JOURNAL OF WOMEN'S HEALTH
Volume 23, Number 5, 2014

DOI: 10.1089/jwh.2012.4200

Factors Associated with Successful Discontinuation of Hormone Therapy

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Abstract

Background: Careful management of symptoms, particularly sleep and mood disturbances, may assist women in discontinuing hormone therapy (HT). We sought to describe characteristics associated with successful HT cessation in women who attempted to discontinue estrogen pills/patches with or without progestin.
Methods: We invited 2,328 women, aged 45–70, enrolled January 1, 2005, to May 31, 2006, at Group Health in Washington State and Harvard Vanguard Medical Associates in Massachusetts, to participate in a telephone survey about HT practices. For the sample, we selected 2,090 women with estrogen dispensings (pharmacy data) during the study period, 200 women without HT dispensing after January 2005, and 240 women with no estrogen dispensings; 1,358 (58.3%) completed the survey. These analyses are based on survey responses.
Results: Among 802 women who attempted HT discontinuation, the mean age was 50 years, 93% were postmenopausal, 90% were white, 30% had had a hysterectomy, and 75% experienced hot flashes after discontinuation. Those who did not succeed had greater trouble sleeping (74% vs. 57%) and mood disturbances (51% vs. 34%) than those who succeeded. In multivariable analyses, factors associated with successful discontinuation included doctor advice (odds ratio [OR] 2.62, 95% confidence interval [CI] 1.68–4.08), lack of symptom improvement (OR 4.21, CI 1.50–12.17), vaginal bleeding (OR 5.96, CI 1.44–24.6), and learning to cope with symptoms (OR 3.36, CI 2.21–5.11). Factors associated with unsuccessful HT discontinuation included trouble sleeping (OR 0.40, CI 0.26–0.61) and mood swings or depression (OR 0.63, CI 0.42–0.92).
Conclusions: Doctor advice is strongly associated with successful HT discontinuation. Symptom management, particularly sleep and mood disturbances, may help women discontinue HT.

Introduction

The use of hormone therapy (HT) has decreased dramatically since the release of the Women's Health Initiative (WHI) Estrogen Plus Progestin Trial findings in July 2002.[1,2] Nonetheless, women continue to initiate HT; despite recommendations from professional organizations that HT be used at the lowest possible dose for the shortest possible time,[3] women often find it difficult to discontinue HT without the return of unacceptable symptoms.[1,4,5] No difference in success rates or incidence of withdrawal symptoms was seen in a study of immediate versus tapered cessation.[6] However, little is known about how to discontinue HT with minimal symptoms or how providers currently view HT discontinuation.

We undertook this population-based survey of women from two large US integrated healthcare plans to better understand experiences, practices, and attitudes about HT discontinuation in the post-WHI era. Our specific study objectives were to describe: (1) the HT discontinuation experiences of women who did and did not succeed in quitting HT; (2) strategies other than HT that women used to treat menopausal symptoms; and (3) characteristics associated with successful HT discontinuation.

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Materials and Methods

Study design and setting

We conducted a computer-assisted telephone survey to ascertain demographic data, HT use, attitudes toward HT use, detailed experiences with HT discontinuation, and factors that might affect the ability to discontinue HT, including attitudes about menopause and HT use, symptom severity, symptom distress, and depressive symptoms. The study was conducted at Group Health Cooperative and Harvard Vanguard Medical Associates (HVMA). Group Health is an integrated health plan in Washington State with approximately 530,000 enrollees, including more than 88,000 women aged 50–80 years. HVMA is an integrated multispecialty group practice in eastern Massachusetts with approximately 300,000 patients; approximately 30% (90,000) were members of Harvard Pilgrim Health Care (HPHC) when the surveys were conducted. To obtain automated pharmacy data, we included only patients who were insured by HPHC, one of the largest insurance providers in New England. The institutional review boards of both institutions approved the study.

