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# A universal menopausal syndrome?

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A variety of symptoms are reported frequently as being part of a menopausal syndrome. These include hot flashes, night sweats, menstrual irregularities, vaginal dryness, depression, nervous tension, palpitations, headaches, insomnia, lack of energy, difficulty concentrating, and dizzy spells. The question of whether and how symptoms occur together is important for women who want to know which symptoms can be attributed to menopause and which to aging generally or to other physical or psychosocial factors. To address this question, the present article examines the following avenues of research: (1) the clustering or grouping of symptoms; (2) the temporal association of different symptoms with stages of the menopausal transition; (3) the consistency of symptom reporting across cultures, race, and ethnicity; and (4) the consistency of risk factors for symptoms. Results of the factor analysis studies do not support a single syndrome consisting of menopausal and psychological or somatic symptoms. The prevalence of symptom reporting across the transition also argues against a menopausal syndrome because vasomotor symptoms follow a unique pattern that differs from that of other symptoms. Cross-cultural differences suggest that symptom reporting is not universal. Finally, although there is some overlap in risk factors for symptoms, menopausal status is more consistently related to vasomotor symptoms than to psychological or physical ones. Results of these investigations all argue against a universal menopausal syndrome. Future research should focus on how symptoms are interrelated, what factors are uniquely related to vasomotor symptoms, and identifying whether there is a subgroup of women who are more likely to report symptoms.


Various symptoms are reported frequently as being part of a menopausal syndrome. These include hot flashes, night sweats, menstrual irregularities, and vaginal dryness, as well as other symptoms such as depression, nervous tension, palpitations, headaches, insomnia, lack of energy, difficulty concentrating, and dizzy spells.[1] The question of whether a universal menopausal syndrome exists has been debated for some time.[2–5] Some authors have suggested that a constellation of symptoms forming a syndrome is experienced by most women owing to declining levels of estrogen as they transition through menopause. The question of whether, and how, symptoms occur together is important for women who want to know which symptoms can be attributed to menopause and which to aging generally or to other physical or psychosocial factors.

To address the question of whether a single universally experienced menopausal syndrome exists, this article examines the following avenues of research: (1) how symptoms cluster or group together; (2) the temporal association of different symptoms with various stages of the menopausal

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transition; (3) the consistency of symptom reporting across cultures, race, and ethnicity; and (4) the consistency of risk factors across symptoms.

## Symptom groupings

A number of researchers have used factor analysis and related approaches to determine how symptoms group together in menopausal women. These studies differ in terms of the specific symptoms studied, the number of symptoms included in the list (ranging from 20 to 36), the time frame for symptom reporting (from the past 2 weeks up to 1 year), as well as the cut point for factor inclusion. Studies also differ in sample characteristics such as age of sample (2 studies included only women aged 47 or 48 years, whereas others included wider age ranges), composition of sample (some exclude women taking estrogen), and whether the sample was clinic or community based. Studies have been conducted in a variety of countries and regions, including the United States,[6–8] Canada,[6,9] Australia,[10] Great Britain,[11,12] Sweden,[13,14] Norway,[5] Japan,[6] Hong Kong,[15] and Southeast Asia.[16] Despite these differences, the results are overwhelmingly consistent in this respect: in every study, vasomotor symptoms clustered as a factor separate from psychological or somatic symptoms. These results show that women who report vasomotor symptoms do not necessarily report other symptoms.

Except for a few studies,[6,7,15,16] these analyses are all based on data from samples of white women. In the Study of Woman's Health Across the Nation (SWAN), Avis and associates[7] conducted separate factor analyses of symptoms among Caucasian, African American, Chinese, Japanese, and Hispanic women living in the United States. In this multiethnic study, results showed that vasomotor symptoms consistently grouped as a separate factor across all racial/ethnic groups. The consistent results of these studies suggest that women who report vasomotor symptoms do not necessarily report other symptoms.

