# Is Naturopathy as Effective as Conventional Therapy for Treatment of Menopausal Symptoms?

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# ABSTRACT

**Background:** Although the use of alternative medicine in the United States is increasing, no published studies have documented the effectiveness of naturopathy for treatment of menopausal symptoms compared to women receiving conventional therapy in the clinical setting.

**Objective:** To compare naturopathic therapy with conventional medical therapy for treatment of selected menopausal symptoms.

Design: A retrospective cohort study, using abstracted data from medical charts.

**Setting:** One natural medicine and six conventional medical clinics at Community Health Centers of King County, Washington, from November 1, 1996, through July 31, 1998.

**Patients:** Women aged 40 years of age or more with a diagnosis of menopausal symptoms documented by a naturopathic or conventional physician.

Main outcome measures: Improvement in selected menopausal symptoms.

**Results:** In univariate analyses, patients treated with naturopathy for menopausal symptoms reported higher monthly incomes (\$1848.00 versus \$853.60), were less likely to be smokers (11.4% versus 41.9%), exercised more frequently, and reported higher frequencies of decreased energy (41.8% versus 24.4%), insomnia (57.0% versus 33.1%), and hot flashes (69.6% versus 55.6%) at baseline than those who received conventional treatment. In multivariate analyses, patients treated with naturopathy were approximately seven times more likely than conventionally treated patients to report improvement for insomnia (odds ratio [OR], 6.77; 95% confidence interval [CI], 1.71, 26.63) and decreased energy (OR, 6.55; 95% CI, 0.96, 44.74). Naturopathy patients reported improvement for anxiety (OR, 1.27; 95% CI, 0.63, 2.56), hot flashes (OR, 1.40; 95% CI, 0.68, 2.88), menstrual changes (OR, 0.98; 95% CI, 0.43, 2.24), and vaginal dryness (OR, 0.91; 95% CI, 0.21, 3.96) about as frequently as patients who were treated conventionally.

**Conclusions**: Naturopathy appears to be an effective alternative for relief of specific menopausal symptoms compared to conventional therapy.

## **INTRODUCTION**

Hormone replacement therapy (HRT) is the most common and most effective pharmacotherapy for treating patients with menopausal and perimenopausal symptoms (Belchetz, 1994). However, postmenopausal bleeding related to HRT has been reported to result in discontinuation of use in as many as 70% of women who initiate therapy (Ravnikar,

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1987). Contraindications to usage (e.g., such as uterine or vaginal bleeding [Spencer et al., 1997], coagulation defects, histories of endometrial cancer, or deep venous thrombosis [Loose-Mitchell and Stancel, 2001]), and epidemiologic evidence suggesting an association between estrogen therapy and breast cancer (Colditz et al., 1990, 1995; Steinberg et al., 1991; Stevenson, 1996), are among the reasons that women pursue alternative therapies for symptomatic relief (Follingstad, 1978).

Naturopathic medicine, a comprehensive system of health care that integrates traditional natural therapeutics with modern medical diagnostics and standards of care (National Institutes of Health, 1997) uses several modalities (e.g., dietary manipulation, exercise, vitamins, homeopathy, nutritional supplementation, acupuncture (National Institutes of Health, 1997), relaxation techniques (Irvin et al., 1996), lifestyle changes, and naturopathic pharmacotherapy) for treatment of menopausal symptoms. Naturopathic pharmacotherapy primarily relies on the use of phytoestrogens, naturally occurring sterols of plant origin exhibiting weekly estrogenic and antiestrogenic properties, rather than conventional HRT, which is commonly derived from the urine of pregnant mares (conjugated equine estrogens) or synthesized in a laboratory (ethinyl estradiol). Phytoestrogens include the isoflavones genistein and daidzein, which are highly concentrated in foods such as soy and tofu; and the lignans that are found in whole-grain cereals, seeds, and nuts and are found in phytomedicinals (e.g., black cohosh, dong quai, ginseng, licorice, wild yam, medicago, and chasteberry fruit [Foster, 1993; Seidl et al., 1998; Soffa, 1996). Published studies support the efficacy of dietary soy supplementation, menopausal isoflavone-containing food products and dietary soy bars, and phytomedicinals to reduce the frequency of hot flashes in women (Albertazzi et al., 1998; Aldercreutz et al., 1997; Anderson et al., 1995; Anonymous, 1996; Eden et al., 1997a, 1997b; Liske, 1998; Murkies et al., 1995; Nagata et al., 1997; Tham et al., 1998; Wilcox, 1997; Woods et al., 1996). Despite these studies of the effectiveness of a single therapeutic component of naturopathy, none has evaluated the effectiveness of using an aggregate system of naturopathy for treating menopausal symptoms, especially when used in the clinical setting.

