



## Original Article

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# Perceptions of Postmenopausal Symptoms and Treatment Options among Middle-Aged Korean Women

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**Purpose:** To investigate the perceptions of postmenopausal symptoms and treatment options among middle-aged Korean women.

**Materials and Methods:** This cross-sectional study included 2330 Korean women. The women were administered a structured questionnaire to collect sociodemographic data and information regarding menopause and its treatment.

**Results:** More than half (65%) of the participants perceived menopause as a disease, and 66.8% knew hormone therapy (HT) is available for menopausal symptom treatment. However, only 19.7% of participants visited clinics for HT. The most common reasons for having negative views about HT were its adverse reactions (47.3%) and concerns about developing cancer (41.1%). For symptom management, 36.5% of the participants tried lifestyle modification instead of HT.

**Conclusion:** The majority of Korean women regarded menopause as a disease. They were aware of HT for menopausal symptom treatment, but the use of HT was relatively low. Education about the safety and positive effects of HT and the importance of professional healthcare should be provided.

**Key Words:** Postmenopause, hormone replacement therapy, middle aged

## INTRODUCTION

Menopause is the cessation of menstruation for more than 1 year, owing to depletion of ovarian function.<sup>1</sup> As the life expectancy of women has increased, presently, approximately one-

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•The authors have no financial conflicts of interest.

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third of a woman's life is postmenopausal. Women experience several postmenopausal symptoms, and management of these symptoms is crucial for maintaining their quality of life. Vasomotor symptoms, insomnia, vaginal dryness, and other such symptoms are associated with the postmenopausal period, and they can impair woman's normal function and well-being.<sup>2</sup> Hormone therapy (HT) is the most effective treatment for severe postmenopausal symptoms.<sup>3,4</sup> However, there are several other non-hormonal treatment options, such as health functional foods, oriental medicine, and relaxation therapy. After the Women's Health Initiative (WHI) study, there has been some confusion about whether women experiencing menopausal symptoms should utilize HT.<sup>5</sup> Many women have opted for non-hormonal treatments, such as health functional foods, relaxation therapy, exercise, or diet. Nevertheless, the effects of these non-hormonal treatments are not as promising as those of HT.<sup>6</sup>

There have been several trials worldwide in finding out the middle-aged women's perception of menopause and its treatment methods. A Belgian study used an internet survey to obtain information from 600 postmenopausal women. Almost all participants (98%) were aware of menopause, and 82% knew the different treatment options. Interestingly, HT was used significantly more often by French-speaking women (32%) than by Dutch-speaking women (9%).<sup>7</sup> On the other hand, a Chinese study has shown that HT awareness among women was only 3.5% and that, although most Chinese women had knowledge of menopause, they thought menopausal symptoms should not be treated.<sup>8</sup> A study from Central America reported that women considered HT as a treatment option in 27.2%, but the actual use was rather low (2.7%).<sup>9</sup> Different cultures and socio-economic backgrounds are reflected in the different results in these studies. Due to this background, the present study aimed to investigate the perceptions of postmenopausal symptoms and treatment options among Korean middle-aged women.

## MATERIALS AND METHODS

This study was done during the "2015 Cool Diva campaign" supervised by the Korean Menopause Society. The study enrolled 2330 Korean women aged 45–65 years. 'Middle-aged' women are defined as women in their perimenopausal and postmenopausal period, and 45–65 years of age is the correlated period. The participants included menopausal (45.1%) and perimenopausal women. After stratified sampling, random quota sampling of the participants was performed. Sociodemographic data, such as age, education level, resident city, occupation, and income, were collected. This study used a smartphone survey application (<http://ovey.co.kr>) with a structured questionnaire composed of 21 questions with regard to the following three categories: general perceptions of menopause, treatment options, and postmenopausal symptoms and their treatments. The survey was conducted for 3 days from June 16 to 19, 2015. The study subjects randomly participated the mobile survey at their own will and were rewarded with an item they chose after they finished the survey. The survey was automatically finalized once the number of participants reached 2330. The study was performed according to the tenants of the Declaration of Helsinki and was approved by the Institutional Review Board of Yonsei University Health System, Severance Hospital (4-2015-0756).

