

Frequency and Co-occurrence of Vasomotor Symptoms, Mood Changes, and Sleep Disturbances Across the Menopausal Transition: A Descriptive Study using Secondary Data from the Study of Women's Health Across the Nation (SWAN)



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CONTEXT

- Vasomotor symptoms (VMS), sleep disturbances, and mood changes are commonly experienced by women during the menopausal transition and in the post-menopause, and can negatively affect quality of life.^{1,2}
- Understanding whether these symptoms change in frequency from the menopausal transition into the post-menopause, as well as their co-occurrence, might help improve the care of menopausal women.

OBJECTIVE

- To describe the frequency and co-occurrence of VMS, sleep disturbances, and mood changes in women across the menopausal transition and into the early post-menopause.

METHODS

Data source and study design

- Data were taken from the baseline and first 10 annual follow-up visits (1999–2008) of the Study of Women's Health Across the Nation (SWAN).
- 2066 women who reached natural menopause were included. The visit closest to women's final menstrual period (FMP) was re-assigned as the FMP visit (FMP 0); all other visits were renamed accordingly (Fig. 1).

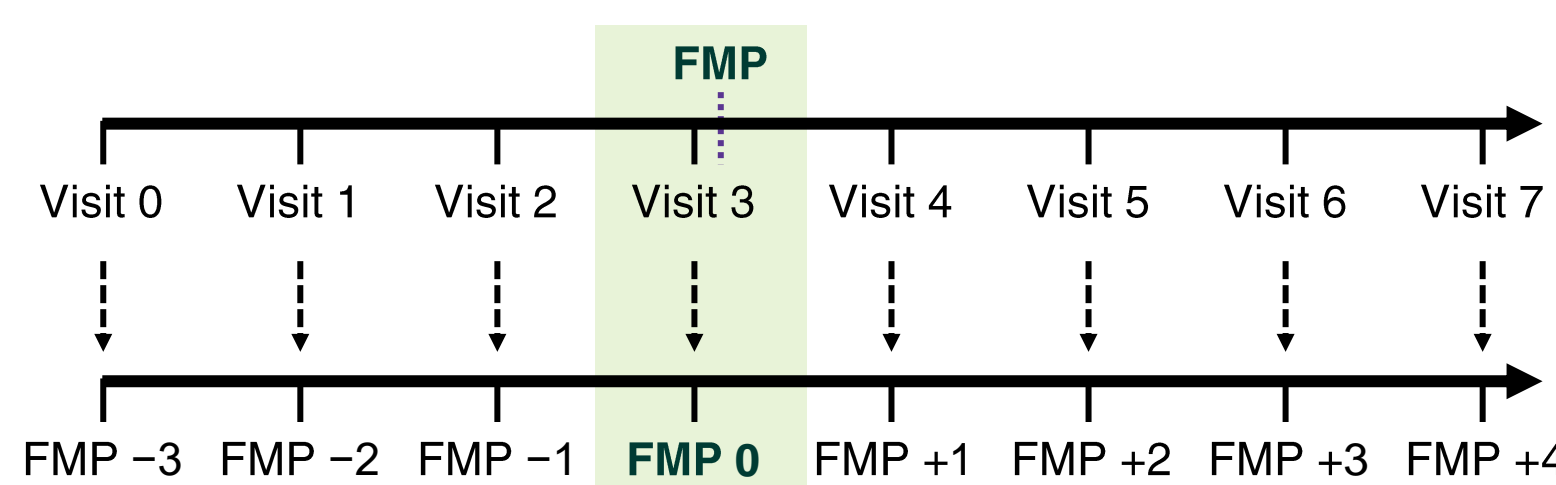


Fig. 1. Reassignment of visit days around the FMP (example of a patient whose FMP was closest to visit 3).