## Prevalence of symptoms across the menopausal transition

The cross-sectional portion of SWAN provides the opportunity to examine the prevalence of various symptoms by menopausal status in a multiethnic sample of women aged 40 to 55 years. SWAN is a multiracial, multiethnic, multisite study of middle-aged women from across the United States. The study comprises 2 stages: a cross-sectional telephone or in-home survey conducted between November 1995 and October 1997, and a longitudinal investigation to track changes in women's physical and mental health as they age and traverse the menopausal transition. The design of SWAN has been described in detail elsewhere.[17] Briefly, community-based samples of women were drawn from the following 7 geographic locations in the United States: Boston, Massachusetts; Chicago, Illinois; Detroit, Michigan; Los Angeles, California; Newark, New Jersey; Oakland, California; and Pittsburgh, Pennsylvania. Women self-identifying primarily with $\geq$1 of the following 5 racial/ethnic groups were interviewed: Caucasian, African American, Chinese, Hispanic, and Japanese. Each site studied Caucasians and 1 other ethnic group; African Americans were sampled at 4 sites, and each of the other ethnic groups was sampled at a single site. A 15-minute telephone or in-home interview was conducted to determine eligibility for the SWAN longitudinal cohort phase. In addition to cohort eligibility criteria, information regarding other characteristics was collected, including sociodemographic factors and symptoms. To be eligible for participation in the cross-sectional phase of SWAN, a woman had to reside in an appropriate geographic area, speak a designated study language (English, Cantonese, Japanese, or Spanish), be aged 40 to 55 years at the time of initial contact, and be cognitively able to provide verbal informed consent. A total of 16,065 women across the 7 sites completed a cross-sectional interview.

Menopausal status was determined on the basis of answers to a series of questions about menstrual patterns and gynecologic surgery. Women who had undergone a hysterectomy and/or a bilateral oophorectomy were defined as surgically menopausal. Women who had no menstrual bleeding in the previous 12 months (not due to medication, pregnancy, or severe weight loss) were defined as postmenopausal. Women with menses in the previous 12 months but not in the previous 3 months were considered late perimenopausal. Early perimenopausal women were those who had menstrual bleeding in the previous 3 months, but who had experienced increasing irregularity in cycle length over the past year. Premenopausal women were those who reported menses in the previous 3 months with no increase in irregularity. All perimenopausal and premenopausal women who reported using estrogen and/or progestin in the past 3 months were kept in a separate stratum because their observed menstrual bleeding may have been a result of hormone use rather than a reflection of true menopausal status.

Race/ethnicity was self-identified by respondents and was obtained by asking the following open-ended question: "How would you describe your *primary* racial or ethnic group?" The responses then were categorized as Caucasian, African American, Chinese, Japanese, and Hispanic. The Hispanic category included women of Puerto Rican, Dominican, Cuban, Central American, South American, Spanish, or other Spanish-speaking descent; these groups were combined in analyses in a single Hispanic category owing to small sample sizes. Only women whose primary ethnic group was assigned to 1 of these 5 categories were considered (N = 15,642).

As part of the cross-sectional interview, women were given a list of 10 symptoms and were asked to indicate