The first questionnaire category (general perceptions of menopause) included questions on whether the study participants perceived menopause as a disease. It also included questions on the source of information about menopause. The second category (treatment options) had the following three topics: HT, health functional foods, and visiting gynecology clinics. The study participants were asked whether they were aware about HT or health functional foods and their opinion on these

treatments. They were also asked whether they had visited gynecology clinics for postmenopausal symptoms and if they were inclined to visit such clinics in the future. The third category (postmenopausal symptoms and their treatments) included questions on whether the participants experienced certain postmenopausal symptoms and whether they tried to improve the symptoms. It also included questions on the approaches to handle the symptoms and the effectiveness of the treatment approaches. Finally, the participants were questioned on whether they had discontinued HT previously and on the reasons for discontinuing HT. Statistical analysis was done using Pearson's chi-square test by SPSS ver. 23 (IBM, Armonk, NY, USA).

## RESULTS

The sociodemographic characteristics of the study participants are presented in Fig. 1. Approximately 70% of the study participants were aged 45–54 years and lived in Seoul (the capital of Korea) or nearby Gyeonggi province. Additionally, approximately 50% were working, 40% were homemakers, and more than 60% had college education.

With regard to the first questionnaire category (general perceptions of menopause), 65% of the participants recognized menopause as a disease that needs treatment. The perception of menopause as a disease was greater in younger participants than in older participants (70.5% for participants in their late 40s, and 56.7% for participants in their early 60s). Participants who had high income had a tendency to recognize menopause as an illness (72.5%) (Supplementary Table 1, only online).

For obtaining information about menopause, a majority of participants (64.6%) depended on their friends or family members, and many relied on mass media, such as TV/radio (50.5%) and the internet/social network services (SNS) (45.0%). High proportions of participants, especially in their late 40s (50.7%) and early 50s (44.3%), obtained information from the internet/SNS (Supplementary Table 2, only online).

With regard to the second category (treatment options), 66.8% of the participants were aware that HT is available for menopausal symptom treatment. Awareness about HT was greater among participants in their early 60s than among those in their late 40s (81.9% vs. 63.9%) and greater among participants with high income than among those with low income (72.5% vs. 58.0%). Moreover, awareness about HT was higher among participants who considered menopause as a disease than among those who did not consider menopause as a disease (70.7% vs. 59.6%) (Supplementary Table 3, only online).

A low proportion of participants had positive views about HT (30.9%), and most participants had neutral views (61.7%). A very low proportion of participants had negative views about HT (7.3%). Among participants in their late 40s, 33.0% had positive views, and among participants in their early 60s, 69.4%

had neutral views about HT. Participants who perceived menopause as a disease had more positive views about HT (40.7%) than those who did not (Supplementary Table 4, only online). The most common reasons for having negative views about HT were its adverse reactions (47.3%) and concerns about developing cancer (41.1%) (Supplementary Table 5, only online).

For alleviating menopausal symptoms, 42.8% of the participants believed that simple lifestyle modifications would be effective, while 30.2% and 14.7% believed that HT and health functional foods would be effective, respectively (Table 1) (Sup-

plementary Table 6, only online). Low proportion of participants (29.9%) visited clinics for professional consultation and treatment (Supplementary Table 7, only online). The lowest proportion was noted for participants in their late 40s (19.6%), and with age, the proportion of participants who sought professional help increased (early 50s, 35.5%; late 50s, 40.4%; early 60s, 43.3%). Moreover, clinic visits were more common among participants who considered menopause as a disease than among those who did not consider menopause as a disease (35.8% vs. 18.9%). The participants' willingness to visit