Outcomes

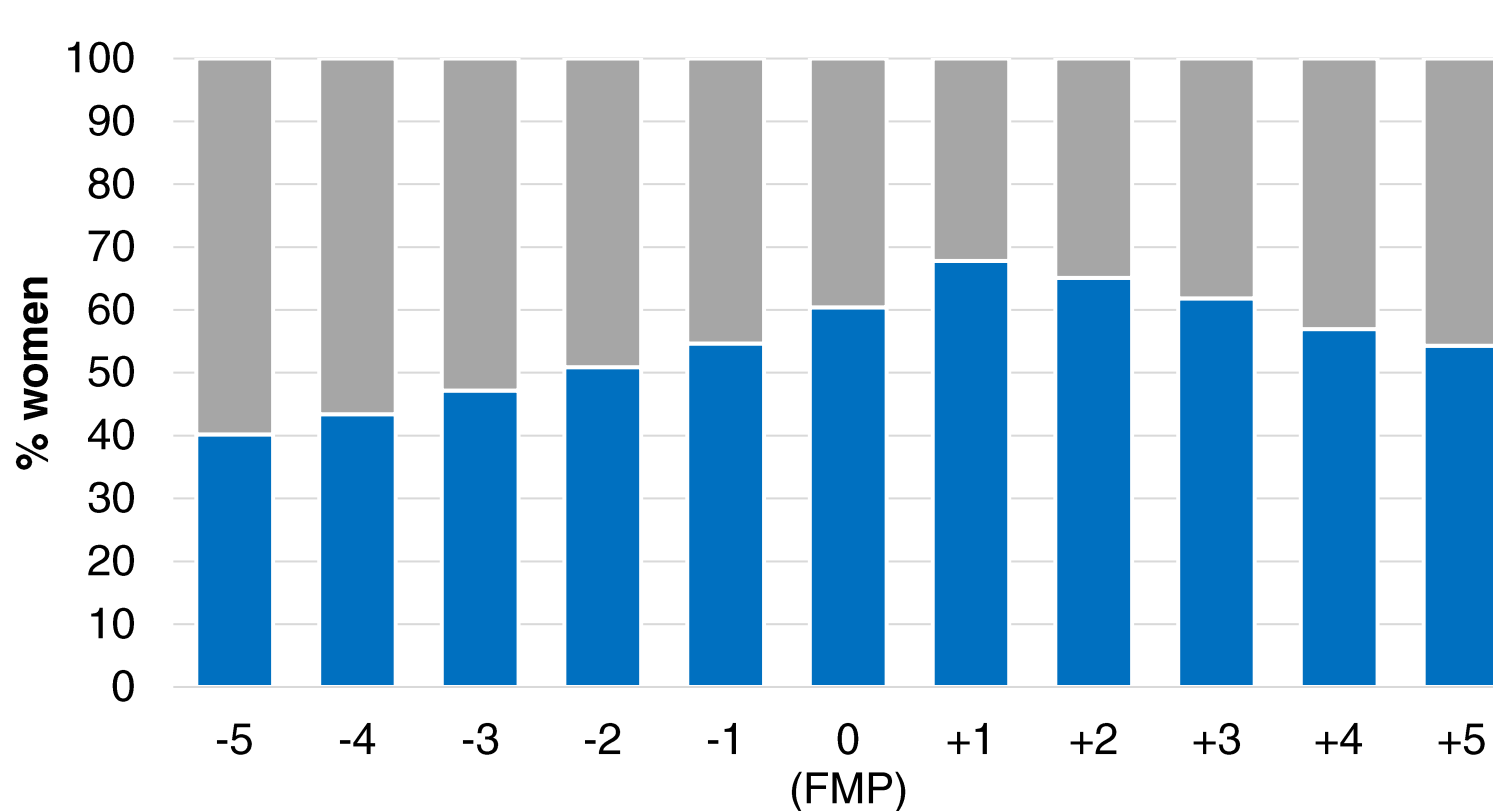
- Symptoms evaluated at each visit were:
 - a) VMS** (hot flushes and/or night sweats on $\geq 1-5$ days in the past 2 weeks, yes/no)
 - b) sleep disturbances** (waking several times/night on $\geq 1-2$ nights/week in the past 2 weeks, yes/no)
 - c) frequent mood changes** (involving anger, irritation anxiety, nervousness, fear, low mood, or sadness on $\geq 1-5$ days in the past 2 weeks, yes/no).
- The number (%) of women with each symptom, individually and in combination, was assessed for each annual visit 5 years before and after FMP 0 (i.e. FMP -5 to FMP +5).

RESULTS

Characteristics of SWAN participants

- Mean age of the 2066 SWAN participants at FMP 0 was 51.2 years (± 2.6 ; range, 42–61).
- Across visits, use of hormone therapy ranged from 3% of women (FMP -5) to 13% (FMP 0 to FMP +3).