Study sample

We identified a random sample of 2,090 women aged 45–70 who were enrolled from January 1, 2005, to May 31, 2006 at Group Health ($n = 1{,}090$) or HVMA ($n = 1{,}000$), with estrogen use during the study period as an inclusion requirement. An HT user was defined as a woman who filled at least two HT prescriptions for estrogen pills or patches within any 6-month period between January 1, 2005, and May 31, 2006; the second prescription had to be filled within 90 days of the run-out date of the first prescription. The run-out date was calculated as the fill date of the first prescription plus the number of estrogen doses dispensed in that prescription. For patches, we used the number dispensed times the expected wear time of each patch. To increase the likelihood of including women who were continuing to use HT and possibly had attempted to quit, along with women who had successfully discontinued HT, we selected approximately equal numbers of women with at least one HT fill in the 180 days before May 31, 2006 ($n = 1{,}040$; current users) and women with no HT dispensing in the same interval ($n = 1{,}050$; discontinuers). In addition, to meet goals other than the purpose of the current analyses, we randomly sampled 200 women who had no HT dispensings after January 2005 and 240 women with no HT dispensings (divided nearly equally between the two sites), resulting in a total sample size of 2,530 women. For these analyses, HT use, attempts to quit, and successful discontinuation were based upon self-report.

Data collection

Study surveys were conducted by the Group Health Research Institute Survey Center from April 2007 through March 2008. Survey questions included demographic characteristics, reproductive and menopause history, detailed questions about HT quit attempts, depression, and menopause symptoms. Some questions were asked only at Group Health because of HVMA's request to restrict the survey duration to less than 20 minutes.

HT use and quitting were self-defined based on the survey questions. We asked separately about the use of estrogen pills and patches and progestin pills, including duration of use. We then asked regarding pills/patches: ''Are you using them now?''; ''Have you ever tried to stop taking hormones?''; and ''Was there a period when you totally stopped using these pills/patches?'' Women with at least one quit attempt were classified as not successful or successful at quitting HT, based on whether they were using hormones at the time of the interview.

Women who attempted to quit HT at least once were asked: ''What are the reasons that you have tried to stop using estrogen pills or patches?'' All responses were recorded. Using a list of common menopause symptoms, women were asked (1) whether they had the symptom when they attempted to quit HT; (2) how bothered they were by the symptom; and (3) whether symptom recurrence contributed to resuming HT use. The symptoms included hot flashes; trouble sleeping; headaches; mood swings or depression; fatigue, tiredness, or low energy; aches and pains; and joint pain. Women were asked whether they used specific strategies to cope with symptoms experienced when they quit HT. We also asked about HT attitudes and HT discontinuation. We assessed depressive symptoms by using the Patient Health Questionnaire (PHQ-8), an instrument that provides both a dichotomous indicator of major depression and a continuous severity score.[7] Women with PHQ-8 scores ≥ 10 (moderate to severe depressive symptoms) were defined as ''depressed.'' Women with a PHQ-8 score < 10 (mild or no depressive symptoms) were classified as ''not depressed,'' as in other studies.[7]

Menopausal symptoms were also ascertained by using the Wiklund Menopause Symptom Checklist.[8] Women were asked whether, within the past 4 weeks, they had ''hot flashes/sudden flushes of warmth,'' ''night or day sweats/cold sweats,'' or ''pain with sexual activity or vaginal dryness.'' If they experienced a symptom, they were asked to rate it as mild, moderate, or severe.

Two other scales were administered. The eight-item Menopause Attitudes Scale assesses women's attitudes about menopause and treating menopause symptoms, using such statements as: ''Menopause should be viewed as a medical condition and treated as such'' and ''I worry that taking hormone pills could increase my risk of getting breast cancer.''[9] Response categories were ''strongly agree,'' ''agree,'' ''disagree,'' and ''strongly disagree.'' This scale, developed and used in our prior studies, has been found to be highly correlated with HT behaviors.[9]

We developed the Hormone Therapy Attitudes Scale for this study, informed by our prior survey studies and informational interviews with women, to measure a woman's inclination to use or discontinue HT. The scale has 10 statements; 5 reasons women should quit HT (e.g., women should quit taking hormones to reduce their risk of breast cancer) and 5 reasons women should continue using HT (e.g., women should keep taking hormones if it helps them sleep). Response categories were ''strongly agree,'' ''agree,'' ''don't know,'' ''disagree,'' and ''strongly disagree.'' Cronbach's alpha for the scale was 0.80. For both scales, up to half the responses may be missing, and responses are summed and divided by the number of answered questions, yielding a score of 1–5.

