnosis; traditional medicine, such as Chinese, Ayurvedic, and American Indian; and other "alternative" or "complementary" treatments. This list of treatments, drawn from the original classification by Eisenberg and colleagues,³ has been the most widely used scheme in the scientific literature to denote and classify complementary therapies.

If the response was yes, the respondent was asked to specify which of the treatments on the list had been received. Multiple types of service use by one person were possible.

STATISTICAL METHODS

A first set of analyses compared demographic characteristics among respondents with self-reported mental conditions, fair or poor mental health status, and any of the 4 chronic medical conditions and the whole sample. Second, rates of overall use of complementary therapies, and use for particular

conditions, were calculated for specific mental and medical conditions. To compare differences in use across multiple conditions, 95% confidence intervals were constructed using SEs for the percentages. Nonoverlapping intervals were considered significantly different at $P < .05$.

A logistic regression equation was then constructed to model any complementary visit as a function of mental condition, fair or poor mental health status, and any of the chronic medical illnesses of interest.

A separate equation was then used to model use of each of the 12 forms of complementary therapy as a function of presence of the same 3 variables (mental condition, fair or poor mental health status, and chronic medical illness). Next, 3 separate logistic regression equations examined physician involvement (physician provision of the treatment, physician referral for the therapy, and whether a physician was aware of the visit) among the subset of respondents with at least 1 complementary and 1 conventional medical visit.

Finally, to examine the determinants of complementary medicine use in persons with mental conditions, 2 logistic regression equations examined the following predictors of complementary therapy use among the subset of respondents reporting a mental condition: the 6-level variable for psychiatric diagnosis (using adjustment disorder as a comparison group), fair or poor mental health status, chronic medical condition, and all covariates. The first model examined predictors of any complementary medicine use among individuals reporting a mental condition, and the second examined predictors of use of complementary therapy to treat a mental condition.

All regression models adjusted for the following covariates, which have been shown to be associated with use of complementary services: age, sex, race, educational level, and US geographic region.^{1-3,21,22} Models also included the total number of conditions (medical and mental), a proxy for overall illness burden that has been shown to be useful in predicting medical use and outcomes.²³ There was no limit on the number of conditions respondents could report. A statistical package (SUDAAN, release 7.0; Research Triangle Institute, Cary, NC), with appropriate weighting and nesting variables, was used for statistical comparisons and for generating weighted prevalence estimates for the US population.

ventional physician visit than the other 2 groups. Otherwise, the 4 groups had similar demographic profiles (**Table 1**).

USE OF COMPLEMENTARY THERAPIES IN MENTAL AND SELECTED MEDICAL CONDITIONS

Overall, 9.8% of individuals with a mental condition reported use of a complementary therapy in the past year, and about half of these (4.5%) reported specifically using such a therapy to treat the mental disorder. Most respondents (66.3%) reporting a mental condition who used any complementary therapy made only a single visit; the remainder (33.7%) had 2 or more such appointments. Among respondents reporting mental conditions, the most common nonmental conditions for which these treatments were

used were head colds and other upper respiratory tract infections (27.8%), back and joint pains (10.9%), gastroenteritis (8.5%), and headache or dizziness (6.0%).

While overall rates of use were similar across mental conditions (ie, 95% confidence intervals showed substantial overlap), the use of such therapies to treat specific conditions varied substantially. Individuals with adjustment disorders were most likely to be using a complementary therapy to treat the condition, and those with psychotic and affective conditions were least likely. Respondents with anxiety conditions were more likely than those with affective conditions, but less likely than those with adjustment disorders, to treat their condition with a complementary therapy. No other differences were significant at $P = .05$ (**Table 2**).