In this study we estimated changes in menopausal symptoms among women treated with the aggregate system of naturopathy compared to women treated conventionally. Because naturopathy encompasses several therapeutic modalities, we also sought to describe the diversity of therapeutic regimens among users of naturopathy.

## MATERIALS AND METHODS

# Setting

In this retrospective cohort study, we compared patients treated for menopausal symptoms at the naturopathy clinic of Community Health Centers of King County (CHCKC), Washington, to a stratified random sample of patients treated at the six conventional clinics of CHCKC from November 1996 through July 1998.

Each clinic of CHCKC provides comprehensive family medical care and dental care and serves as a dispensary of CHCKC formulary medications. Services offered at the naturopathy clinic include acupuncture and naturopathy, as well as conventional family medicine. Physicians who provide conventional care are general or family practitioners. Naturopathic providers are licensed naturopaths in the state of Washington. During the study period, three naturopaths rendered service at the naturopathic clinic. At each of the six conventional clinics, three physicians provided care.

Both insured and uninsured patients have equal access to care at the naturopathy and conventional clinics at CHCKC. Patient fees at CHCKC come primarily from Medicaid and from out-of-pocket payments made by patients according to a sliding fee schedule, which provides discounts according to family size and income. Approximately 46% of CHCKC's patients are uninsured and have family incomes less than 200% of the federal poverty line. Another 40% of CHCKC's patients have Medicaid coverage.

# Study subjects

The study was restricted to female patients aged 40 years of age or older with a documented diagnosis by a naturopathic or conventional physician of menopause, perimenopause, perimenopausal, or menopausal symptoms. Because of the intent to evaluate symptom changes over time, patients with only one visit for menopause-related symptoms were excluded from the study.

Eligible patients were identified by two methods by using the CHCKC billing database. First, patients assigned the diagnosis of menopause or menopausal symptoms with International Statistical Classification of Diseases, 9th Revision Clinical Modifications (ICD-9-CM, 1991) diagnostic codes 627.0–627.9, "menopausal and postmenopausal disorders," were identified. Second, using the MarketScan Encounter Database<sup>™</sup> (Medstat, Ann Arbor, MI) of 1995

outpatient claims, the ICD-9-CM codes most commonly associated with ICD-9-CM code 627 were also identified to capture additional patients with a documentation of menopausal symptoms who were not primarily assigned ICD-9-CM code 627. The MarketScan Database identified the ICD-9-CM codes most frequently associated with menopausal and postmenopausal symptoms (Table 1). Patients at CHCKC with ICD-9-CM codes listed in Table 1 were then identified and their charts were screened for study eligibility. The ICD-9-CM coding methods were identical for naturopathic and conventional therapies. The protocol was approved by the Centers for Disease Control (CDC) institutional review board and CHCKC executive council.

This case finding process identified 238 potentially eligible naturopathic patients from November 1996, the month in which the clinic first opened, through July 1998; 79 of these met the eligibility criteria and were included in the study; 159 naturopathic patients of those identified as eligible by the case-finding method

TABLE 1. ICD-9-CM CODES ASSOCIATED WITH MENOPAUSAL AND POSTMENOPAUSAL SYMPTOMS USED IN CASE FINDING, COMMUNITY HEALTH CENTERS OF KING COUNTY, 1997–1998