Statistical analyses

We compared the characteristics of women who attempted to quit and succeeded with those of women who attempted to quit and did not succeed, using chi-square tests for

categorical variables and *t*-tests for continuous variables. Associations that were statistically significant ($p < 0.05$) in these univariate analyses were then put into a single logistic regression model to determine the relative strengths of the associations with success in quitting. The model contained variables related to demographic characteristics (Table 1, reasons for quitting HT (Table 2), symptoms experienced upon quitting HT (Table 3), and strategies used to cope with symptoms after quitting (Table 4). The logistic regression model estimates an odds ratios (OR) (and 95% confidence interval [CI]) for each variable to assess the strength of its association with successful HT discontinuation, controlling for all the other variables in the model. All analyses were performed using SAS V9.0 (SAS Institute Inc., Cary, NC).

Results

Of the 2,530 potentially eligible women, 202 (8%) were ineligible: 114 were no longer in the health plan, 33 were premenopausal, 26 were physically/mentally unable to complete the telephone interview, 21 had a language barrier, 3 had died, and 5 were ineligible for other reasons. Of the 2,328 eligible women, 1,358 completed the survey, an overall response rate of 58.3%. Of these, 802 women had quit or attempted to quit HT during the study period and were eligible for these analyses. Compared to HVMA women, Group Health women were heavier (body mass index [BMI] 26 kg/m^2 for HVMA vs. 28 kg/m^2 for Group Health; $p < 0.0001$), were less likely to be white (94% vs. 88%, $p = 0.0007$), and were less likely to be college graduates (55% vs. 41%). Otherwise, however, women from the two sites had overall similar characteristics and were combined for all analyses.

Demographic characteristics of women who did and did not succeed at HT discontinuation were similar (Table 1). The mean participant age for all who attempted discontinuation was 57 ± 7 years, with 92% postmenopausal, 33% with a hysterectomy, and 91% white. However, women who successfully discontinued HT were more likely to report hot

Table 1. Respondent Characteristics Among Women Enrolled at Group Health Cooperative and Harvard Pilgrim Health Care Who in 2005–2006 Used Menopausal Hormone Therapy and Attempted Discontinuation, by Discontinuation Success

Characteristics	*Not successful* n = *337*	*Successfully quit HT* n = *465*
Age in years (mean ± SD)	57 ± 6	58 ± 6
Study site		
Group Health	41%	59%
Harvard Pilgrim Health Care	43%	57%
Menopausal status (%)		
Menopause transition	7%	8%
Postmenopausal	93%	92%
Hysterectomy	37%	31%
Surgical menopause	36%	30%
Menopause symptoms in past 4 weeks (%)		
Hot flashes ($p \leq 0.001$)	35%	57%
Trouble sleeping	56%	57%
Night or day sweats/cold sweats ($p \leq 0.001$)	30%	47%
Body mass index (mean ± SD) ($p \leq 0.001$)	28 ± 6	26 ± 5
College graduate/graduate school (%)	47%	45%
Race/ethnicity (%)		
Hispanic origin, yes/no	3%	3%
White	90%	91%
American Indian/Alaska Native	0.6%	0.4%
Asian	1%	1%
Black/African American	4%	2%
Native Hawaiian/other Pacific Islander	0.6%	0%
Other	1%	1%
Multiple races	4%	4%
Years of HT use (asked only at Group Health) ($p \leq 0.001$)		
≤ 1 year	3.1%	12.5%
> 1 year, < 5 years	18.9%	23.4%
≥ 5 years	78.0%	64.1%
Number of times tried to quit HT ($p \leq 0.001$)		
Once	50.2%	69.2%
Twice	26.1%	18.3%
Three or more times	23.7%	12.5%
Menopause Attitudes Scale (mean ± SD)[a] ($p \leq 0.01$)	2.45 ± 0.31	2.67 ± 0.35
HT Attitudes Scale (mean ± SD)[b] ($p \leq 0.001$)	1.74 ± 0.31	1.94 ± 0.41
PHQ-8 (mean ± SD)	4.6 ± 0.4.5	4.4 ± 0.14.3

