

Burden of sleep disturbances and vasomotor symptoms on work productivity and healthcare resource utilization among women experiencing menopause in the US

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INTRODUCTION

→ Sleep disturbances (SDB) and vasomotor symptoms (VMS) (also referred to as hot flashes or night sweats), are prevalent among women undergoing menopause and significantly affect economic and resource burden. These outcomes can lead to considerable reductions in workplace efficiency and an increase in healthcare costs^{1,2}.

Sleep disturbances and VMS can adversely affect a woman's mood and well-being.

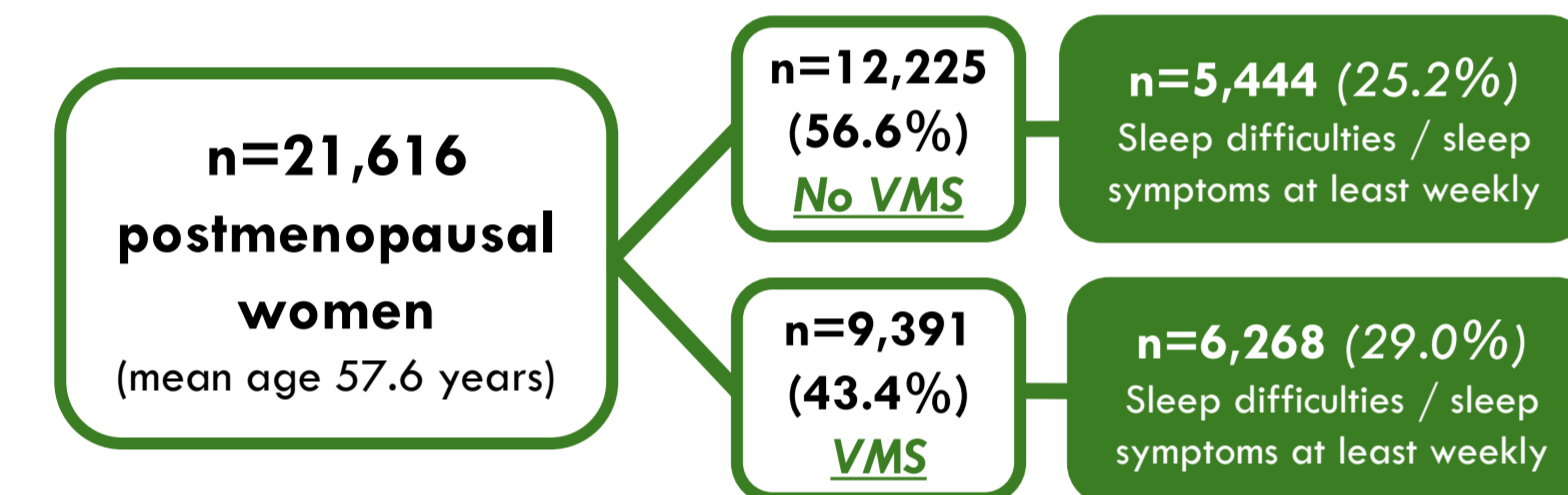
This study evaluated the effect of sleep disturbances and vasomotor symptoms among US postmenopausal women on work productivity and activity impairment (WPAI) and healthcare resource use (HCRU).

METHODS

→ Data were analyzed from **postmenopausal women** aged 40–65 years who completed the internet-based US National Health & Wellness Survey in either 2019 or 2021 (the most recent years with available data from sleep-related patient-reported outcome measurements). Women were identified as postmenopausal if their menstrual bleeding ceased >12 months ago. They were then categorized by the **presence or absence of VMS** (defined as those reporting hot flashes or night sweats in the past 12 months), followed by the **presence or absence of sleep disturbances**. Women with sleep disturbances were defined as those who self-reported sleep difficulties in the past 12 months or sleep symptoms experienced at least weekly, including difficulty falling asleep, night-time awakenings, and poor sleep quality. These sleep disturbances were considered likely to be related to menopause. **WPAI scores were assessed among employed respondents only for absenteeism, presenteeism, and work productivity; activity impairment included all respondents. WPAI scores are presented in Figure 2 as percentages, in which a higher score indicates higher impairment. HCRU outcomes included self-reported health care provider (HCP) visits, emergency room (ER) visits, and hospitalizations in the prior 6 months.** Multivariable analyses assessed the association of VMS and sleep on WPAI and HCRU outcomes.