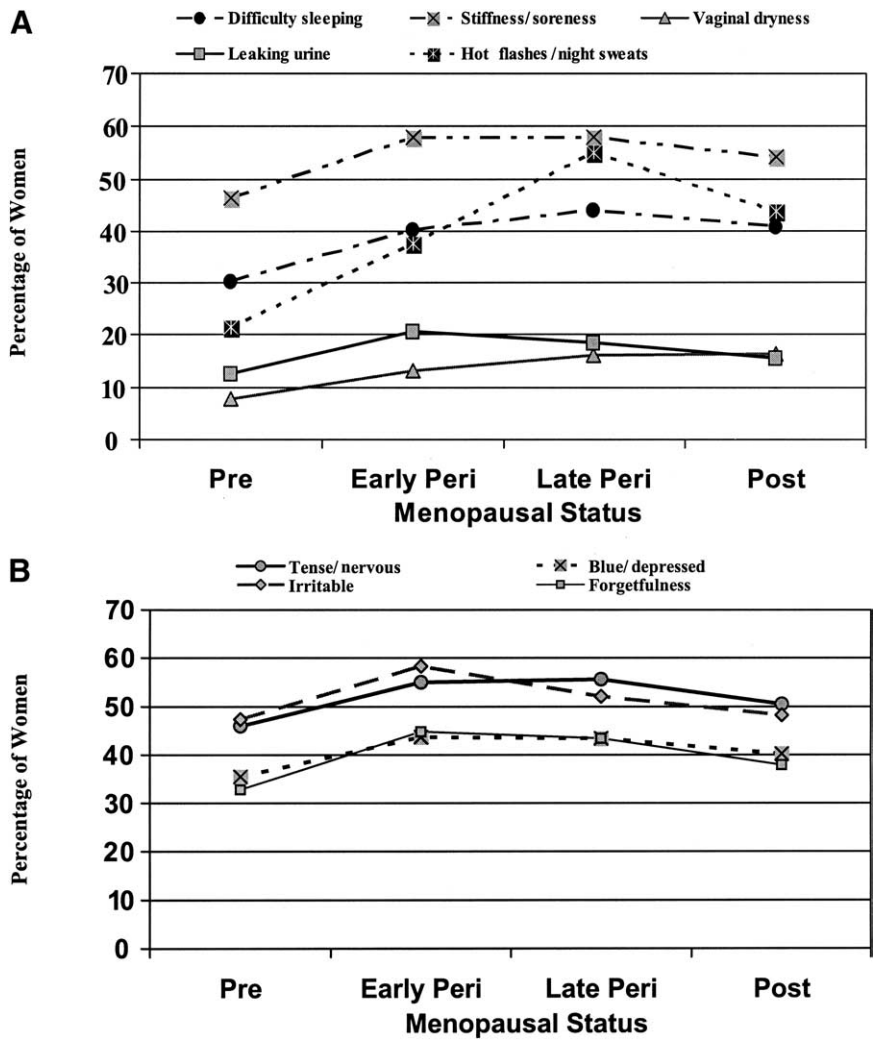


**Figure 1** Age-adjusted percentage of women at different stages of the menopausal transition reporting (*A*) hot flashes/night sweats and other somatic symptoms and (*B*) psychological distress and cognitive functioning symptoms. Peri = perimenopausal; post = postmenopausal; pre = premenopausal.

(yes/no) which symptoms they had experienced in the past 2 weeks. In addition, we considered a combined hot flashes/night sweats variable to be indicative of vasomotor symptoms. **Figure 1** shows the percentages of women who reported experiencing various symptoms in the past 2 weeks according to menopausal status; Figure 1A shows vasomotor symptoms (hot flashes and/or night sweats) and other somatic symptoms, while Figure 1B shows symptoms of psychological distress and cognitive functioning. All of these percentages have been adjusted for age. Prevalence estimates exclude women who had used hormone replacement therapy in the past 3 months, who were pregnant or breastfeeding, or who had stopped menstruating because of severe weight loss, medication use, chemotherapy, or radiation treatment, or whose menopausal status was undetermined (n = 3,245).

As illustrated in Figure 1, all symptoms were significantly more prevalent ($P < 0.0001$) among women in early perimenopause than among premenopausal women. However, the pattern of symptoms differs by menopausal status. Most notably, the reporting of hot flashes or night sweats is dramatically higher among women in early perimenopause (38%) compared with premenopausal women (21%). No other symptom shows an increase of this magnitude. Further, the reporting of hot flashes or night sweats increases considerably from early perimenopause to late perimenopause (38% to 55%; $P < 0.0001$). Only 2 other symptoms show a significant change from early to late perimenopause: vaginal dryness increases (13% to 16%, respectively; $P = 0.024$) and irritability decreases (58% to 52%, respectively; $P = 0.01$). In neither case is the magnitude of change in reporting as large as that observed for hot flashes or night sweats.

Although the percentage of women reporting hot flashes or night sweats declines noticeably from late perimenopause to postmenopause (55% vs. 44%, respectively; $P < 0.0001$), other physical symptoms (e.g., stiffness and soreness, 58% vs. 54%, $P = 0.092$; leaking urine, 19% vs. 16%, $P = 0.13$; difficulty sleeping, 44% vs. 41%, $P = 0.203$) show much smaller nonsignificant declines from late perimenopause to

postmenopause, each respectively, whereas yet another physical symptom (i.e., vaginal dryness) shows a small, though insignificant, increase in prevalence from late perimenopause to postmenopause (16.1% vs. 16.4%, respectively; $P = 0.51$). Psychological symptoms either remain the same or slowly decrease in prevalence among women in late perimenopause compared with postmenopause. These different patterns of symptoms in relation to menopausal status argue against a universal syndrome.