[a]Scale ranges from 1 to 4; higher score indicates stronger belief in menopause as a natural event.
[b]Scale ranges from 1 to 4; higher score indicates stronger belief that women should quit HT.
HT, hormone therapy; PHQ-8, Patient Health Questionnaire; SD, standard deviation.

Table 2. Reasons Given by Women Who Used Menopausal Hormone Therapy 2005–2006 and Attempted Discontinuation, by Discontinuation Success

Reason tried to quit HT	*Not successful* n = *337* *% yes*	*Successfully quit HT* n = *465* *% yes*
Fear of breast cancer	22.3	18.9
Doctor advised against HT ($p \leq 0.001$)[a]	20.8	30.8
Side effects of HT	17.8	15.9
Media advised against HT ($p \leq 0.01$)	16.3	13.8
No need, symptoms were gone, therapy was done	14.2	12.3
Dislike pills ($p \leq 0.01$)	11.0	5.6
Fear of heart disease or stroke	10.1	9.0
Symptoms were gone	3.6	6.0
Symptoms did not improve ($p \leq 0.001$)	1.8	7.3
Menopause is natural, medication is not needed, wanted natural menopause experience	3.0	2.8
Vaginal bleeding ($p \leq 0.05$)	0.9	3.0
Already taking too many medications	2.7	1.3
Fear of blood clots	2.1	2.4
Developed other health problems that were not related to hormone use, such as diabetes, cancer ($p \leq 0.001$)	1.8	7.3

Responses were to the question ''What are the reasons that you have tried to stop using estrogen pills or patches?'' Responses were for first quit attempt, and all responses were recorded.
[a]All p values based on chi-square tests.

flashes and sweats in the previous 4 weeks and had a lower BMI than women who resumed HT. Successful quitters had fewer quit attempts and lower duration of use. Scores for the Menopause Attitudes and the Hormone Therapy Attitudes Scales were higher among women who quit and were strongly associated with successful HT discontinuation. A higher score on the Menopause Attitudes Scale suggests the attitude that menopause is a natural event, whereas a higher score on the Hormone Therapy Attitudes Scale indicates attitudes that favor HT discontinuation. For the Menopause Attitudes Scale, mean scores were 2.7 ± 0.4 for women who succeeded at HT discontinuation and 2.5 ± 0.31 ($p < 0.0001$) for women who did not succeed. For the Hormone Therapy Attitudes Scale, mean scores were 1.96 ± 0.41 for women

Table 3. Proportion of Women Who, After Using Menopausal Hormone Therapy 2005–2006 and Having at Least One Failed Attempt to Discontinue It, Resumed It After Experiencing, Being Bothered by, or Citing a Symptom, by Discontinuation Success

