Use of Herbal Medicine in Primary Care Patients With Mood and Anxiety Disorders

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Studies have documented the increasing use of complementary and alternative medicine over the last decade, especially in distressed individuals with symptoms of anxiety, depression, and pain. Herbal medicine is a specific form of complementary and alternative medicine often used by individuals seeing traditional medical practitioners and, hence, has the potential to interact with other medically prescribed treatments. The study examined the use of herbal medicine in a group of primary care patients with symptoms of anxiety and depression. The rate of use of herbal medicines was 11%, and use was selectively associated with a diagnosis of major depression, higher education, and a lower burden of medical illness. Use was not associated with receipt of pharmacotherapy or psychotherapy for anxiety or depression. (Psychosomatics 2005; 46:117–122)

Use of complementary and alternative medicine in all of its varieties, from herbal remedies to nonmedicinal therapies, has increased over the last decade from 34% to 42% of the overall U.S. population.[1] A variety of studies suggest that this use is greater in emotionally distressed individuals with symptoms or diagnoses of anxiety and depression. Use has been shown to be twice as great in individuals in the community reporting depression and anxiety than in those reporting any other problem, except for back and neck pain.[1] Other studies have shown that major depression predicts the use of dietary supplements in community samples,[2] that there are high rates of emotional distress in women with breast cancer who use complementary and alternative medicine,[3] that there are high rates of axis I psychiatric illness in primary care patients attending clinics specializing in homeopathic treatments,[4] and that there is almost double the rate of use of complementary and alternative medicine in community subjects meeting criteria for one or more mental disorders versus those who do not.[5]

Whether specific mood and anxiety disorders are more commonly linked with the use of complementary and alternative medicine remains unclear. Two large-scale community surveys[5,6] have noted a specific association between both panic disorder and major depression and the use of complementary and alternative medicine. In the only two studies of the use of complementary and alternative medicine in outpatient psychiatric populations, one listed the diagnoses generally as depression and anxiety disorders,[7] whereas the other did not provide any psychiatric diagnoses.[8] Neither of these studies included a control population without psychiatric illness for calculation of relative probabilities of use among the different disorders.

Herbal medicines are one type of complementary and

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alternative medicine whose use has dramatically increased over the past decade, growing from 2.5% to 12% in community surveys.[1] The most recent figure from a 2002 community survey is 14%.[9] Since studies have noted that the use of complementary and alternative medicine is much more often "complementary" than "alternative," with complementary and alternative medicine users just as likely[5]–or even more likely[6]–to be receiving standard conventional medical care, herbal medicines represent the form of complementary and alternative medicine that is most likely to be associated with adverse events (i.e., these medications can adversely interact with other medications the patient might be taking from their conventional practitioner). Indeed, there are ample data to suggest that many of these medications can cause significant drug-drug interactions.[10] However, there is limited information available on the prevalence, type, or predictors of the use of herbal medicines in individuals actually receiving care in medical and psychiatric settings. The two studies of psychiatric outpatients cited earlier reported rates of use of herbal medicines of 24%[7] and 14.5%.[8] The one community survey that identified patients with panic attacks and severe depression[6] reported rates of use of herbal medicine of 3.3% and 4.3%. However, no studies have carefully examined the rate, type, and predictors of the use of herbal medicine in primary care patients with psychiatric illness, despite the fact that most treatment for mental disorders takes place in the primary care setting.[11]

In this study, part of a survey of the clinical, functional and service use characteristics of anxiety disorders in primary care, we examined the use of six herbal medicine remedies known to commonly target psychiatric symptoms (St. John's wort, kava kava, melatonin, gingko biloba, ginseng, and valerian root) in a large cohort of primary care patients who screened positive for one or more anxiety disorders and also received psychiatric diagnostic interviews. Because of the survey methods, many patients met criteria for no disorder or for major depressive disorder only, allowing us to explore the use of herbal medicine in a broad range of mood and anxiety disorders relative to patients without disorders. We sought to determine the prevalence and types of use in distressed primary care patients seen in this general care-seeking context and whether herbal medicine users differ from nonusers in demographic characteristics, the presence or type of mood or anxiety disorder diagnosis, the degree of diagnosis-related disability, or the use of psychotropic medications or psychotherapy. We hypothesized that the use of herbal medicines would be greater among those with a mood or anxiety disorder diagnosis in those seeking and accepting treatment through more conventional means (e.g., medication or psychotherapy) (based on the growing use of complementary and alternative medicines in those also using conventional treatments).