A total of 7.9% of those with a selected chronic medical condition reported making a complementary visit in

Table 1. Characteristics of the 16 038 Study Participants*

Variable	Participants' Condition			
	Mental Condition (n = 1803)†	Fair or Poor Mental Health (n = 992)†	Chronic Medical Condition (n = 3262)†	None (n = 10 793)
Demographics				
Age, y	44.6 (44-46)	50.0 (48-52)	43.8 (43-44)	44.1 (44-44)
Female sex	53.4 (51-57)	56.5 (53-60)	53.6 (52-55)	53.1 (52-54)
Nonwhite	18.6 (16-22)	20.8 (18-24)	17.3 (16-19)	17.4 (16-18)
High school graduate	75.9 (75-79)	47.3 (44-51)	76.8 (75-78)	77.7 (77-79)
Uninsured	18.9 (17-22)	19.3 (16-22)	19.6 (18-21)	19.4 (18-20)
Mean No. of conditions‡	6.3 (6-7)	3.9 (4-4)	5.9 (6-6)	3.2 (3-3)
Region				
Northeast	19.8 (19-23)	14.0 (11-17)	19.1 (17-21)	20.3 (19-21)
Midwest	22.5 (21-25)	22.0 (19-25)	23.1 (21-25)	22.4 (21-24)
South	34.6 (34-38)	39.5 (36-43)	35.2 (33-37)	34.1 (33-35)
West	21.9 (20-25)	24.5 (21-28)	22.6 (21-24)	23.2 (22-24)
Any physician visit	83.9 (82-86)	73.3 (71-75)	88.7 (87-90)	69.1 (68-70)

*Data are given as percentage of participants unless otherwise indicated. Since the 3 categories of conditions are not mutually exclusive, the number of participants adds to greater than 16 038. All values are given as mean (95% confidence interval). The 95% confidence intervals were constructed using SEs for the mean. Nonoverlapping intervals differ significantly at $P < .05$.

†Self-reported.

‡Total medical and mental conditions.

Table 2. Use of Complementary Therapies in Those With Mental and Selected Medical Conditions*

Variable	Any Complementary Therapy	Complementary Therapy for the Condition
Mental conditions†		
Psychotic disorder (n = 40)	9.0 (0.0-18.7)	1.5 (0.0-4.2)
Affective disorder (n = 846)	9.8 (7.7-11.9)	2.6 (1.5-3.8)
Anxiety disorder (n = 405)	10.4 (7.5-13.4)	4.1 (3.9-4.4)
Substance use disorder (n = 72)	11.4 (3.3-19.5)	8.2 (1.2-15.1)
Adjustment disorder (n = 394)	8.9 (5.8-12.0)	9.1 (5.5-12.7)
Other psychiatric disorder (n = 307)	9.1 (5.5-12.7)	0.9 (0.0-1.9)
Any mental disorder (n = 1803)	9.8 (8.3-11.2)	4.5 (3.4-5.5)
Chronic medical conditions†		
Diabetes (n = 694)	7.6 (5.3-9.8)	4.1 (2.5-5.7)
Hypertension (n = 1821)	8.6 (7.1-10.1)	0.4 (0.0-0.9)
Coronary artery disease (n = 225)	8.0 (4.0-11.9)	0.6 (0.0-2.4)
Back problems (n = 1222)	8.0 (6.3-9.6)	7.4 (5.6-9.2)
Any selected medical disorder (n = 3262)	7.9 (6.8-9.0)	3.9 (3.1-4.7)

*Data are given as percentage (95% confidence interval) of participants. The 95% confidence intervals were constructed using SEs for the percentage. Nonoverlapping intervals differ significantly at $P < .05$.

†Self-reported.

the past year. About half (3.9%) of these respondents used the therapy to treat the specific medical condition. Complementary therapy was most commonly used to treat back problems, and least commonly used to treat hypertension and coronary artery disease (**Table 3**).

USE OF COMPLEMENTARY THERAPY ACROSS GROUPS

In multivariate models adjusting for fair or poor mental health status, chronic medical condition, total number of conditions, and demographic variables, having a men-

tal condition was associated with a 1.27-fold increase in the odds of making a complementary visit (95% confidence interval, 1.04-1.54). Neither fair or poor mental health nor having one of the index medical conditions was significantly associated with such a visit (Table 3).

In the subset of respondents who did not identify a visit to treat a mental disorder (n = 15 956), the presence of a mental disorder remained significantly associated with an increased likelihood of complementary care (odds ratio, 1.20; 95% confidence interval, 1.02-1.38). This finding suggests that the excess use of complementary services among individuals reporting mental conditions is only partly explained by explicit use of these therapies to treat mental conditions.