256	Ovarian dysfunction
272	Lipid disorders
610	Benign mammary dysplasias
611	Other breast disorders
614	Inflammatory diseases of female pelvic organs
615	Inflammatory diseases of female pelvic organs
616	Inflammatory diseases of female pelvic organs
618	Genital prolapse
620	Noninflammatory disorders of ovary, fallopian tube, and broad ligament
621	Disorders of uterus not elsewhere classified
622	Noninflammatory disorders of the cervix
623	Noninflammatory disorders of the vagina
624	Noninflammatory disorders of the vulva and perineum
625	Pain and other symptoms associated with female genital organs
626	Disorders of menstruation and other abnormal bleeding from female genital tract
627.0	Menopausal and postmenopausal disorders
	Premenopausal menorrhagia: excessive bleeding associated with onset of menopause
	Menorrhagia: climacteric, menopausal, preclimacteric
627.1	Postmenopausal bleeding
627.2	Menopausal or female climacteric states, symptoms, such as flushing, sleeplessness, headache, lack of concentration, associated with menopause
627.3	Postmenopausal atrophic vaginitis-Senile (atrophic) vaginitis
627.4	States associated with artificial menopause
627.8	Other specified menopausal and postmenopausal disorders
	Excludes: premature menopause not otherwise specified (256.3)
627.9	Unspecified menopausal and postmenopausal disorder
628.0	Associated with anovulation, anovulatory cycle

ICD-9-CM, International Classification of Diseases, 9th Revision, Clinical Modifications, 1991.

had less than two visits documented in their charts or were younger than 40 years of age and were therefore determined to be ineligible for further study; 67 of the 79 naturopathic patients included in the study were primarily assigned ICD-9-CM code 627. To detect a 20% difference in symptom change between treatment groups, we needed 160 conventional patients to yield a power of 80% and a Type I error of 5%. A total of 513 patients, stratified by the six conventional clinics, were identified and their charts were randomly screened until 160 eligible patients were identified for inclusion. Eligibility criteria for the conventional therapy group were identical to those in the naturopathy group.

## Exposure categories

Naturopathic therapy was defined as an office consultation with a licensed naturopathic physician, provided at the naturopathic clinic of CHCKC. The naturopathic system of care, similar to conventional medicine, varies widely among providers in duration of office visits, and varieties of pharmacotherapeutic and natural medicine treatment options. To evaluate effectiveness in the clinical setting, we chose to compare the comprehensive, aggregate system of naturopathic care with conventional therapy, rather than comparison of specific hormonal therapy regimens. Patients treated with HRT who were seen by the naturopath were considered as exposed to naturopathy if service was provided solely by the licensed naturopathic provider during the study period. Conventional therapy was defined as an office consultation solely with a licensed physician during the study period, provided in one of the six conventional clinics of CHCKC.

# Data collection

Data abstraction forms were developed on the basis of a preliminary screen of 40 charts to determine available information about reported symptoms, as documented by providers. Abstractions of medical charts were performed onsite at each of the seven clinics of CHCKC. Abstractors were trained by the principal investigator and were provided with abstraction guidelines to ensure standardized data collection. Abstractors received ongoing feedback during a 1-week training period. The first 12.5% (30) abstraction forms were reabstracted and reviewed to provide a basis for further training. To minimize bias, the abstractors were not informed of the study question. Quality control was further assured by comparing 10% of abstraction forms to the computerized data file for accuracy. The keystroke error rate was 0.017%. Data files were edited and checked for errors by using range and internal consistency checks.

#### Outcomes

Data recorded from charts included baseline demographic characteristics, past medical histories, health behaviors, recorded symptoms, patient weight at each visit, and dose and duration of selected naturopathic and conventional treatments.

The primary outcomes of interest in this analysis were the overall change in any of the seven menopausal symptoms for each patient during the study period. The symptoms were: anxiety, decreased energy, hot flashes, insomnia, menstrual changes, urinary complaints, and vaginal dryness. Symptom change for each reported patient visit during the study period was noted as: "new onset," "improved," "worse," "resolved," or "unchanged," on the basis of provider documentation in chart progress notes. The method of ascertainment of symptom change did not differ by type or location of clinic.

For each menopausal symptom reported, the aggregate system of naturopathy was compared to the aggregate system of conventional care, regardless of the specific therapy used. Because individual menopausal and postmenopausal symptoms reported by patients may not be independent, may be agerelated, or may differ in severity, the study was designed to evaluate individual symptoms rather than a summary measure of overall change.