Other studies have also examined symptom prevalence across the transition. **Table 1** presents results from some of the largest cross-sectional and longitudinal community-based studies that also report on the association between a variety of symptoms and menopausal status.[7,11,12,14,15,18–24] Olofsson and Collins[14] looked at menopausal status and 10 different symptom clusters. Only vasomotor symptoms and joint pain were associated with menopausal status. Hunter and colleagues[11] studied 682 women aged 45 to 55 years in England and derived 9 from their list of 36 symptoms (vasomotor, somatic, depressed mood, cognitive difficulties, anxiety/fears, sexual functioning, sleep problems, menstrual, and attractiveness). Of these 9 factors, vasomotor, sexual functioning, and sleep problems were most prevalent in postmenopausal women; depressed mood was more prevalent in perimenopausal and postmenopausal women compared with premenopausal women. None of the other 5 symptom factors differed by menopausal status.

Anderson and associates[18] compared vasomotor, somatic, psychological, and sexual symptoms across menopausal transition status for Australian and Japanese women. They found somewhat different results for the 2 ethnic groups. Vasomotor, psychological, and somatic symptoms decreased after menopause in Australian women, with only sexual symptoms continuing after menopause. In Japanese women, however, somatic, psychological, and sexual symptoms remained prevalent after menopause. Kuh and colleagues[12] found that of 5 symptom clusters (vasomotor, sexual, trouble sleeping, somatic, psychological) only vasomotor, sleep, and sexual symptoms were related to menopausal status.

There are 3 longitudinal studies. In a follow-up to the study by Kuh and colleagues,[12] Hardy and Kuh[19] followed 1,426 women as part of the British Medical Research Council cohort. Women were aged 47 years at baseline and aged 52 years at the last follow-up. The investigators asked women to report on whether they experienced 20 symptoms in the last 12 months and how bothersome the symptoms were. Symptoms were categorized as vasomotor or psychological. Multivariate analyses adjusting for socioeconomic status, prior psychological status, and health-related behaviors showed that vasomotor symptoms increased with the menopausal transition. Psychological symptoms were unrelated to the transition; they were more strongly associated with current life events and difficulties with family life than with menopausal status.

Brown and coworkers[20] studied symptoms in 8,623 Australian women aged 45 to 50 years. In longitudinal analyses, adjusting for sociodemographics and lifestyle, women who transitioned from premenopause to perimenopause or who remained perimenopausal over the 2 years between surveys reported the greatest increase in hot flashes and night sweats. Those transitioning from premenopause to perimenopause showed some increase in tiredness, stiffness, and difficulty sleeping, whereas those who transitioned from perimenopause to postmenopause reported increases in back pain and leaking urine. In the Melbourne Women's Midlife Health Project, Dennerstein and colleagues[21] found that the severity of several symptoms—trouble sleeping, vaginal dryness, night sweats, and hot flashes—increased from premenopause to late perimenopause or postmenopause. None of the other 29 symptoms was significantly related to change in menopausal status. These results support the conclusion drawn by Greene[25] in a 1992 review of symptoms during the menopausal transition, namely that vasomotor symptoms show a marked temporal association with the menopause, whereas other symptoms do not.

## Symptom reporting across cultures

Several studies of non-Western women suggest cultural differences in menopausal symptoms. For example, in a study of 483 Indian women of the Rajput caste in India, Flint[26] found that few women had any problems with menopause other than cycle changes; subjects reported no depression, dizziness, or incapacitation. Lock[27] extensively studied Japanese women and found that rates of hot flashes and night sweats are low in comparison with those reported in Western cultures. Further, only a small proportion of Japanese women aged 45 to 55 years experience depressive symptoms or irritability, and these symptoms vary little with menopausal status. In a cross-cultural comparison of the rates of somatic and psychological symptoms, Avis and colleagues[6] reported that rates of almost every symptom were lower in the Japanese women than in groups of US and Canadian women of similar ages. Mayan women do not report hot flashes,[28] although they have similar hormone profiles to Western European women.[29]