Among all groups, the most common forms of complementary treatment were chiropractic services, herbal treatments, massage, spiritual healing, and nutritional remedies. Among patients with adjustment disorders (the group with the highest prevalence of complementary therapy use), herbal remedies were the single most common therapy used, and were taken by 29% of those with adjustment disorders making any complementary visit.

In multivariate models, the presence of a mental condition predicted significant increases in the odds of using herbal remedies and acupuncture. Fair or poor mental health status was associated with an increase in the odds of a visit for spiritual healing. Having a chronic medical condition was not associated with any statistically significant differences in complementary medicine use in multivariate models (Table 3).

Among respondents reporting a mental condition who used complementary and conventional physician services (n = 121), 3.7% reported that a physician had provided the service, 9.0% reported that a physician had referred them for the service, and 23.5% reported that a physician was aware of this use. These patterns of physician involvement did not differ significantly from re-

Table 3. Use of Complementary Therapy Across Groups

Variable	Participants' Condition									
	Mental Condition (n = 1803)*			Fair or Poor Mental Health (n = 992)*			Chronic Medical Condition (n = 3262)*			None (n = 10 793)†‡
	% of Participants‡	Logistic Regression§		% of Participants‡	Logistic Regression§		% of Participants‡	Logistic Regression§		
		OR	95% CI		OR	95% CI		OR	95% CI	
Any complementary visit	9.8	1.27	1.04-1.54	8.2	1.11	0.86-1.45	7.9	0.93	0.79-1.11	
Specific therapies										
Chiropractic	3.3	1.11	0.81-1.52	2.6	0.95	0.63-1.43	1.2	1.01	0.79-1.28	3.3
Acupuncture	1.0	2.22¶	1.30-3.85	0.7	1.41	0.68-2.86	3.3	0.70	0.35-1.41	0.6
Massage	2.3	1.22	0.82-1.79	1.1	0.65	0.36-1.20	0.4	0.82	0.58-1.16	2.1
Herbal	2.6	1.64¶	1.12-2.33	2.1	1.30	0.78-2.22	1.7	0.96	0.70-1.32	1.7
Biofeedback	0.2	1.82	0.45-7.14	0.4	1.11	0.23-5.26	1.7	0.88	0.22-3.57	0.1
Meditation	0.7	1.33	0.68-2.63	0.2	0.82	0.35-1.89	0.4	0.53	0.25-1.10	0.6
Homeopathy	0.5	1.20	0.56-2.56	0.2	0.65	0.19-2.22	1.4	0.93	0.52-1.64	0.4
Spiritual	1.7	1.27	0.85-1.92	2.6	2.22¶	1.33-3.70	0.0	0.98	0.65-1.47	1.2
Hypnosis	0.0	0.12	0.01-1.09	0.0	0.50	0.16-1.52	0.3	0.43	0.14-1.30	0.1
Traditional	0.5	1.06	0.53-2.13	0.1	0.35	0.06-2.08	0.3	0.75	0.39-1.45	0.4
Nutrition	1.2	1.15	0.65-2.04	1.9	1.69	0.97-2.94	1.3	1.37	0.91-2.04	0.9
Other	0.6	1.64	0.81-3.33	0.2	0.62	0.22-1.75	0.4	1.16	0.54-2.56	0.1

*Self-reported.

†Data are given as percentage of participants.

‡Percentages were weighted to reflect the complex sampling design.

§Each row represents a separate logistic regression equation modeling the parameter of interest as a function of presence of a mental condition, fair or poor mental health, a chronic medical condition, and the following covariates: age, sex, race, educational level, total number of conditions (medical and mental), and US geographic region. The comparison group for each regression analysis is respondents without a mental condition, fair or poor mental health, or a chronic medical condition. OR indicates odds ratio; CI, confidence interval.

||The adjusted difference between this group and those without a mental condition, fair or poor mental health, or a chronic medical condition is significant at P < .05.