In a separate analysis, we evaluated whether differences in specific hormonal therapy regimens between the two systems of care were associated with differences in symptom improvement. Thus, we compared the effects of phytoestrogens to conventional estrogens and naturopathic progestogens with conventional progestogens.

#### Statistical analysis

Baseline characteristics of study participants, including past medical history, health behaviors, menopausal symptoms, and treatment data were described by means, standard errors, and ranges of values for continuous variables (e.g., age and income), and by frequencies and percentiles for categorical variables (e.g., race). We decided a priori that two variables—age at baseline visit and weight-would be retained in the multivariate models because of their potential to confound the outcome-exposure relationship. These covariates as well as covariates with cell sizes larger than 5, identified as significant in univariate analyses with a *p* value  $\leq$ 0.05, were included in multivariate regression models.

To test for differences in baseline characteristics and therapies between treatment groups, we used a two-tailed *t* test for continuous data and a  $\chi^2$  test or Fisher's exact test for categorical data. Multivariate analyses were performed by using Generalized Estimating Equations (GEE) to evaluate changes in menopausal symptoms. Statistical computations were performed by using SAS software (SAS Institute Inc., Cary, NC).

For each reported symptom, a binary response was used in the analysis, coded 1 for symptoms reported improved or resolved and 0 for symptoms reported no change or worse. For example, a woman who visited her doctor three times during the study period, reported recent onset of insomnia at her first visit. The binary code assigned to that visit was 0. She returned the next month to her physician and reported an improvement in her sleep disturbance; Her subsequent visit was coded as 1. In follow-up the next month, she reported once again that she was having trouble sleeping and it was worse; she was assigned a binary code of 0 for the final visit. For each symptom, all binary responses, representing all office visits for an individual, were included in the analysis. Individuals with less than two office visits for a specific symptom were excluded from the analysis for that symptom.

A statistical model was derived to best characterize the probability of improvement in a specific menopausal symptom while controlling for other potential risk factors, autocorrelation, and heterogeneity of variance. Based on the assumption of constant correlation within clusters of repeated measures of menopausal symptoms, an exchangeable correlation working structure was used. The exposure variables were treated as independent variables in regression models by using the PROC GENMOD procedure for repeated measures in SAS (SAS Institute, Cary, NC). To derive a reduced model that best characterized the probability of symptom improvement, a sequential backward elimination procedure was performed. Confounding variables were retained in the model if the  $\beta$  coefficient for exposure was changed by 10% or more.

## RESULTS

Patients receiving naturopathic treatment differed at baseline from those receiving conventional treatment (Table 2). They had higher incomes, were less frequently smokers, were more likely to participate in a regular exercise program, and reported higher frequencies of decreased energy, insomnia, and hot flashes. The majority of patients receiving naturopathy were treated with black cohosh and were dispensed a single or multiple vitamin supplement. The majority of patients receiving conventional treatment received conjugated or esterified estrogens (Table 3). Of patients who were treated with naturopathic methods, one third received concurrent HRT. Patients who attended conventional clinics were more likely to receive antidepressant and antihypertensive therapy.

In an unadjusted analysis, patients treated with naturopathy were more likely to experience an improvement in energy level and insomnia than conventionally treated patients (Table 4). When adjusted for age, weight, smoking status, regular exercise program, monthly income, and antihypertensive therapy, by repeated measures analysis, patients treated with naturopathy were about seven times more likely to experience an improvement in energy level and insomnia than conventionally treated