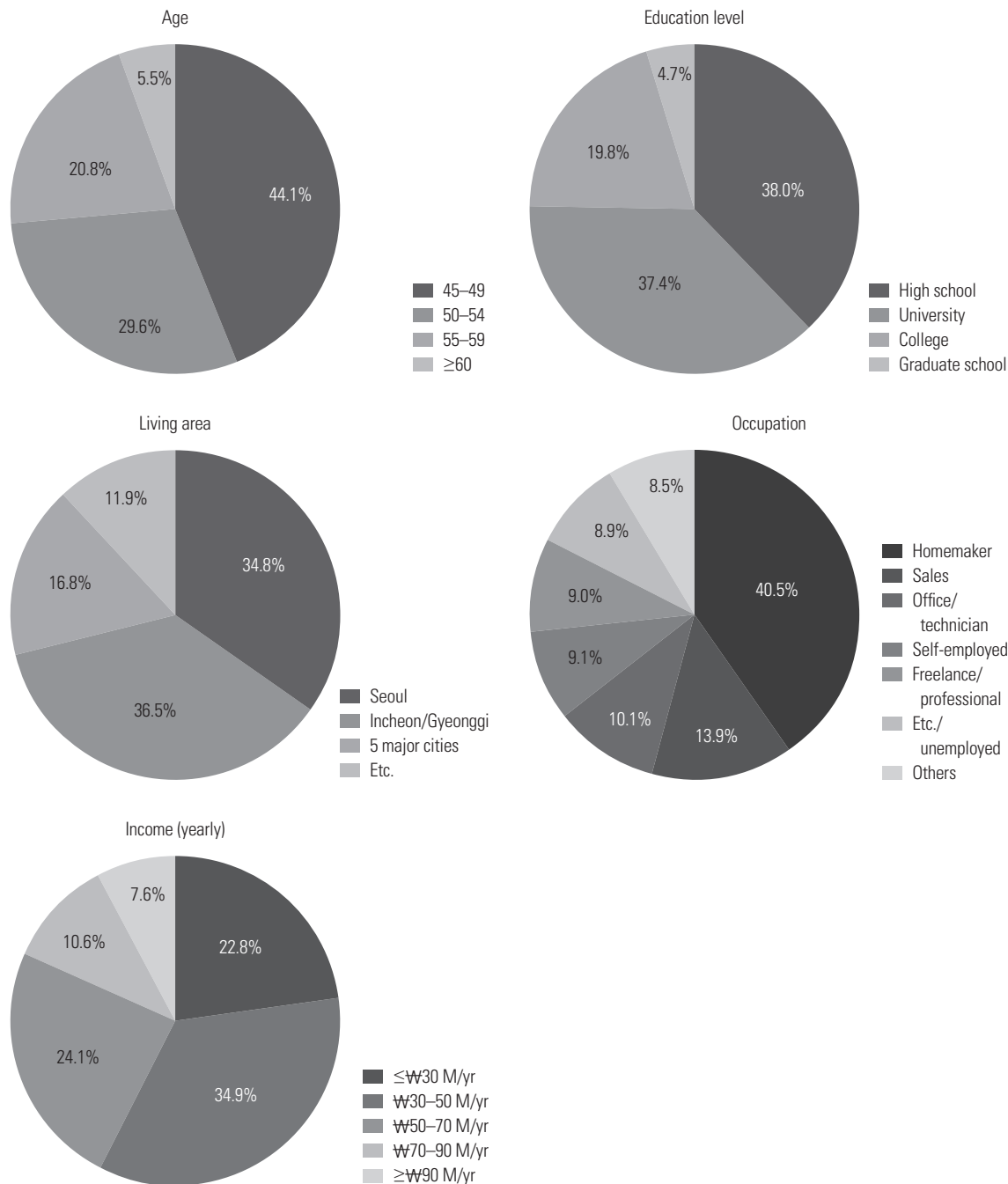


Fig. 1. Sociodemographic data of the study population.

clinics in the future and the reason for avoiding the clinics are described more in Supplementary Table 8 and 9 (only online).

With regard to the third category (postmenopausal symptoms and their treatments), 70.8% of the menopausal participants experienced menopausal symptoms (Supplementary Table 10 and 11, only online). Among the symptoms experienced, hot flushes were the most common (75.4%), followed by vaginal

dryness (50.9%), fatigue (50.3%), and insomnia (47.6%) (Table 2) (Supplementary Table 12, only online). The menopausal symptom that was the most difficult to endure was hot flushes (33.1%), followed by insomnia (15.1%) and arthritic or muscular pain (9.2%) (Supplementary Table 13, only online). Although the most frequently experienced symptoms were vaginal dryness and fatigue, they were not considered difficult to endure by

**Table 1.** Treatment Options that are Considered to be Helpful for Alleviating Menopausal Symptoms

	All	Age (yrs)				p value*
		45-49	50-54	55-59	≥60	
Number of participants	2330	1028	690	485	127	
Lifestyle modifications (%)	42.8	41.5	45.5	40.4	47.2	0.201
Clinic visit or HT (%)	30.2	33.1	26.8	29.1	29.1	0.035
Health functional foods (%)	14.7	14.1	15.7	15.5	11.0	0.372
None (%)	6.7	5.4	6.7	9.3	7.9	0.038
Oriental medicine (%)	3.6	3.8	3.0	3.9	3.9	0.773
Phytoestrogens (%)	1.7	1.7	2.2	1.4	-	0.465
Others (%)	0.3	0.4	0.1	0.4	0.8	
Total	100.0	100.0	100.0	100.0	100.0	

HT, hormone therapy.

\*Pearson's chi-square test.