¶The adjusted difference between this group and those without a mental condition, fair or poor mental health, or a chronic medical condition is significant at P < .01.

spondents in any of the other 3 groups (those with mental symptoms, those with a chronic medical condition, and those with no medical or mental conditions).

PREDICTORS OF USE OF COMPLEMENTARY THERAPIES IN THOSE WITH SELF-REPORTED MENTAL CONDITIONS

In multivariate models, differing factors predicted use of any complementary medicine and explicit use of those therapies to treat a mental disorder. Demographic profiles differed between respondents using and not using any complementary therapies; users were more likely to be younger, to be women, to have a high school education, and to live in the West vs the South (**Table 4**).

In contrast, psychiatric diagnosis was the most salient factor differentiating respondents who did from those who did not use complementary therapy to treat a mental condition. Respondents with affective conditions and psychotic conditions were only 39% and 12%, respectively, as likely to use these treatments to treat their psychiatric conditions as were those with adjustment disorders.

COMMENT

We found that 9.8% of respondents reporting mental conditions had visited a practitioner of complementary medicine in the past year, and that about half of those

had made such a visit to treat a mental disorder. Report of a mental condition, but not of fair or poor mental health status or a chronic medical illness, predicted use of complementary treatments.

The study's findings support the notion that individuals with transient emotional distress may visit complementary providers to seek relief from those symptoms. In contrast, individuals with more chronic or serious conditions use these therapies at rates comparable to persons with medical conditions and the general population. This is consistent with the findings of Burstein et al¹¹ that the 3-month association between use of complementary therapies and mental symptoms was no longer statistically significant at the 1-year follow-up. For the most part, these therapies do not appear to be used to treat serious or persistent mental conditions.

Nevertheless, the findings suggest that many individuals reporting mental conditions use complementary therapies, whether for mental or other medical conditions. This use was particularly prevalent among younger, female, and more educated respondents. Previous studies^{1,3} have demonstrated that provider-based treatments represent only a half to a third of all complementary therapies that are frequently self-administered. Since this survey only asked respondents about visits to practitioners of complementary therapies rather than self-care, the estimate should be considered a lower bound on the overall rates of use of these therapies among individuals with mental conditions. Furthermore, more than

Table 4. Predictors of Complementary Therapy Use Among the 1803 Respondents With Mental Conditions: Logistic Regression Models

Variable	Any Complementary Therapy*		Complementary Therapy for a Mental Condition*	
	OR	95% CI	OR	95% CI
Diagnosis†				
Psychotic disorder (n = 40)	1.25	0.34-4.54	0.12‡	0.03-0.43
Affective disorder (n = 846)	1.06	0.66-1.70	0.39‡	0.21-0.71
Anxiety disorder (n = 405)	1.22	0.70-2.11	0.54	0.26-1.13
Substance use disorder (n = 72)	1.08	0.37-3.15	0.93	0.29-2.97
Other psychiatric disorder (n = 307)	0.86	0.45-1.65	0.44	0.10-2.03
Adjustment disorder (n = 394)§	1.00	1.00-1.00	1.00	...
Fair or poor mental health (n = 115)†	1.10	0.47-2.57	1.35	0.38-4.89
Chronic medical condition (n = 524)†	0.89	0.60-1.33	1.07	0.61-1.88
>3 Conditions (medical and mental) (n = 1348)	1.41	0.92-2.17	1.37	0.72-2.63
Demographic data				
Age ≤40 (n = 820)	1.75‡	1.20-2.56	1.09	0.63-1.89
Female sex (n = 969)	1.54	1.08-2.22	0.87	0.53-1.43
White race (n = 1470)	1.49	0.89-2.44	0.83	0.46-1.52
High school graduate (n = 1369)	1.89‡	1.15-3.13	0.88	0.51-1.54
Uninsured (n = 355)	0.67	0.40-1.12	0.63	0.33-1.19
Region				
Northeast (n = 351)	0.65	0.39-1.10	1.31	0.59-2.92
Midwest (n = 388)	0.84	0.50-1.42	1.04	0.45-2.42
South (n = 672)	0.60‡	0.38-0.96	1.28	0.62-2.61
West (n = 392)§	1.00	1.00-1.00	1.00	1.00-1.00

*Each column represents a separate logistic regression equation modeling the parameter of interest (either use of any complementary therapy or use of complementary therapy for a particular mental condition) as a function of the variables outlined in each row. OR indicates odds ratio; CI, confidence interval; and ellipses, data not applicable.