Patient characteristics	Naturopathic patients n = 79 (%) <sup>a</sup>	Conventional patients n = 160 (%)	p value <sup>b</sup>
$A_{\text{reg}}$ (mean + SE)	$51.7 \pm 0.75$	$50.7 \pm 0.55$	0.2920
Monthly income (mean $\pm$ SE)	$1848 \pm 209$	$853.6 \pm 54$	< 0.272
Office visits to provider (mean $\pm$ SE)	$59 \pm 0.60$	$63 \pm 032$	0.515
Race	0.0 = 0.00	0.0 = 0.02	0.739
White	58 (73.4)	111 (69.3)	0.767
Hispanic	6 (7.6)	10 (6.3)	
Black	7 (8.9)	9 (5.6)	
Asian	6 (7.6)	27 (16.9)	
Lifestyle/risk factors	с (110)		
Smoking Status			0.001
Nonsmoker <sup>d</sup>	34 (43.0)	44 (27.5)	
Never	19 (24.1)	34 (21.3)	
Former	16 (20.3)	12 (7.5)	
Current	9 (11.4)	67 (41.9)	
Regular exercise program	35 (44.3)	45 (28.1)	0.052
Medical history			
Hysterectomy	30 (38.0)	52 (32.5)	0.379
Diabetes mellitus	4 (5.1)	8 (5.0)	0.991
Hypertension	15 (19.0)	32 (20.0)	0.835
History of breast cancer	3 (3.8)	4 (2.5)	0.682 <sup>e</sup>
Family history of breast cancer	11 (13.9)	23 (14.4)	0.941
Menopausal Symptoms			
Anxiety	61 (77.2)	88 (55.0)	0.100
Decreased energy	33 (41.8)	39 (24.4)	0.006
Hot flashes	55 (69.6)	89 (55.6)	0.038
Insomnia	45 (57.0)	53 (33.1)	0.001
Menstrual changes	35 (44.3)	83 (51.9)	0.271
Urinary complaints	23 (29.1)	52 (32.5)	0.596
Vaginal dryness	13 (16.5)	29 (18.1)	0.750

TABLE 2. BASELINE CHARACTERISTICS OF PATIENTS REPORTING MENOPAUSAL SYMPTOMS BY CLINIC TYPE, COMMUNITY HEALTH CENTERS OF KING COUNTY, 1997–1998

<sup>a</sup>Numbers may not add to 100% because of missing values.

 ${}^{b}\chi^{2}$  test of proportions unless otherwise noted.

<sup>c</sup>Student's *t* test.

<sup>d</sup>No additional information available.

eFisher's exact test.

SE, standard error.

patients (Table 5). Only the improvement in insomnia was statistically significant. Patients treated with naturopathy improved about as frequently as patients who were treated conventionally for four (anxiety, hot flashes, menstrual changes, vaginal dryness) of the seven menopausal symptoms evaluated. Naturopathic patients reported less improvement for urinary complaints, although this finding was not statistically significant.

# DISCUSSION

By these methods, we were relatively easily able to characterize the differences in baseline characteristics and medication use by patients treated with two distinct systems of care for menopausal symptoms in the clinical setting. In addition, in an effort to compare menopausal symptom changes, we attempted to address the substantial differences between the users of naturopathic and conventional treatments by regression analysis.

This study provides evidence that patients treated with the aggregate system of naturopathy for menopausal symptoms experience symptom relief that is at least as effective as conventional therapy for most symptoms. Patients treated for insomnia and decreased energy may be more likely to improve than their conventionally treated counterparts. In our

## NATUROPATHY FOR MENOPAUSE

	Naturopathic patients	Conventional patients	
Medication	n = 79 (%)	n = 160 (%)	p value <sup>a</sup>
Naturopathic hormone replacement preparations			
Plant-derived estrogen <sup>b</sup>	22 (27.8)	2 (1.3)	_
Natural progesterone <sup>c</sup>	27 (34.1)	2 (1.3)	
Combined phytoestrogen/natural progesterone	20 (25.3)	0	
Other Naturopathic Preparations:			
Remifemin (Black cohosh)	48 (60.7)	8 (5.0)	< 0.001
Licorice (Glycyrrhiza glabra)	1 (1.3)	0	—
Dong quai (Angelica sinensis)	3 (3.8)	0	—
St. John's Wort (Hypericum perforatum)	5 (6.3)	5 (3.1)	0.246
Kava kava (Piper methysticum)	14 (17.7)	2 (1.3)	—
Multiple vitamin supplement	48 (60.7)	7 (4.3)	< 0.001
Single vitamin supplement	47 (59.4)	19 (11.9)	< 0.001
Vitamin E supplement	22 (27.8)	2 (1.3)	—
Conventional hormone replacement therapy (HRT)			
Conjugated or Esterified Estrogend	24 (30.3)	120 (75.0)	< 0.001
Synthetic Progestogen <sup>e</sup>	11 (13.9)	78 (48.7)	< 0.001
Combined estrogen/progestogen	9 (11.3)	75 (46.8)	< 0.001
Related prescription therapy			
Antidepressant <sup>f</sup>	8 (10.1)	57 (35.6)	< 0.001
Antihypertensive <sup>g</sup>	8 (10.1)	35 (21.8)	0.026
Dietary modification			
Oats, soy, or flaxseed enhanced diet	44 (55.6)	10 (6.3)	< 0.001