RESULTS

Figure 1. Prevalence of VMS and sleep disturbances



Baseline Characteristics	VMS and SDB	No SDB, but with VMS	SDB, but no VMS	No VMS or VMS
Age, Mean, SD	56.5 (5.5)	56.6 (5.5)	58.6 (5.7)	58.4 (5.8)
Employed (yes, no), n, %	3402 54.3%	1898 60.8%	2794 51.3%	3994 58.9%
Race/Ethnicity, n, %				
White	5032 80.3%	2250 72.0%	4597 84.4%	5305 78.2%
Black	520 8.3%	479 15.3%	252 4.6%	555 8.2%
Hispanic	347 5.5%	195 6.2%	273 5.0%	406 6.0%
Asian	118 1.9%	106 3.4%	134 2.5%	312 4.6%
Other	251 4.0%	93 3.0%	188 3.5%	203 3.0%
Insurance (yes/no) n, %	5781 92.2%	2885 92.4%	5049 92.7%	6252 92.2%
CCI, Mean, SD	0.73 1.22	0.43 0.92	0.69 1.15	0.35 0.83

Figure 2. Marginal mean estimates for WPAI scales: Absenteeism, Presenteeism, Work Productivity, and Activity Impairment Adjusted for confounder variables

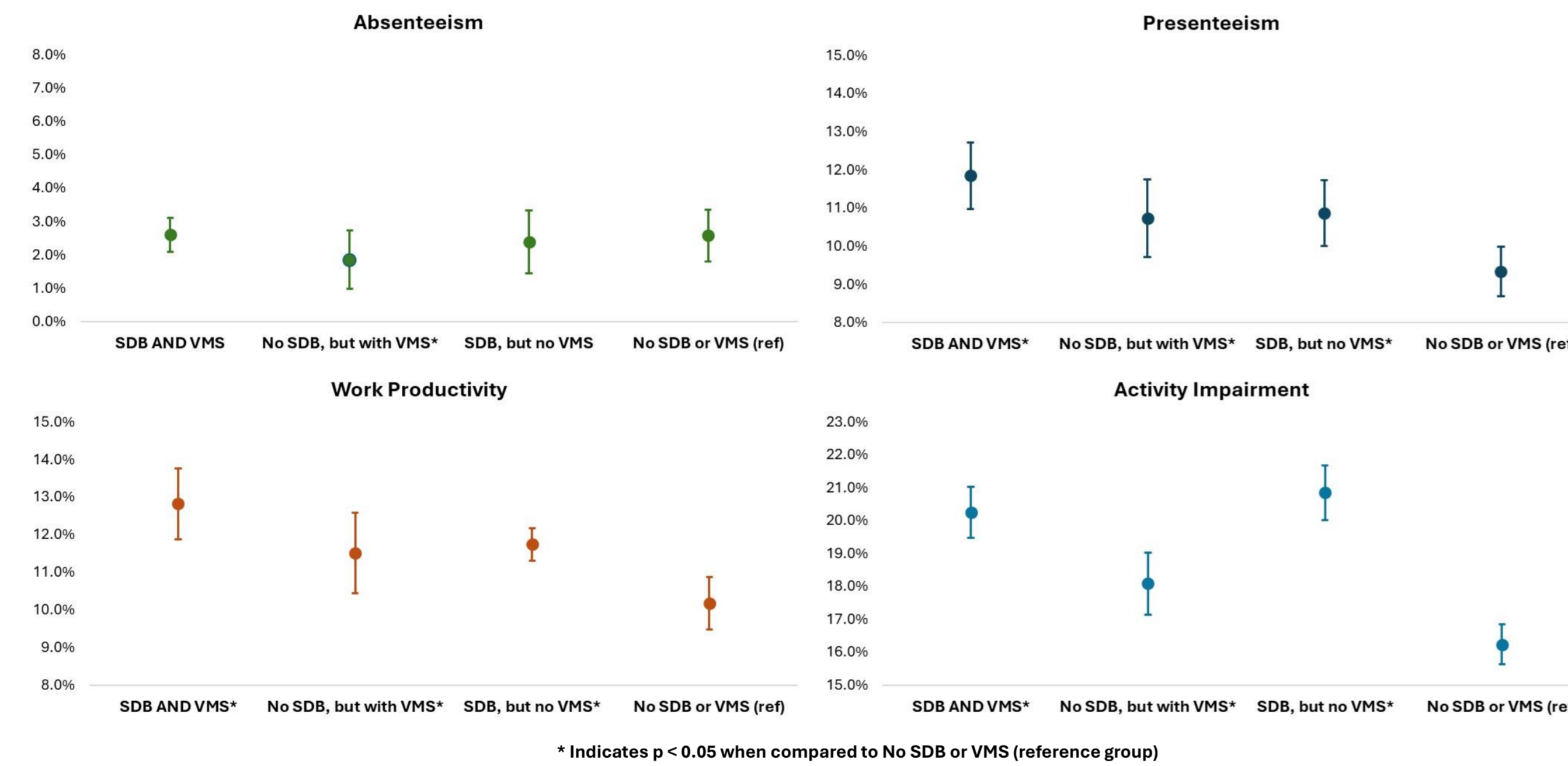
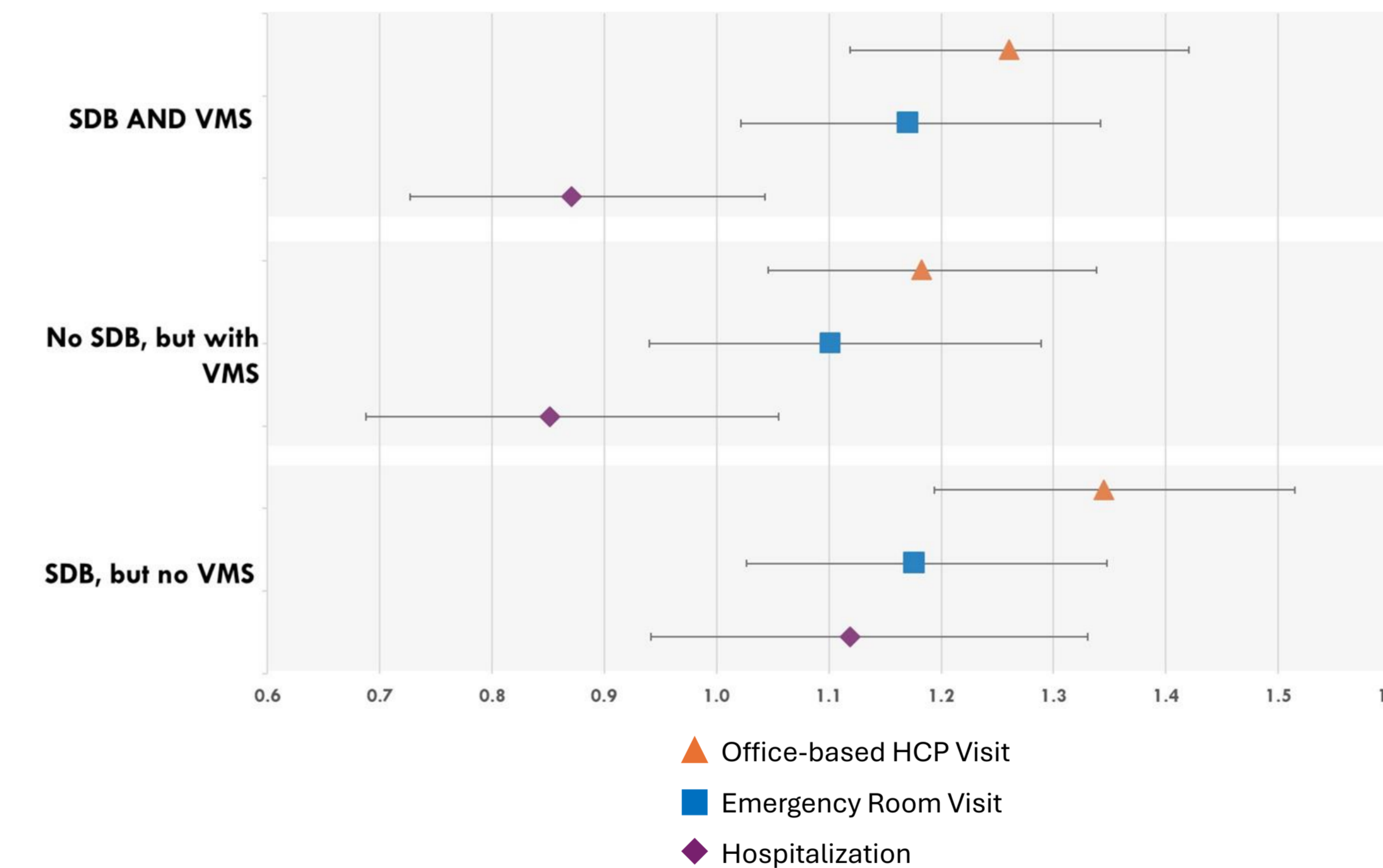