†Self-reported.

‡P < .05.

§Reference group.

||P < .01.

three fourths of respondents reporting mental conditions used these therapies without the knowledge or involvement of a physician.

The study's findings raise concerns about possible adverse interactions with prescription medications. Researchers^{24,25} have warned against the potential safety hazards of these treatments in general and, in particular, of potentially harmful interactions between herbal remedies and psychotropic medications.^{5-7,26} The relatively common use of herbal treatments in persons with adjustment disorders is particularly troubling, given the potential dangers and lack of demonstrated efficacy of those treatments for this class of conditions. These results speak to the potential importance of screening for use of these treatments as part of a "review of systems" in mental health settings.⁹

Several important limitations should be noted. First, mental conditions were obtained via self-report. This method of case identification tends to underestimate dis-

ease prevalence and to overrepresent individuals who have been treated for their illness.²⁷ It is possible, for instance, that individuals with some psychotic conditions might be particularly likely to deny the presence of a mental disorder, and eschew psychiatric treatment in favor of unconventional alternatives. It is, therefore, important for future work to examine use of complementary therapies using more complete symptom measures and diagnostic interviews than were available in the MEPS.

Second, it is possible that patterns of complementary self-care in persons with mental conditions differ from those seen in the practitioner-based treatments reported in this survey. It is thus necessary to study whether and how patterns of use for over-the-counter treatments compare with those of use of practitioner-based therapies among individuals with mental conditions.

Finally, the boundaries between the conventional and complementary systems of care are in flux. Use of the 12 therapies originally defined as "unconventional" increased during the first part of the 1990s.¹ At the same time, greater acceptance in the mainstream inevitably raises questions as to which of these therapies should be considered complementary. These factors make prevalence estimates of complementary therapies sensitive to change over time and to small variations in how the treatments are defined. Ultimately, effectiveness research is needed to replace the dichotomy between complementary and conventional therapies with the more important distinction between effective and ineffective treatments of all types.^{28,29}

This study's findings suggest that among individuals reporting mental conditions, use of practitioner-based complementary therapies is fairly common and usually occurs without the knowledge or input of a physician. Mental health providers should begin to educate themselves and their patients about the treatments' risks and benefits.

Accepted for publication March 24, 2000.

This study was supported in part by grant K08 MH01556 from the National Institute of Mental Health, Rockville, Md, and by the National Alliance for Research in Schizophrenia and Depression, Great Neck, NY.

Reprints: Benjamin G. Druss, MD, MPH, Department of Psychiatry, Yale University, 950 Campbell Ave, Mail Code 116A, West Haven, CT 06516 (benjamin.druss@yale.edu).

REFERENCES

- Eisenberg DM, Davis RB, Ettner SL, Appel S, Wilkey S, Van Rompay M, Kessler RC. Trends in complementary medicine use in the United States, 1990-1997: results of a follow-up national survey. *JAMA*. 1998;280:1569-1575.
- Druss BG, Rosenheck R. Association between use of unconventional therapies and conventional medical services. *JAMA*. 1999;282:651-656.
- Eisenberg DM, Kessler RC, Foster C, Norlock FE, Calkins DR, Delbanco TL. Unconventional medicine in the United States: prevalence, costs, and patterns of use. *N Engl J Med*. 1993;328:246-252.
- Fontanarosa PB, Lundberg GD. Complementary, unconventional, and integrative medicine. *Arch Gen Psychiatry*. 1998;55:82-83.
- Linde K, Ramirez G, Mulrow CD, Pauls A, Weidenhammer W, Melchart D. St John's wort for depression: an overview and meta-analysis of randomised clinical trials. *BMJ*. 1996;313:253-258.
- Ernst E, Rand JI, Stevinson C. Complementary therapies for depression: an overview. *Arch Gen Psychiatry*. 1998;55:1026-1032.