Table 3. Selected Medication Use by Patients Treated for Menopausal Symptoms, by Clinic Type, Community Health Centers of King County, 1997–1998

 ${}^{a}\chi^{2}$  test of proportions.

<sup>b</sup>Plant-derived estradiol (10%): estrone (10%): estriol (80%) preparation prepared by a naturopathic pharmacist.

<sup>c</sup>Oral micronized progesterone.

<sup>d</sup>Conjugated estrogens, piperazine estrone sulfate, esterified estrone, micronized estradiol, estradiol, or transdermal patch.

<sup>e</sup>Medroxyprogesterone acetate.

<sup>f</sup>Amitryptyline, fluoxetine HCl, or paroxetine.

<sup>g</sup>HCl Spironolactone, hydroclorothiazide, atenolol, furosemide, lisinopril, propranolol, verapamil, or enalapril.

study setting, the six conventional clinics of CHCKC provided an opportunity to use a comparison cohort with administrative and contextual similarities to the CHCKC naturopathy clinic. Because each of the CHCKCs provides patients with a dispensary of formulary medications, we were also able to ascertain the type and quantity of medications prescribed for each study patient.

In the clinical setting where this study was conducted, use of an HRT preparation was a component of naturopathic care for one third

 TABLE 4. PATIENTS REPORTING IMPROVEMENT IN SPECIFIC MENOPAUSAL SYMPTOMS, NATUROPATHIC VERSUS

 CONVENTIONAL THERAPY, COMMUNITY HEALTH CENTERS OF KING COUNTY, 1997–1998

Symptoms	Patients treated with naturopathy, # improved/# reporting symptoms, (%)	Patients treated conventionally # improved/# reporting symptoms, (%)	p value <sup>a</sup>
Anxiety	28/61 (45.5)	29/88 (32.9)	0.110
Decreased energy	12/33 (36.4)	6/39 (15.4)	0.039
Hot flashes	25/55 (45.4)	27/89 (30.3)	0.067
Insomnia	17/45 (37.8)	9/53 (17.0)	0.019
Menstrual changes	9/35 (25.7)	28/83 (33.7)	0.373
Urinary complaints	3/23 (13.0)	8/52 (15.4)	0.787
Vaginal dryness	4/13 (30.7)	4/29 (13.7)	0.238

 ${}^{a}\chi^{2}$  test of proportions.

Symptoms	Crude OR (95% CI)	p value	Adjusted OR <sup>a</sup> (95% CI)	p value
Anxiety	1 41 (0 89 2 25)	0 129	1 27 (0 63 2 56)	0.500
Decreased Energy	2.46 (0.86, 7.03)	0.093	6.55 (0.96, 44.74)	0.056
Hot Flashes	1.50 (0.90, 2.51)	0.119	1.40 (0.68, 2.88)	0.359
Insomnia	2.18 (1.92, 2.47)	0.119	6.77 (1.71, 26.63)	0.006
Menstrual Changes	0.74 (0.34, 1.58)	0.431	0.98 (0.43, 2.24)	0.973
Urinary Complaints	0.64 (0.22, 1.83)	0.402	0.18 (0.01, 2.26)	0.182
Vaginal Dryness	2.59 (0.77, 8.67)	0.124	0.91 (0.21, 3.96)	0.910

 Table 5. Unadjusted and Adjusted Odds of Improvement in Menopausal Symptoms, Naturopathic versus

 Conventional Therapy, Community Health Centers of King County, 1997–1998

<sup>a</sup>Adjusted for age, weight, smoking status, monthly income, regular exercise program, antihypertensive therapy. OR, odds ratio; CI, confidence interval.