Figure 3. Odds Ratio of a HCP visit, ER visit, or hospitalization in the past 6 months compared to those with neither SDB or VMS Adjusted for confounder variables



→ VMS and sleep conditions were both prevalent among postmenopausal women (Figure 1). Women experiencing both SDB and VMS showed the highest absenteeism [estimated marginal means (EMM):2.6%], presenteeism [EMM:11.8%], and work productivity impairment [EMM:12.8%], followed by SDB only [EMM:2.4%, 10.9%, 11.7%, respectively], then VMS only [EMM:1.9%, 10.7%, 11.5%, respectively]. Among all respondents, women experiencing both SDB and VMS and SDB only had most activity impairment [EMM:20.3%,20.8% respectively] compared to those experiencing VMS only or neither SDB nor VMS [EMM:18.1%, 16.2%].

Women experiencing SDB only [OR:1.35], VMS only [OR:1.18], and both [OR:1.26] were more likely to have an HCP visit, compared to those experiencing neither SDB nor VMS [SDB+VMS=3.94, SDB only=3.95, VMS only=3.50, neither SDB nor VMS= 3.24] (not shown in poster).

CONCLUSIONS

The prevalence of sleep conditions, including menopause-related sleep disturbances, was high overall, **regardless of the presence or absence of VMS.** Sleep disturbances were a large driver in WPAI and HCRU burden among women experiencing menopause, **independently of VMS.**



Among postmenopausal women, **presenteeism and activity impairment scores were greater among women with sleep disturbances than those without.**



Independent of the presence of VMS, **those with SDB had higher odds of HCP visits and ER visits among postmenopausal women.**



Addressing sleep disturbances among menopausal women is crucial in **mitigating the negative impact on economic and resource burden and fostering better overall health.**

DISCLOSURES

→ This study was funded by Bayer AG, Berlin, Germany. CDK, KG, KRB, CM, NS, and JN are employees of Bayer. VB and LH are former employees of Bayer. KM, LY, and SD are employees of Oracle Life Sciences.

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