7. Wong AH, Smith M, Boon HS. Herbal remedies in psychiatric practice. *Arch Gen Psychiatry*. 1998;55:1033-1044.
8. Knaut PR, Connor KM, Weisler RH, Churchill LE, Davidson JR. Alternative therapy use by psychiatric outpatients. *J Nerv Ment Dis*. 1999;187:692-695.
9. Yager J, Siegfried SL, DiMatteo TL. Use of alternative remedies by psychiatric patients: illustrative vignettes and a discussion of the issues. *Am J Psychiatry*. 1999;156:1432-1438.
10. Jacobs J, Crothers D. Who sees homeopaths? *Br Homeopath J*. 1991;80:57-58.
11. Burstein HJ, Gelber S, Guadagnoli E, Weeks JC. Use of alternative medicine by women with early-stage breast cancer. *N Engl J Med*. 1999;340:1733-1739.
12. Holland JC. Use of alternative medicine: a marker for distress [editorial]? *N Engl J Med*. 1999;340:1758-1759.
13. Ernst E. Use of alternative medicine by women with breast cancer [letter]. *N Engl J Med*. 1999;341:1155.
14. Knobf MT, Pasacreta J. Use of alternative medicine by women with breast cancer. *N Engl J Med*. 1999;341:1156-1157.
15. Coyne JC, Calzone K, Weber BL. Use of alternative medicine by women with breast cancer. *N Engl J Med*. 1999;341:1155.
16. Druss BG, Rohrbaugh R, Kosten T, Hoff R, Rosenheck RA. Use of alternative medicine in major depression. *Psychiatr Serv*. 1998;49:1397.
17. Agency for Health Care Policy and Research. *MEPS HC-003: 1996 Panel Population Characteristics and Utilization Data for 1996*. Rockville Md: Agency for Health Care Policy and Research; 1997. AHCPR publication 98-DP12.
18. World Health Organization. *International Classification of Diseases, Ninth Revision (ICD-9)*. Geneva, Switzerland: World Health Organization; 1977.
19. Hoff RA, Bruce ML, Kasl SV, Jacobs SC. Subjective ratings of emotional health as a risk factor for major depression in a community sample. *Br J Psychiatry*. 1997;170:167-172.
20. Stewart AL, Greenfield S, Hays RD, Wells K, Rogers WH, Berry SD, McGlynn EA, Ware JE Jr. Functional status and well-being of patients with chronic conditions: results from the Medical Outcomes Study. *JAMA*. 1989;262:907-913.
21. Paramore LC. Use of alternative therapies: estimates from the 1994 Robert Wood Johnson Foundation National Access to Care Survey. *J Pain Symptom Manage*. 1997;13:83-89.
22. Astin JA. Why patients use alternative medicine: results of a national survey. *JAMA*. 1998;279:1548-1553.
23. Melfi C, Holleman E, Arthur D, Katz B. Selecting a patient characteristics index for the prediction of medical outcomes using administrative claims data. *J Clin Epidemiol*. 1995;48:917-926.
24. Jonas WB, Levin JS. *Essentials of Complementary and Alternative Medicine*. Philadelphia, Pa: Lippincott Williams & Wilkins; 1999.
25. Angell M, Kassirer JP. Alternative medicine: the risks of untested and unregulated remedies. *N Engl J Med*. 1998;339:839-841.
26. Ernst E. Second thoughts about safety of St John's wort. *Lancet*. 1999;354:2014-2016.
27. Simon GE, VonKorff M. Recall of psychiatric history in cross-sectional surveys: implications for epidemiologic research. *Epidemiol Rev*. 1995;17:221-227.
28. Fontanarosa PB, Lundberg GD. Alternative medicine meets science. *JAMA*. 1998;280:1618-1619.
29. Levin JS, Glass TA, Kushi LH, Schuck JR, Steele L, Jonas WB. Quantitative methods in research on complementary and alternative medicine: a methodological manifesto: NIH Office of Alternative Medicine. *Med Care*. 1997;35:1079-1094.