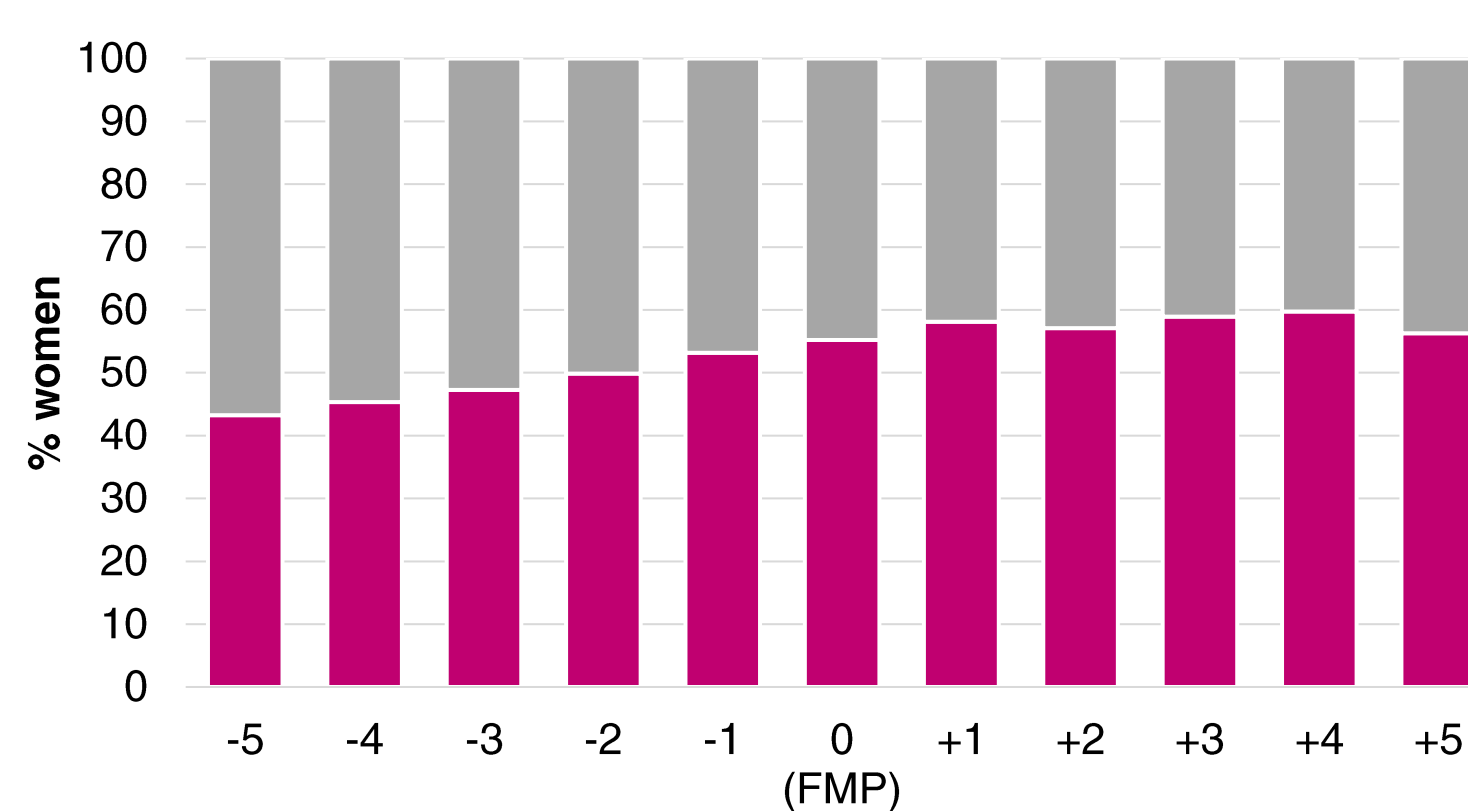
a) VMS



Symptom frequencies over time

- VMS increased from 40% of women (FMP -5) to 68% (FMP +1) and then decreased at each subsequent visit, although remained $>50\%$ (Fig. 2a).
- Sleep disturbances increased from 43% of women

b) Sleep disturbances



(FMP -5) to 58% (FMP +1), remaining at a similar frequency ($\sim 56\%$ to 60%) thereafter (Fig. 2b).