Cross-racial/multiethnic studies of menopausal symptoms are very limited in the United States. The largest of these, SWAN, has found considerable variation of symptom reporting across race/ethnicity, even controlling for health and lifestyle factors.[7,22] Compared with Caucasian women, Chinese, Japanese, African American, and Hispanic women report significantly fewer symptoms in general. However, reporting of specific symptoms varies by race/ethnicity, with African American women reporting more vasomotor symptoms.[7,22]

**Figure 2** shows the percentage of participants in the SWAN cross-sectional survey who reported various

**Table 1** Findings from population-based studies of menopause and symptoms (continued on page 42S)

| Study | Sample | Menopausal Status | Symptoms | Findings | Covariates |
|---|---|---|---|---|---|
| Cross sectional | | | | | |
| Anderson et al,[18] 2004 (Australian and Japanese Midlife Women's Health Study) | Japan, n = 848; Australia, n = 886; aged 45–60 yr | Pre = menses in past 3 mo and no irregularity<br>Peri = menses past 3 mo w/irregularity<br>Late peri = menses in past 3–12 mo, but not previous 3 mo<br>Post = 12 mo amenorrhea<br>Surgical = hysterectomy or bilateral oophorectomy | Greene Climacteric Scale: 21 symptoms, 4 factors (vasomotor, somatic, psychological, sexual) | Vasomotor, psychological, sexual, somatic all varied by status, but pattern differed by country | None |
| Ho et al,[15] 1999 | Hong Kong, N = 2,125, aged 44–55 yr | Pre = still menstruating<br>Peri = no menses for 3 mo within past 12 mo<br>Post = 12 mo amenorrhea | 22-item symptom checklist, 5 clusters (vasomotor, psychological, somatic, musculoskeletal/GI, respiratory) | Vasomotor, psychological, somatic ↑ peri | Age |
| Gold et al,[22] 2000 (SWAN) | USA, N = 16,065, aged 40–55 yr | Pre = menses past 3 mo, no change in predictability<br>Early peri = menses past 3 mo, but less predictable<br>Late peri = menses past 3 mo, but not previous 12 mo<br>Post = 12 mo amenorrhea<br>Surgical = hysterectomy or bilateral oophorectomy | 7 symptoms, vasomotor and physical | Vasomotor greatest in late peri | Adjusted for: age, education, SES, ethnicity, marital status, parity, BMI, smoking, physical activity |
| Ho et al,[23] 2003 | Hong Kong, N = 1,889, aged 44–55 yr | Pre = still menstruating<br>Peri = no menses for 3 mo within past 12 mo<br>Post = 12 mo amenorrhea | 21-item list, 5 factors (vasomotor, psychological, musculoskeletal, nonspecific somatic, respiratory) | All symptoms ↑ peri | Education, employment, income, health |
| Avis et al,[7] 2001 (SWAN) | USA, n = 14,906, aged 42–55 yr | Pre = menses past 3 mo, no change in predictability<br>Early peri = menses past 3 mo, but less predictable<br>Late peri = menses past 3 mo, but not previous 12 mo<br>Post = 12 mo amenorrhea<br>Surgical = hysterectomy or bilateral oophorectomy<br>Hormone users = hormone use past 3 mo | 10 symptoms, 2 factors (vasomotor, psychosomatic) | Vasomotor ↑ peri and post Psychosomatic ↑ peri (*note*: early and late peri were combined in analyses) | Age, education, health, race/ethnicity |