Symptoms upon HT discontinuation	*Not successful* n = *337* *% yes*	*Successfully quit HT* n = *465* *% yes*
Hot flashes	75	75
Extremely bothered (vs. none/somewhat) ($p \leq 0.001$)[a]	70	41
Was this a reason for going back on HT? ($p \leq 0.001$)	87	65
Trouble sleeping[a]	74	57
Extremely bothered (vs. none/somewhat) ($p \leq 0.001$)	63	42
Was this a reason for going back on HT? ($p \leq 0.001$)	75	54
Vaginal dryness/irritation	41	44
Extremely bothered (vs. none/somewhat) ($p \leq 0.001$)	41	24
Was this a reason for going back on HT? ($p \leq 0.001$)	54	24
Moods swings or depression[a]	51	34
Extremely bothered (vs. none/somewhat) ($p \leq 0.001$)	48	26
Was this a reason for going back on HT? ($p \leq 0.001$)	81	43
Fatigue, tiredness, low energy[a]	51	38
Extremely bothered (vs. none/somewhat) ($p \leq 0.01$)	50	35
Was this a reason for going back on HT? ($p \leq 0.001$)	69	42
Aches and pains	27	23
Extremely bothered (vs. none-somewhat)	40	34
Was this a reason for going back on HT? ($p \leq 0.01$)	60	29

Hormone therapy was estrogen with or without progestin.
[a]All p values based on chi-square tests.

Table 4. Strategies Women Who Used Menopausal Hormone Therapy 2005–2006 and Attempted HT Discontinuation Employed to Cope with Menopause Symptoms, by HT Discontinuation Success

Strategy	*Not successful % yes*	*Successfully quit HT % yes*
Asked at Group Health and Harvard Pilgrim Health Care	$n=337$	$n=465$
Learned to cope with symptoms ($p \leq 0.001$)[a]	60.1	82.4
Made behavioral changes (e.g., used fan, dressed in layers) ($p \leq 0.05$)	50.4	57.9
Support and encouragement from others	35.6	40.6
Exercised more	30.9	32.5
Used herbal medicines, naturopathic treatments($p \leq 0.05$)	26.0	19.8
Changed what you eat or drink (include soy)	21.9	24.5
Added other medicine, such as an antidepressant	9.0	12.5
Used estrogen creams	6.2	6.5
Asked only at Group Health	$n=192$	$n=276$
Used over-the-counter anti-inflammatory (e.g., ibuprofen)	19.0	15.2
Used massage or bodywork	5.0	7.6
Used chiropractic therapy	5.6	3.6
Used progesterone creams	2.2	2.6
Used acupuncture therapy	2.8	1.5
Used some other methods of stopping ($p \leq 0.01$)	16.3	9.5

[a]All p values based on chi-square tests.

who succeeded at HT discontinuation and 1.74 ± 0.31 ($p < 0.0001$) for women who did not succeed. PHQ-8 scores were low overall; 15.1% and 12.3% of women in the unsuccessful and successful quitters, respectively, had scores ≥ 10, indicating current depression.[7]

When asked whether they decided to stop pills/patches on their own or because of advice from someone else, 44% of women reported deciding to stop HT because of their doctor's advice, and 67% decided to quit on their own (responses sum to >100% because more than one response category was allowed). The most frequent reasons for trying to quit HT were fear of breast cancer, doctor's advice, HT side effects, media advice, and no need/symptoms gone/therapy complete (Table 2). The proportion of women who quit based on doctors advice was higher among those who succeeded (49%) than among those who did not succeed (37%) ($p = 0.0008$). Abrupt cessation was used by 61% who succeeded in quitting HT vs. 51% of those who did not succeed ($p = 0.006$). Differences were not significant between success and nonsuccess for other approaches (asked of those who took either pills or patches), including gradually decreasing the daily dose (37% vs. 42%, respectively), reducing the number of days used (41% vs. 44%), or changing from pills to patches and cutting them into smaller pieces (2.6% vs. 4.5%).

Symptoms upon quitting HT pills/patches were also related to successful discontinuation. Overall, 75% of women reported a return of hot flashes, which did not differ by success at HT discontinuation (Table 3). However, when compared to women who succeeded, women who failed at discontinuation more frequently reported trouble sleeping (74% vs. 57%), headaches (32% vs. 23%), mood swings or depression (51% vs. 34%), and fatigue (51% vs. 38%). For every symptom, women who were unsuccessful were more bothered by the symptom than were women who succeeded. Among women with at least one failed attempt to quit (including those who eventually succeeded), women who were unsuccessful were more likely to report every symptom as a reason for resuming HT than were women who eventually succeeded.