METHOD

Setting and Subjects

Data are from the baseline phase of the Collaborative Care for Anxiety and Panic Study, a randomized, controlled trial of pharmacotherapy and cognitive behavior therapy for patients with panic disorder in primary care.[12] The settings for this study were university-affiliated primary care clinics in Seattle, San Diego, and Los Angeles. The Seattle and Los Angeles clinics were internal medicine clinics, whereas San Diego also included family medicine clinics. Clinics were predominantly staffed by board-certified physicians with a minority of care (between 15% and 30%) delivered by residents in training under attending supervision. Insurance was a mix of private (50%–80%) and public.

Eligible subjects were patients at these clinics who 1) were between 18 and 70 years old, 2) were English speaking, and 3) had access to a telephone. Subjects were recruited in clinic waiting rooms on high-volume days with a brief self-report questionnaire that requested information about demographic characteristics, chronic medical illness, and anxiety and depressive symptoms. The latter included validated screening questions for panic disorder, social phobia, posttraumatic stress disorder (PTSD), and generalized anxiety disorder; positive predictive values for these instruments range from approximately 0.6 to 0.8.[13,14]

A total of 8,315 patients were screened in the waiting room. Those who screened positive for any anxiety disorder, and a random sample of subjects screening positive for no disorder, were invited to participate in a diagnostic telephone interview intended to confirm DSM-IV diagnoses and provide additional information about illness and care characteristics; the participation rate in the diagnostic interview was 60.7% (801 of 1,319 eligible). The patients (N = 682) who met DSM-IV criteria for panic disorder, social phobia, PTSD, generalized anxiety disorder, major depressive disorder or were among the random sample of those with no psychiatric disorder are the subjects of this report. The study was approved by the institutional review boards of all three universities (the University of Washing-

ton, the University of California–Los Angeles, and the University of California–San Diego).

Diagnostic Interview and Clinical Assessments

The diagnostic interview was conducted over the telephone with modules from the telephone-validated World Health Organization's 12-Month Composite International Diagnostic Interview[15] that we modified (with several additional prompts) to enhance its ability to distinguish between panic and social anxiety disorders.[16] Diagnostic modules for panic disorder, social phobia, PTSD, and major depression were administered to all subjects; the generalized anxiety disorder module was added midway through the study and was administered to only a subset (N = 130) of subjects.

The Composite International Diagnostic Interview was followed by a more detailed set of questions about symptoms, comorbid conditions, disability, health-related quality of life, and use of services, including medications, both prescribed and herbal. Medications and herbal remedies were determined with patient reports of the name and daily dose of each medication or herbal preparation they used in the previous 3 months. The patients were encouraged to read directly from the label on the bottle rather than recalling from memory. The following measures were also included in this analysis: functional status, with five items selected from the larger World Health Organization Disability Scale[17]; mental and physical health-related quality of life, with the global physical and mental health scales of the short-form 12[18]; severity of depression, with the Center for Epidemiologic Studies Depression Scale[19]; and neuroticism, with five previously validated items from the NEO Personality Inventory.[20] To explore how use of herbal medications might relate to quality of care that the patient was receiving for anxiety and depression, we also included measures of the quality of anti-anxiety pharmacotherapy and whether the patient was receiving any psychotherapy. Pharmacotherapy was considered adequate when subjects reported taking a guideline-concordant anti-anxiety medication at a sufficient dose for at least 6 weeks with several previous consensus panel statements.[21–23]

Statistical Analysis

We used descriptive statistics to characterize the type and prevalence of use of herbal remedies across the study group. Two groups were formed: those who used any herbal medicines and those who did not. Chi-square tests with corrections for continuity and t tests were used to examine group differences among herbal users and nonusers in categorical and continuous variables, respectively.

We used logistic regression analysis to estimate patterns of association between the use of herbals in the last 3 months and respondent demographic characteristics, specific diagnoses, comorbid illness attributes (i.e., chronic physical illness, major depression), and study site. Explanatory variables included patient demographic characteristics, depression, physical health status, and study site. Patient demographic variables examined were sex, education (high school or less versus more), age, and income (below the poverty line versus at or above the poverty line). Site was dichotomized as Seattle versus Southern California because we detected, with chi-square tests, significant ($p<0.05$) differences in race/ethnicity (Caucasian versus other) and income in the Seattle versus either of the Southern California sites. With survey questions on the prevalence of chronic medical conditions (asthma, arthritis, lung disease, diabetes, hypertension, advanced coronary artery disease, heart failure, other heart disease, neurological conditions, gastrointestinal problems, eye problems, or migraines), we constructed a count of the number of reported conditions and, based on their distribution in this study group, dichotomized subjects as having zero or one versus two or more chronic medical conditions. Variables with univariate significant differences at $p<0.05$ were tested in the logistic model. Only variables that were statistically significant were retained in the final logistic model.