**Table 1** Findings from population-based studies of menopause and symptoms (continued on page 43S)

| Study | Sample | Menopausal Status | Symptoms | Findings | Covariates |
|---|---|---|---|---|---|
| Hunter et al,[11] 1986 | London and Southeast England, N = 682, aged 45–55 yr | Pre = menstruating regularly past 12 mo<br>Peri = menstruated in past 12 mo w/irregularity<br>Post = 12 mo amenorrhea | 36 symptoms, 9 factors (vasomotor, somatic, depressed mood, cognitive difficulties, anxiety/fears, sexual, sleep problems, menstrual, attractiveness) | Vasomotor and sexual related to status only; depressed mood, somatic, and sleep related to status and social class | Age, health, mental status, social class, employment |
| Kasuga et al,[24] 2004 | Japan, N = 1,069, aged 40–60 yr | Pre = regular menstrual cycle<br>Peri = irregular menses during past 12 mo<br>Early post = within 3 yr after menopause<br>Late post = >3 yr after menopause (*note*: actual menopause not defined) | 40 symptoms classified into 20 subgroups (including vasomotor, somatic, psychological, urinary) | HF, NS, insomnia ↑ peri and early post; vaginal dryness, urinary frequency, dyspareunia ↑ early and late post | None |
| Olofsson and Collins,[14] 2000 | Sweden, N = 148, aged 53 yr | Pre = no change in menses<br>Peri = irregular bleeding or changes in bleeding past 12 mo<br>Post = 12 mo amenorrhea<br>HRT users = taken HRT for ≥2 mo | Menopause symptom inventory: 67 items, 10 factors (vasomotor symptoms, negative mood, ↓ sexual desire, memory, sleep, vaginal dryness, urogenital, joint pain, vitality, ↑ sexual desire) | Only vasomotor and joint pain associated with status; vasomotor symptoms, joint pain ↑ post | Sociodemographics, partner relationship, health, lifestyle, stress |
| Kuh et al,[12] 1997 (Medical Research Council) | England, Scotland, Wales; N = 1,498, aged 47 yr | Pre = menses in past 3 mo and no change in regularity<br>Peri = menses in past 3–12 mo but not past 3 mo or increased irregularity<br>Post = 12 mo amenorrhea<br>Surgical = hysterectomy<br>HRT users = use of HRT before last menstrual period | 20 symptoms (vasomotor, sexual, trouble sleeping, somatic, psychological) | Vasomotor, sleep, sexual ↑ post; no difference for somatic or psychological; surgical and HRT users highest prevalence | Education, work stress, smoking, health, anxiety, depression |
| Longitudinal | | | | | |
| Hardy and Kuh,[19] 2002 (follow-up to Kuh et al,[12] 1997; Medical Research Council Cohort) | Britain, N = 1,426, aged 52 yr | Pre = menses in past 3 mo and no change in regularity<br>Peri = menses in past 3–12 mo but not past 3 mo or increased irregularity<br>Post = 12 mo amenorrhea<br>Surgical = hysterectomy<br>HRT users = use of HRT before last menstrual period | 20 symptoms, bothersome prior 12 mo (vasomotor, psychological) | Vasomotor ↑ with menopausal transition; psychological unrelated to transition | Adjusted for prior psychological status, health-related behaviors, SES, attitude toward menopause |

| | | | | | |
|---|---|---|---|---|---|
| Brown et al,[20] 2002 (Australian Longitudinal Study on Women's Health) | Australia, N = 8,623, aged 45–50 yr | Pre = menses past 3 mo and no change in regularity<br>Peri = menses in past 3–12 mo but not past 3 mo or increased irregularity<br>Post = 12 mo amenorrhea | 10 physical symptoms in past 12 mo, including vasomotor | HF, NS ↑ pre–peri and peri–peri transition; tiredness, stiffness, difficulty sleeping ↑ pre–peri; back pain, leaking urine ↑ peri–peri | Adjusted for: demographics, BMI, smoking, life events, age, physical activity |
| Dennerstein et al,[21] 2000 (Melbourne Women's Midlife Health Project) | Australia, N = 172 | Pre = no change in menstrual frequency<br>Early peri = menses past 3 mo, increased irregularity<br>Late peri = 3–11 mo amenorrhea<br>Post = 12 mo amenorrhea | 33 items (vasomotor, psychological, somatic, sexual) | NS, HF, vaginal dryness ↑ late peri and post; breast tenderness ↓ late peri and post; no other symptom related to status | |

↑ = increased; ↓ = decreased; BMI = body mass index; GI = gastrointestinal; HF = hot flashes; HRT = hormone replacement therapy; NS = night sweats; Peri = perimenopausal; Post = postmenopausal; Pre = premenopausal; SES = socioeconomic status; SWAN = Study of Women's Health Across the Nation.

symptoms by race/ethnicity and menopausal status, controlling for age. For all symptoms there is a significant effect for race/ethnicity, although this is minimal for difficulty sleeping and urine leakage. Symptoms of hot flashes and night sweats are shown separately, and it is interesting to see that there is greater ethnic variation for hot flashes than for night sweats. For both symptoms, the 2 groups with Asian ancestry report fewer problems, but the difference is most noticeable for hot flashes. Hispanic women generally report more depression, feelings of tension or nervousness, and forgetfulness, whereas women of white European ancestry report more irritability. There is a significant interaction between menopausal status and ethnicity for stiffness and soreness, vaginal dryness, and irritability. Postmenopausal Chinese women are less likely to report stiffness in joints, Chinese and Hispanic women in late perimenopause are more likely to report vaginal dryness, and Caucasian women in late perimenopause report greater irritability.