The greatest difference among strategies used by women who succeeded in HT discontinuation and those who did not was a positive response to the survey item ''learned to cope with it'' (82% vs. 60%, $p < 0.0001$) (Table 4). The proportion reporting making behavioral changes, such as using a fan or dressing in layers, was also higher among women who successfully discontinued HT than among those who did not (50% vs. 58%, $p < 0.05$), as was the proportion reporting using herbal medicine or naturopathic treatments (26% vs. 20%, $p < 0.05$). There were no other significant differences in strategies used to cope with symptoms, with 36%–41% of women relying on social support from others, 31%–33% exercising more, 22%–25% making dietary changes, and 15%–19% using over-the-counter pain medications.

In multivariable analyses, factors associated with successful HT discontinuation included quitting HT because of doctor advice (OR = 2.57, CI 1.64, 4.03), lack of symptom improvement with HT (OR = 4.03, CI 1.36, 11.94), health problems (OR = 12.03, CI 2.61, 55.41), vaginal bleeding with HT (OR = 4.85, CI 1.19, 19.84), learning to cope with symptoms (OR = 3.50, CI 2.28, 5.36), a higher score on the Menopause Attitude Scale (OR = 2.50, CI 1.30, 4.82), and a higher score on the Hormone Therapy Attitudes Scale (OR = 8.70, CI 1.43, 14.29). Compared to women with three or more quit attempts, women with one (OR = 2.03, CI 1.21, 3.42) but not two (OR = 1.09, CI (0.61, 1.95) quit attempts were more likely to be successful. Factors associated with failure to quit HT included trouble sleeping after quitting (OR = 0.45, CI 0.29, 0.68) and mood swings or depression after quitting (OR = 0.61, CI 0.41, 0.91). Hysterectomy (OR = 1.31, CI 0.72, 2.40) and the use of herbal medicines or naturopathic treatments (OR = 0.92, CI 0.59, 1.45) had no impact on successful quitting. In a similar model, including only Group Health women, number of years used (≤ 1, 1 to <5, 5 or more) was not associated with HT discontinuation (data not shown).

Discussion

In this population-based, multisite survey, conducted 4 years after the WHI Estrogen Plus Progestin trial,[10] successful HT discontinuation was associated with provider advice to quit, more favorable attitudes about menopause and HT discontinuation, fewer symptoms upon discontinuing HT, and better symptom tolerance following discontinuation. The proportion of women with sleep disturbances, mood swings, and depression upon HT cessation was greater among those who resumed HT than among those who quit successfully. This finding is not surprising, since these symptoms are a common reason for HT initiation as well.[9,11–13]

The power of provider advice in women's HT decisions has been previously described.[14] Our 1995 survey found that provider advice was strongly associated with women's behavior for both HT initiation and discontinuation.[9] These recurrent findings are important because of changing information and diverse opinions about HT risks and benefits.[15] Influential advice to women is likely to be provider dependent and increasingly personalized. For example, long-term followup results from the WHI Estrogen Plus Progestin[16] and Estrogen Alone studies[17] show that risk is highly related to initiation age and estrogen use with or without progestin. Providers who understand these subtle findings can better assist with informed decision making about HT initiation and discontinuation.

Attitudes toward HT use and menopause symptoms were also an important determinant of successful HT discontinuation. Successful discontinuers were over 20% more likely to report learning to cope with symptoms as important. We do not have information about study participants' ability to cope with other problems prior to menopause, and it is unclear whether they were able to cope better because their symptoms were less severe and bothersome or whether they simply had stronger coping abilities. Attitudes toward menopause and HT discontinuation were highly predictive of women's behavior. Thus, future studies should investigate whether interventions that shape women's attitudes can affect a woman's ability to successfully discontinue HT.