RESULTS

The overall prevalence of the use of herbal medicine in this nonrandom primary care study group, weighted toward those screening positive for anxiety, was 11% (75 of 682 primary care patients). The use of herbal medicine in the four groups of patients, divided according to the presence or absence of a mood and anxiety disorder, is illustrated in Figure 1. As shown, use was nonsignificantly higher in the patients with depression (with or without a comorbid anxiety disorder) than in those with an anxiety disorder only or in those with no diagnosis. Among the primary care patients using herbal medicines (N = 75), the rank order of herbals used (patients could use more than one type of herb) was as follows: St. John's wort = 53%, ginseng = 34%, ginkgo biloba = 29%, kava kava = 16%, melatonin = 8%, and valerian root = 3%.

Univariate descriptive statistics comparing herbal users and nonusers across the range of demographic, diagnostic, symptom severity, and quality-of-care variables

are listed in Table 1. As shown, use of herbal medicines was associated with more education, lower burden of chronic medical illness, a diagnosis of major depression, and higher neuroticism scores. Of note, there was no relationship between whether a patient was receiving psychotropic medication, adequate pharmacotherapy, or psychotherapy for their mood or anxiety disorder and whether or not they were also using herbal medications. Of importance, 36% of the users were taking a psychotropic drug that might interact with their herbal medication, although only about half of that group was known to be taking medication at a sufficient dose for at least 6 weeks.

The final logistic regression model showed that significant predictors of the use of herbal medication were a depression diagnosis (odds ratio = 2.2, 95% CI [confidence interval] = 1.4–3.7, $p = 0.002$), more education (odds ratio = 2.4, 95% CI = 1.1–5.1, $p < 0.03$), and a lower burden of medical illness (odds ratio = 2.2, 95% CI = 1.2–3.9, $p = 0.01$).

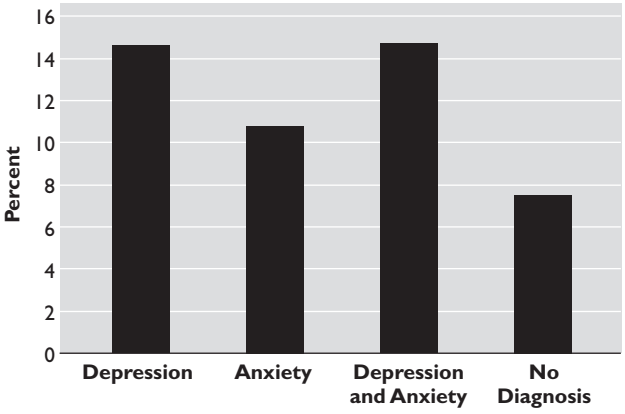
DISCUSSION

This survey documents a rate of use of herbal medicines (11%) in three West Coast primary care settings that is almost identical to the rate of use reported in community surveys (12%). This is of some interest since this study group was not representative of primary care patients in general but, rather, of primary care patients with anxious symptoms, many of whom had an anxiety disorder diagnosis. The higher rate of use of herbal medicines in primary care patients with higher neuroticism scores and in those with a diagnosis of major depression is consistent with community surveys showing that the rates of use are higher in emotionally distressed subjects.[1,5] On the other hand, use of herbal medicines was not higher in those diagnosed with an anxiety disorder only. The reasons for a specific association between herbal medicines and depression but not an anxiety diagnosis are unclear. The possibilities include the fact that St. John's wort, the most frequently used remedy, is marketed as an antidepressant but not as an anxiolytic, that anxious patients are more fearful of somatic symptoms and side effects and are hence less likely to use medicines, or that anxious patients might be more aware of–or likely to use–nonmedicinal forms of treatment (although this was not observed in a recent analysis of our study group).[24]

In contrast to the robust association of the use of herbal medicine with emotional and psychological distress and disorders, the only study to examine an association between chronic medical disease burden and complementary and alternative medicine, a community survey,[5] found that use was greater in more medically ill patients, in contrast to our finding. This study did not further identify the type of complementary and alternative medicine used. Our finding that lower medical disease burden was associated with greater likelihood of using herbal medicines was unexpected and is difficult to explain. It may indicate that persons who are medically more ill and likely to be taking more prescription medications (although the rate of use of nonpsychotropics was not recorded in this study group) may be less likely to use additional "medicine" even if they would be more likely to use "nonherbal" forms of complementary and alternative medicine. Perhaps they judge the severity of their medical problems to warrant "real medicine," whereas less medically ill patients are more likely to prefer "milder" alternatives. It is also possible that in more medically ill patients, the illness becomes a greater source of preoccupation and/or attribution for mental health problems so that less motivation exists for improving mental health with herbal remedies.