## Risk factors for symptoms

As previously described, menopausal status is consistently related to vasomotor symptoms. Although studies vary in terms of whether hot flashes/night sweats are greater at perimenopause or postmenopause, these symptoms clearly are related to the menopausal transition. Menopausal status, however, is less consistently associated with other psychological and somatic symptoms. It thus appears that menopausal status is a risk factor for vasomotor symptoms but not necessarily for psychological or somatic ones. Numerous studies have examined sociodemographic, lifestyle, health, and psychosocial factors related to symptom reporting. Lower socioeconomic status, smoking, lack of physical activity, more negative mood, general symptom reporting, and attitudes toward menopause have been related to vasomotor symptoms.[14,22,30–33] These same factors also are often related to psychological and somatic symptoms.[11,12,14,22,23] However, these demographic, lifestyle, and psychosocial factors tend to show a greater contribution to psychological and somatic symptoms than to vasomotor symptoms. There also may be certain personality characteristics or predispositions related to symptoms. Some researchers have suggested that a subgroup of women may be more prone to symptom reporting in general. Greene[25] suggested a vulnerability model in which adverse sociodemographic and psychosocial factors render women vulnerable to nonspecific somatic and psychological symptoms. Busch and colleagues[34] as well as Gold and associates[35] have shown that certain personality characteristics, such as symptom sensitivity and pessimism, are related to symptom reporting.