Both new-onset and recurrent depression increase during the menopause transition,[18,19] and our multivariable analysis found that recurrent symptoms of sleep and mood disturbances were factors in failing to quit HT. In a retrospective chart-review study, Ness *et al.* found that 44% of women who discontinued HT after the publication of the first WHI results reported symptom return, including vasomotor (25%), urogenital (25%), and mood-related (5%) symptoms.[20] Symptoms found by Rolnick *et al.* in women who discontinued HT after the WHI included hot flashes (55%), night sweats (45%), mood swings (21%), and vaginal dryness (28%).[21] Ockene *et al.* reported that in the WHI, among women without depression at baseline, those in the estrogen-plus-progestin arm were significantly more likely to develop depression (8.6%) when medication was withdrawn compared to women in the placebo group (5.6%).[22] Therefore, for women quitting HT, careful monitoring of symptoms, including sleep and mood, and offering interventions may be important for discontinuing HT.

A study on HT discontinuation in women from the Minnesota Heart Survey cohort,[23] conducted in the 6 months after publication of the WHI results, had findings similar to ours. Most who discontinued talked with a physician and cited symptoms, physician recommendation, or both as the reason for their decision. The most commonly used therapies for returning symptoms after HT discontinuation include topical estrogen, selective serotonin reuptake inhibitors, and alternative therapies, such as black cohosh (cimicifuga racemosa), soy products, and nutritional supplements.[20,21,24] In our study, women indicated a variety of approaches, but only learning to cope with symptoms distinguished women who were and were not successful at discontinuation. Women who resumed HT were consistently more bothered by every symptom than were women who discontinued.

Women who succeeded were 10% more likely to quit abruptly than women who did not succeed, but no other significant differences were seen for cessation methods. Our findings are similar to Haskell's post-WHI survey of women veterans. Among 836 women who had been using HT when the WHI was published and subsequently stopped, those who tapered had lower menopausal symptom scores after discontinuation but were twice as likely to resume, compared to those who stopped abruptly.[25] A randomized trial of 87 Swedish women using estrogen plus progestin found no difference in postdiscontinuation hot flash frequency or severity among those randomized to quit abruptly versus a 4-week taper.[26] Similarly, Cunha found no differences in the Blatt-Kupperman Menopausal Index or the hot flush score among women randomized for abrupt cessation or 2 or 4 months of a lowered dose. Half of the women in each group resumed HT within a year.[27] Overall, little data are available on tapered approaches to HT discontinuation. Longer and gradual tapers might successfully ease women off HT. Long-term maintenance of a lowered dose that is acceptable to the woman or transitioning women to transdermal products might be associated with lower risk for stroke and thromboembolism.[28–30]

Strengths of the study include the large population-based sample from two states on opposite US coasts, increasing the generalizability of our findings. However, it must be noted that our sample was 90% white, and our results do not necessarily reflect the views of women of other race/ethnicities. We also asked detailed questions about symptoms on HT discontinuation, the degree to which women were bothered by their symptoms, and whether the symptoms were a cause of HT resumption, providing a depth of understanding about the process of HT discontinuation not necessarily found in prior studies.

Our study also has limitations. Because the study was cross-sectional, we were reliant on women's impressions about the reasons for their HT decisions rather than on real-time recording of symptoms during HT discontinuation. The duration of time since the most recent HT discontinuation attempt varied, and this may have influenced women's responses.

The evidence to date suggests that many women will try and fail to discontinue HT pills and patches, but we do not know the optimal approach to minimize symptom return. Less positive attitudes about HT, the belief that menopause is a natural event, less bother from sleep- and mood-related symptoms, provider advice to quit, and an overall willingness to cope with symptoms appeared to drive successful discontinuation. These results suggest that provider assistance in managing symptoms, particularly mood and sleep disturbances, as well as discussions to help women find ways to cope with symptoms, may be critical is assisting women in successfully discontinuing HT.

Acknowledgments

This study was funded by the National Institutes of Health, National Institute on Aging, grant R01 AG022578.

Author Disclosure Statement

No competing financial interests exist.

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