**Table 2.** Experienced Postmenopausal Symptoms

Multiple choices	All	Age (yrs)				p value*
		45-49	50-54	55-59	≥60	
Number of participants	743	88	294	283	78	
Vasomotor symptoms (%)	75.4	79.5	74.5	76.0	71.8	0.767
Vaginal dryness (%)	50.9	47.7	54.8	49.5	44.9	0.288
Fatigue (%)	50.3	55.7	54.4	46.3	43.6	0.115
Insomnia (%)	47.6	46.6	51.4	47.0	37.2	0.162
Palpitation (%)	42.0	47.7	41.2	38.9	50.0	0.258
Depression (%)	40.6	47.7	40.5	38.9	39.7	0.615
Temperament (%)	38.6	43.2	42.5	35.7	29.5	0.106
Arthritic/muscular pain (%)	37.7	39.8	42.2	35.7	25.6	0.028
Perspiration (%)	35.7	36.4	39.1	33.9	28.2	0.224
Dizziness (%)	18.2	22.7	19.0	17.3	12.8	0.352
Headache (%)	16.8	27.3	17.0	13.8	15.4	0.031

\*Pearson's chi-square test.

**Table 3.** Attempted Treatments by the Participants

	All	Age (yrs)				p value*	Menopause as a disease		p value*
		45-49	50-54	55-59	≥60		Yes	No	
Diet and exercise (%)	36.5	33.0	35.7	39.2	33.3	0.615	30.8	47.3	<0.001
Clinic visits and HT prescription (%)	19.7	19.3	16.3	20.5	29.5	0.073	26.3	7.0	<0.001
Health functional foods (%)	11.4	13.6	13.6	10.2	5.1	0.155	12.5	9.4	0.2
Clinic visits and non-hormonal treatment prescription (%)	10.5	14.8	12.6	7.8	7.7	0.113	14.4	3.1	<0.001
Etc. (%)	3.0	2.3	3.4	3.2	1.3		2.9	3.1	
None (%)	19.0	17.0	18.4	19.1	23.1	0.768	13.1	30.1	<0.001

HT, hormone therapy.

\*Pearson's chi-square test.

many participants (8.3% and 7.5%, respectively).

Table 3 shows the actually attempted treatment options by the survey participants (Supplementary Table 14 and 15, only online). Once again, the highest number of women tried lifestyle modifications, such as diet and exercise (36.5%), and HT was the second popular choice (19.7%). The comparisons between the groups perceiving menopause as a disease or not show significant differences. People who perceived menopause as a disease visited clinics and used HT or non-hormonal treatments more than the counterpart. On the other hand, those who did not think menopause as a disease tended to do nothing for treatment.

Among the participants who used HT, a high proportion of participants stopped using HT (78.1%) (Supplementary Table 16, only online). The main reasons for discontinuation of HT were concerns about developing cancer (36.8%) and experiencing adverse reactions (23.7%) (Supplementary Table 17, only online).

## DISCUSSION

This study demonstrated the current state of perceptions of Korean women with regard to postmenopausal symptoms and their management. A relatively large number of participants recognized menopause as a disease that needs treatment and obtained information from friends/family members and the internet or social media rather than from professionals. Many participants preferred lifestyle modifications or health functional foods to HT and believed that these approaches could alleviate menopausal symptoms. Additionally, participants who used HT but discontinued treatment were mostly worried about developing cancer and experiencing adverse reactions.

The results of previous epidemiological studies on the awareness of menopause among Korean menopausal women performed by the Korean Menopause Society<sup>10-12</sup> are comparable to the results of our study. Although the study population differed among the previous studies and our study, with regard to the number of participants and age groups, the finding that more than half of the participants knew about HT was similar. On the other hand, the percentage of actual users of HT decreased from 24.3% in the year 2002<sup>11</sup> to less than 20% in this study. It is quite discouraging to find that HT utilization has not increased among postmenopausal women, although more than a decade has passed since the announcement of the previous studies. However, the HT awareness rate is not so low when compared to studies from other countries. A Pakistan study showed that only 5% of the participants had knowledge about HT even though the study population included highly educated Asian women.<sup>13</sup> A recent Belgian study revealed 16% of 696 postmenopausal women were using HT.<sup>7</sup> The Central American women also showed low percentage; 10.2% were currently using HT, whereas 13.8% previously used HT but ab-

andoned it.<sup>9</sup> Therefore, compared to these reports from around the world, about 20% of Korean women using HT do not seem to be lagging behind.