- Frequent mood changes gradually decreased from 47% (FMP -5) to 33% (FMP +5) (Fig. 2c).

c) Frequent mood changes

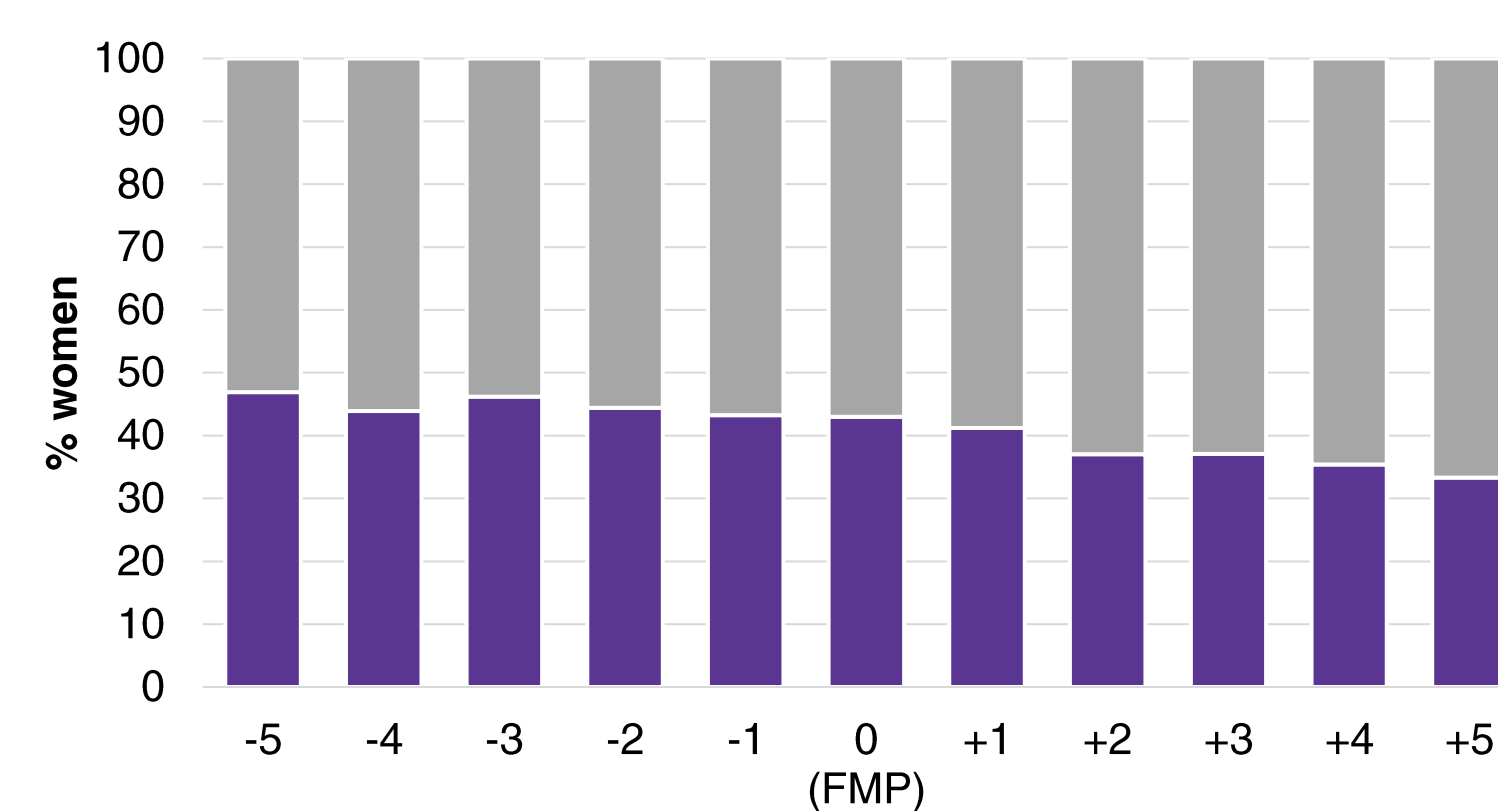


Fig. 2. Frequency of a) VMS, b) sleep disturbances, and c) frequent mood changes over the menopausal transition and into the post-menopause. Note: the x-axis shows the annual visit in relation to the final menstrual period (FMP) 0 visit; women with missing data at a study visit were excluded from the analysis for that visit.