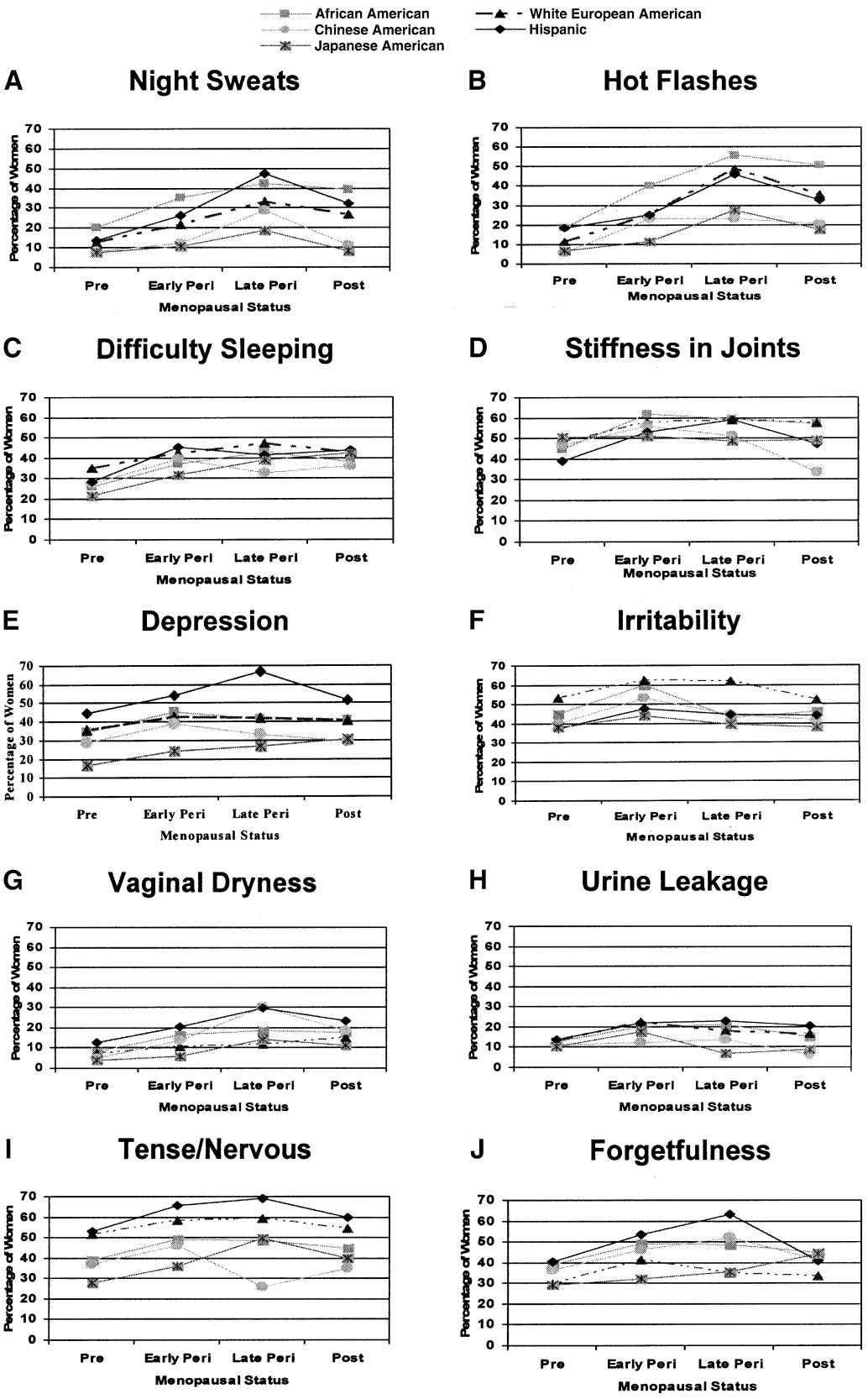


**Figure 2** Percentage of women reporting symptom at different stages of the menopausal transition by race/ethnicity. (*A*) Night sweats, (*B*) hot flashes, (*C*) difficulty sleeping, (*D*) stiffness in joints, (*E*) depression, (*F*) irritability, (*G*) vaginal dryness, (*H*) urine leakage, (*I*) tense/nervous, and (*J*) forgetfulness. Peri = perimenopausal; post = postmenopausal; pre = premenopausal.

## Summary

The findings described in this article argue against a universal menopausal syndrome. The results of the factor analysis studies do not support a single syndrome consisting of both vasomotor and psychological symptoms. Moreover, the prevalence of symptom reporting across the menopausal transition also argues against a single menopausal syndrome because vasomotor symptoms are the only symptoms consistently associated with menopausal status. Cross-cultural differences and differences among racial/ethnic groups suggest that symptom reporting is not universal. Finally, although there is some overlap in risk factors for symptoms, menopausal status is more consistently related to vasomotor symptoms than to psychological or somatic symptoms.

Despite the lack of data supporting a universal menopausal syndrome, clinicians report that patients often present with a cluster of symptoms. However, some of these symptoms may be due to general aging or other life events and not to menopause. Studies of symptom prevalence must control for these possible confounders. It also may be the case that there is a subgroup of women who do experience a symptom cluster or there may be multiple syndromes, experienced by different women. Studies to date have only sought a single universal syndrome and have not explored this possibility.

The interrelationship of symptoms is complex and is not well understood. For example, how is difficulty sleeping related to vasomotor symptoms? It appears that although night sweats may affect sleep quality, sleep disturbances may occur independently of night sweats. Most studies assessing symptoms ask women about the frequency of symptom occurrence, although some may ask about bothersomeness. Women vary in their response to symptoms, and the occurrence alone of a symptom may not be sufficient for that symptom to be considered bothersome. We propose that symptoms have a threshold at which point they become bothersome and may even affect other symptoms. For example, the frequency or intensity of night sweats may have to reach a certain threshold before they have an impact on sleep. This threshold will vary for specific symptoms and for individual women. Symptoms have not yet been studied in this manner.

From a public health and clinical perspective, women want to know whether they are likely to experience vasomotor symptoms, how long symptoms may last, and whether they can do anything to prevent or reduce occurrence of symptoms. Clinicians therefore need to identify factors related to vasomotor symptoms that are independent of general symptom reporting. Patients also want to know which other symptoms they may be experiencing are caused by the menopausal transition. Future research should focus on defining how symptoms are interrelated, determining what factors are uniquely related to vasomotor symptoms, and identifying whether there is a subgroup of women who are more likely to report symptoms.

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