The present study differs from previous reports<sup>11,12</sup> by the Korean Menopause Society in several aspects: first, this was the largest study, including over 2300 women, whereas previous studies had 1201 participants. Second, it was the first attempt to utilize a mobile application survey, whereas previous studies were done by face-to-face interviews or answering questionnaires on paper. Third, the results of a 2002 study showed that 53.6% perceived HT as a treatment option, and the present study showed an increased percentage of women who knew of HT (65.6%). Obviously, people had easier access to information about HT these days than in the past. Additionally, the most common reason for stopping HT in the past was the adverse effects of HT, whereas in the present it was the fear of getting cancer. This result also demonstrates that women today receive various sources of indiscriminate information about HT and the risk of cancer.

Many Korean women believed that their menopausal symptoms could be effectively treated with lifestyle modifications, such as diet and exercise. Some women had the false idea that HT is detrimental to the body's natural system.<sup>11,12</sup> Although there was no significant difference among different age groups, it was also evident from this study that the primarily considered treatment option among Korean women was lifestyle modification. Therefore, health care professionals in Korea should educate women and their family members about the benefits of HT and that it is more effective than lifestyle modification.

Koreans have easy access to the internet and mass media, and this development of information technology in Korea has resulted in greater knowledge about menopause and its treatments among Korean women than women from other countries. A previous Chinese study<sup>8</sup> reported that HT awareness among Chinese women was only 3.5%, and another study from Central America<sup>9</sup> reported it was 27.2%. However, in our study, the proportion of women who were aware of HT was 66.8%. Although a high number of Korean women were aware about HT, the actual number of HT users was not as high as that of women perceiving HT, which indicates that information technology has some limitations. Our study found that younger middle-aged women in their late 40s and early 50s were avid users of the internet and mass media and that these were the primary sources for information about menopause. However, regardless of easy access to abundant information about menopausal treatments via the internet or mass media, the most common treatment method chosen by most women was still 'lifestyle modification'.

After the publication of the WHI study,<sup>14-17</sup> which was overstated in mass media, many individuals became concerned about the breast cancer risk associated with HT, and the number of HT users consequently decreased. The current study found that women tend to think negatively about HT because



of the possible risk of breast cancer. However, a follow-up WHI study showed that the incidence of breast cancer was not greatly influenced by HT, and the combined estrogen-progesterone therapy group was shown to have an increase in the incidence rate by only <1.0 per 1000 women per year of use.<sup>18-20</sup> This demonstrates that the initial findings were exaggerated by mass media, which considerably affected public judgment. There are many treatment options in HT and new approaches, such as tissue-selective estrogen complex, have been introduced to reduce the risk of breast cancer.<sup>21,22</sup> Many women are not aware that there are definite contraindications and indications for appropriate HT usage and that not everyone has the same risks or treatment criteria. The public should be informed that consultations with physicians are important to ensure appropriate and effective treatment.

The present study has some strengths. First, this study had a large population that included women from various backgrounds (e.g., different areas of living, occupations, and education levels). This is the most up-to-date and largest study in a single Asian country. With this representative data, we hope to realize the current status and plan for improvements in any deficiencies found. Second, selection bias was reduced owing to the random selection of participants. Third, the study questionnaires were systematically categorized, and this facilitated a deeper understanding of the study topic.

On the other hand, this study also had some limitations. Since this was a mobile survey without much further assistance or guidance by the survey organizer, some questionnaires may have been skipped or not answered properly by the participants. Also, the data were collected by a smartphone application that only the people who knew this application or were able to use such program participated. Over 60% of the participants had high education levels, and thus, we may need to be careful in interpreting this as the perception of the general Korean population. However, subanalysis according to education level also showed similar results to the main results of this study. As previously described, a high percentage of the Korean public obtains information about HT through mass media or internet. Also, since medicine is such a professional field, the differences in perception of postmenopausal treatments among various education levels seem to be less likely. Furthermore, as this study had a cross-sectional design, the causality of the women's perspectives of HT and socioeconomic or cultural factors could not be determined. Further studies will be needed to assess these aspects.

In conclusion, while high numbers of Korean women were aware about HT, relatively few women selected HT for the treatment of menopausal symptoms, possibly because of information obtained from the internet/mass media and false beliefs about the negative effects of HT. There is a need to improve public awareness of the benefits of HT. Medical professionals will need to educate the public on treatments for menopausal symptoms, and measures should be taken to remove incorrect

information from the internet/mass media.

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