of women. Although HRT is also prescribed by conventional physicians, other elements of the aggregate system of naturopathy further differentiate it from conventional therapy. These treatment options include the use of a spectrum of plant-derived estrogens, phytomedicinals, lifestyle changes, dietary modification, mindbody techniques, and the encounter with the naturopathic provider in addition to the option of using HRT. In a separate analysis, to test the hypothesis that HRT use alone was responsible for comparability in symptom improvement between the two groups we compared the subset of naturopathy patients treated with plant-derived estrogens and phytoprogesterones to the subset of conventional patients treated with estrogen and progestogen preparations, respectively. There were no significant differences in symptom improvement among patients treated by phytoestrogens compared to conventional estrogens, or naturopathic progesterones compared with conventional progestogens (data not shown).

Findings from this study of comparable symptom relief between the two therapy groups are consistent with other studies of comparison of specific naturopathic pharmacotherapy to conventional therapy. Studies of dietary supplementation with phytoestrogens have shown reduction in hot flashes among some women. A double-blinded, randomized trial of daily dietary supplementation of soy flour compared to wheat flour found a 40% compared with a 25% reduction in symptoms in the soy and wheat flour groups, respectively (Murkies et al., 1995). Another double-blinded, multicenter, randomized placebo-controlled trial found that postmenopausal women who took 60 g of soy protein daily experienced a 45% reduction in the number of hot flashes compared to a 30% reduction within the placebo group (Albertazzi et al., 1998). Differences in improvement in energy level and insomnia may be caused by lifestyle factors, dietary preferences, or the use of concurrent therapies such as kava-kava extract, which has been reported to have anxiolytic properties. A randomized, double-blinded, placebo-controlled, multicenter trial of kava-kava extract determined that patients with anxiety disorders experienced significant reductions in Hamilton Anxiety Scale (HAMA) scores (Volz et al., 1997).

Although our study does not provide comprehensive information about the reasons why patients seek naturopathic treatment of menopausal symptoms, we did find baseline differences between patients treated with naturopathy and those treated conventionally. Patients treated with naturopathy tended to participate more frequently in a regular exercise routine, were less likely to be current smokers, and had higher monthly incomes. This finding is consistent with a national survey of alternative medicine use in the United States, which found that 72% of patients using alternative medicine have annual incomes greater than \$20,000 per year (Eisenberg et al., 1998). Although fear of increased risk of breast cancer related to use of conjugated and esterified estrogens might result in a greater prevalence of patients with personal or family histories of breast cancer among users of naturopathy, there were no differences in breast cancer histories between the two groups.

This investigation posed many analytic chal-

lenges and led to several study limitations. By their nature, menopause symptoms regress spontaneously. Without a placebo group it is impossible to establish the proportion of symptom regression that is the result of therapy over time. The women in the naturopathy treatment group were a full year older than those in the conventional therapy group. Because we do not know the duration of menopause symptoms or whether women were perimenopausal or menopausal, it is impossible from this study to establish whether the women in the naturopathy group were further along in their trajectory through menopause. Also, there were more smokers in the conventional therapy group and smoking is associated with an earlier age at natural menopause. For these reasons, these two variables were controlled for in the multivariate analysis. Because of the nature of abstraction based on chart review, we were able only to access information adequately documented in patient charts. Because there was no uniform method used by providers to report symptom severity, we were limited to the assessment of symptom change. To assess symptom change over time, inclusion criteria required that patients have more than one office visit during the study period. Therefore, the study subjects may not be representative of all women seeking care for menopausal symptoms at the study sites. Treatment obtained outside of the scope of CHCKC services, and duration of treatment for menopausal symptoms prior to the study period were not accounted for in this study. Furthermore, our ability to detect a difference between specific pharmacotherapies was limited by sample size.

Before naturopathy can be considered a valid substitute for conventional treatment during menopause, a randomized trial of the two systems of care might further characterize differences in treatment response and the dose and duration of therapies used. Randomization would better address sources of potential confounding not fully accounted for by this retrospective, observational approach. For the sizeable subgroup of symptomatic patients for whom conventional therapy is contraindicated or undesirable, naturopathy appears to have promise as an effective alternative for the relief of menopausal symptoms.

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