The association of the use of herbal medicine with higher education is also consistent with some[1,5]–but not all[6]–previous studies showing that more educated individuals are more likely to use alternative medicine. There were no differences in the proportion of subjects taking psychotropic medications between herbal and nonherbal medicine users. Additionally, herbal use was not associated with a deficiency in quality pharmacotherapy for anxiety or the use of psychotherapy. Nonetheless, it remains to be seen whether herbal use is associated with less stable pharma-

FIGURE 1. Use of Herbal Medicines in Primary Care Patients, by Psychiatric Diagnosis[a]



[a] $\chi^2 = 7.16$, df = 3, $p < 0.07$.

cotherapy (we measured use over the previous 3 months only) or with low satisfaction with pharmacotherapy.

In conclusion, in patients seeking care in a primary care clinic setting, the use of herbal medication was specifically associated with a diagnosis of major depression, as well as a lower burden of medical illness and a higher education. The rate of use is fairly low in this group (11%), lower than the rate reported in two prior surveys of psychiatric outpatients, and not different from that observed in community surveys. Nonetheless, the use of herbal medicine that was concomitant with anti-anxiety pharmacotherapy was noteworthy, given that approximately half of this primary care sample was using psychotropic medications. Even though only a handful of interactions have been reported thus far, the fact that the range of effects that herbal remedies have on drug metabolic enzymes is still poorly appreciated[10] underscores the need for clinicians treating anxious and depressed patients to ask about the use of herbal and other complementary and alternative medicines.

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TABLE 1. Demographic and Clinical Characteristics of Nonusers and Users of Herbal Medicines

	Total Study Group (N = 682)		Nonusers of Herbal Medicines (N = 607)		Users of Herbal Medicines (N = 75)		Analysis	
Variable	**N**	**%**	**N**	**%**	**N**	**%**	**χ^2 (df = 1)**	**p**
Seattle, Wash., site	318	46.6	290	47.8	28	37.3	2.52	0.11
Female	421	61.7	371	61.1	50	66.7	0.65	0.42
White	448	65.7	399	65.7	49	65.3	0.00	1.00
>12 years education	534	78.4	467	77.1	67	89.3	5.23	0.02
Below the poverty threshold	152	22.4	140	23.2	12	16.2	1.46	0.23
Married	216	31.7	198	32.6	18	24.0	1.19	0.17
Age>50	194	28.5	173	28.6	21	28.0	0.01	1.00
Two or more medical illnesses	241	35.3	224	36.9	17	22.7	5.31	0.02
Diagnosis								
Any anxiety disorder	366	53.7	318	52.4	48	64.0	3.17	0.08
Any depression	265	38.9	226	37.3	39	52.0	5.47	0.02
No diagnosis	268	39.4	248	40.9	20	26.7	5.06	0.02
Depression only	48	7.0	41	6.8	7	9.3	0.34	0.56
Anxiety only	148	21.7	132	21.8	16	21.3	0.00	1.00
Depression and anxiety disorders	217	31.9	185	30.5	32	42.7	3.99	0.05
Panic disorder	255	37.7	225	37.1	30	40.0	0.14	0.71
Social phobia	179	26.3	155	25.6	24	32.0	1.09	0.30
Posttraumatic stress disorder	122	17.9	109	18.0	13	17.3	0.00	1.00
Generalized anxiety disorder (N = 280)	77	27.5	67	26.0	10	45.5	2.94	0.09
Any psychotropic medication	293	43.0	266	43.8	27	36.0	1.36	0.24
Any appropriate effective anxiolytic ≥6 weeks	119	17.5	106	17.5	13	17.3	0.00	1.00
Any counseling by mental health practitioner in past 3 months	141	20.7	125	20.6	116	21.3	0.00	1.00
	Mean	**SD**	**Mean**	**SD**	**Mean**	**SD**	**t**	**p**
Age (years)	41.7	12.4	41.9	12.4	40.4	12.9	0.96[a]	0.34
Center for Epidemiologic Studies Depression Scale score	19.8	15.2	19.6	15.2	21.7	14.9	1.16[b]	0.24
NEO Personality Inventory score	13.6	6.5	13.4	6.4	15.2	6.8	2.29[b]	0.02
Short-Form 12 physical component score	45.0	12.3	44.9	12.4	45.1	11.8	0.11[c]	0.91
Short-Form 12 mental health component score	43.0	12.7	43.3	12.8	41.0	12.0	1.46[c]	0.14
World Health Organization Disability score	10.1	4.6	10.0	4.6	10.8	4.6	1.38[a]	0.14
Anxiety Status Inventory score	33.5	12.4	33.4	12.5	34.2	11.5	0.32[d]	0.75

[a] df = 678.
[b] df = 680.
[c] df = 679.
[d] df = 254.

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