Symptom frequencies and co-occurrence

- Across visits, most women had ≥ 1 symptom, reaching 87% at FMP +1 (Fig. 3).
- Reports of a single symptom at a visit were 8% to 15% for VMS, 10% to 16% for sleep disturbances, and 4% to 12% for frequent mood changes (Fig. 3).
- Co-occurrence of two symptoms (with/without the third symptom) was 22% to 44% for VMS plus sleep disturbances, 22% to 32% for VMS plus frequent mood

changes, and 22% to 29% for sleep disturbances plus frequent mood changes.

- The most notable increase in frequency was for the co-occurrence of VMS plus sleep disturbances: 8.5% at FMP -5 rising to $\sim 21\%$ post FMP (Fig. 3).
- Co-occurrence of all three symptoms was 14% to 22% (highest at FMP +1) (Fig. 3).

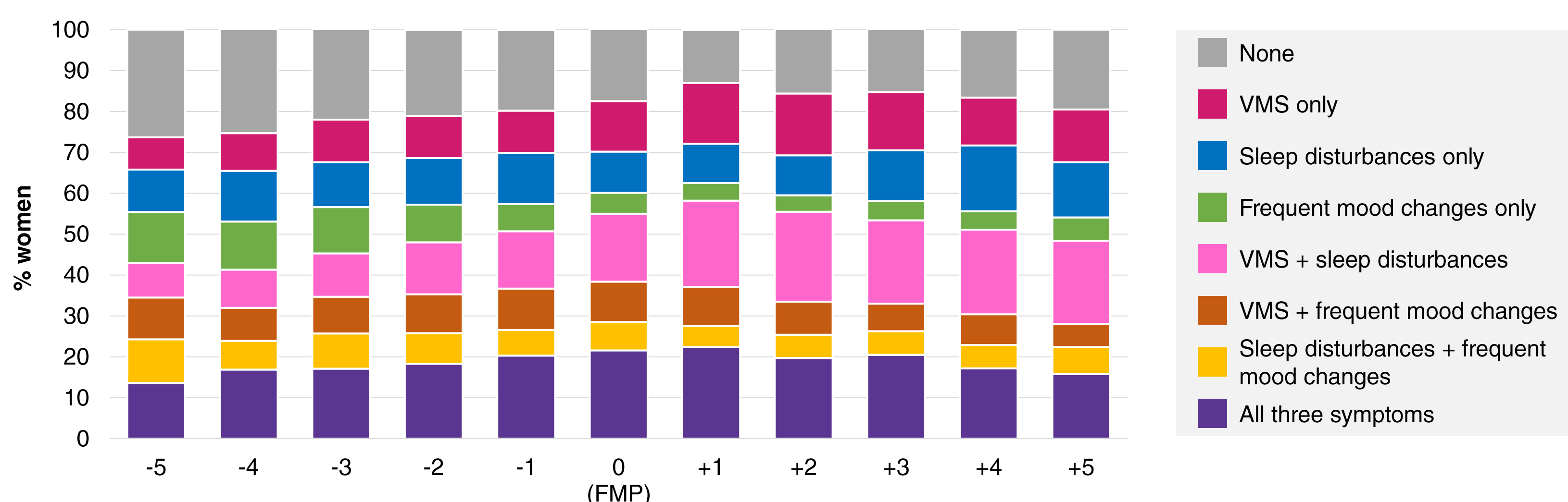


Fig. 3. Frequency and co-occurrence of symptoms in the 5 years before and after the final menstrual period (FMP). Note: data shown for co-occurrence of two symptoms refer to having those two symptoms only.

CONCLUSIONS

- In this study of US women experiencing natural menopause, VMS and sleep disturbances increased up to the FMP, and then decreased slightly (VMS) or remained constant (sleep disturbances); in contrast, frequent mood changes gradually decreased across the menopausal transition.
- VMS, sleep disturbances, and frequent mood changes commonly co-occurred but also often appeared independently. Furthermore, the frequency of sleep disturbances alone was comparable to the frequency of VMS alone.
- The symptom combinations seen in this study indicate that the care of menopausal women should be personalized according to individual needs.

References

- Santoro et al. *J Clin Endocrinol Metab.* 2021, Vol. 106, No. 1, 1–15.
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Acknowledgement

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