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Menopausal vasomotor symptoms are associated with poor self-assessed work ability

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ABSTRACT

Objectives: It has been hypothesised that vasomotor symptoms (VMS), the hallmark of menopause, may affect women's workplace performance. The aim of this study was to investigate the association between VMS and self-reported work ability, taking into account socio-demographic characteristics.

Study design/Main Outcome measures: A national cross-sectional survey of women, aged 40–65 years, was conducted between October 2013 and March 2014. Participants provided socio-demographic and lifestyle factors and completed the Menopause Specific Quality of Life Questionnaire (MENQOL) and the Work Ability Index (WAI).

Results: Of 2020 women who comprised the study sample, 1274 were in paid employment and 1263 completed the WAI. The WAI score was good-excellent for 81.5% of women and poor-moderate for 18.5%. After adjustment for socio-demographic characteristics, having any VMS was associated with greater likelihood of poor-moderate work ability [odds ratio (OR) = 2.45, 95% CI 1.69–3.54]. Poorer work ability was significantly and independently associated with being un-partnered, obese or overweight, smoking, being carer and having insecure housing finance, but not with age.

Conclusions: Overall, most women functioned well at work. We observed an association suggesting a relationship not only between menopausal VMS and personal wellbeing, but also between VMS and self-assessed work ability. Although 4 in 5 women functioned well at work, recognition of the association with VMS may improve wellbeing and work performance of working women at midlife.

1. Introduction

The proportion of women employed after the age of 40 years has increased over the last decade [1,2]. In 2011, 79% of Australian women aged 45–54 years were in paid employment compared with 47% in 1980 [3]. The average age at which women experience natural menopause ranges from 48 to 51 years in different countries [4]. Hence most women are in the workforce when they transit the menopause and enter their early postmenopausal years. Approximately 80% of women experience vasomotor symptoms (VMS; hot flushes and night sweats) in association with menopause [5]. Other common menopausal symptoms include lowered mood, fragmented sleep, joint pain and fatigue [4]. One-third of postmenopausal women younger than 55 years rate their VMS as moderate-severely bothersome [6] and VMS persist beyond the 6th decade for about 10% of women [6,7].

A number of factors have been shown to affect work ability, such as older age, level of education, being overweight and smoking [8]. Moderately-severely bothersome VMS are associated with impaired psychological and general wellbeing in women at midlife [9] which in turn may adversely impact work performance. A small cross-sectional study of health care workers in the Netherlands found that psychological and somatic symptoms associated with menopause accounted for as much as 36% of the variation in how well women reported being able to perform their work [10]. Community-based data for the association between menopausal vasomotor symptoms and self-reported work ability across a spectrum of occupations are lacking. We have reported on the prevalence and severity of menopausal symptoms in a national study of Australian women aged 40–65 years. This study has provided us with the opportunity to examine the association between VMS and self-reported work ability using validated questionnaires.

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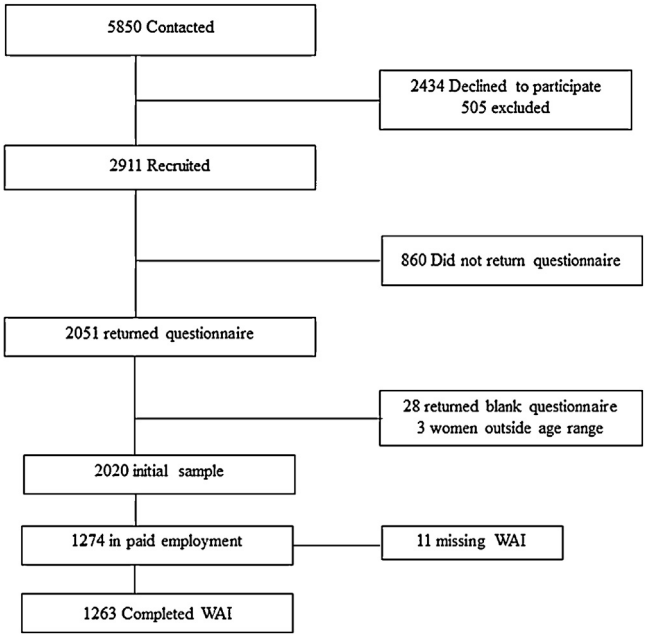

Fig. 1. Study flow diagram. Abbreviation: WAI-Work Ability Index.

2. Methods

2.1. Study population

Study participants were recruited from an established database. Recruitment to the database is based on the Australian electoral roll as previously described [6]. Women in this database, aged 40–65 years, were invited, by telephone, to participate in a questionnaire-based survey of the health of women at midlife. Women were recruited between October 2013 and March 2014. Women were ineligible if they were unable to complete a questionnaire in English. After attaining verbal consent, each woman was sent a study questionnaire with a reply paid envelope. Return of a completed questionnaire was accepted as written informed consent. Questionnaires were electronically scanned and incorporated into an SPSS database. This approach to recruit a representative sample of Australian women has been used in prior studies [11,12]. This study was approved by the Monash University Research Ethics Committee (reference number CF13/1281-2013000648 on 18 July 2013). Informed consent was obtained from all participants.

2.2. Main outcome and measures

Menopausal status (premenopausal, perimenopausal and postmenopausal) was ascertained using an algorithm based on the STRAW10 classification [13,14]. The algorithm incorporates age, history of surgical menopause, menstrual bleeding pattern, reporting of VMS, as well as hysterectomy and use of systemic hormones (contraception or menopausal hormone therapy, MHT).

Menopausal symptoms were assessed by the Menopause-specific Quality Of Life (MENQOL) questionnaire [15]. This instrument measures the presence and severity of VMS, physical, psychological and sexual symptoms over the last 4 weeks. The VMS domain includes hot flushes, night sweats and sweating. Presence or absence and severity of VMS, assessed by MENQOL, was considered in this analysis. Women report (yes/no) if they have experienced a symptom in last 4 weeks and the extent to which they are bothered (0, no bother to 6, extreme bother). Each individual question has a range of 1–8, with 1 being no symptoms. The symptoms are rated on a 7-point likert item and women who ranked their degree of bother as more than the midpoint of the item (score >5–8), were considered to have moderate-severely bothersome symptoms.

Work ability was evaluated using the Work Ability Index (WAI) Questionnaire, developed and validated by the Finnish Institute of Occupational Health [16]. This tool assesses how well a worker reports being able to perform his or her work. The WAI includes 7 domains: current work ability compared with best of lifetime (0–10 points), work ability in relation to job demands: physical, mental or both (2–10 points), number of current diseases diagnosed by a physician (1–7 points), estimated work impairment due to disease (1–6 points), absence due to sickness during the past 12 months (1–5 points), own prognosis of work ability 2 years from now (1, 4 or 7 points), and mental resources (refers to the worker's life in general, both at work and during leisure-time) (1–4 points) [16]. The final WAI score is calculated by summing all the single item scores. Self-reported work ability was categorised as poor-moderate [scores of 7–36] and good-excellent [scores of 37–49] [10,17]. We excluded women who did not complete all items of WAI from the analysis.

The required sample size of 2020 women was based on VMS prevalence as the primary study outcome [6]. We estimated a 30% prevalence of moderate-severely bothersome VMS, with a 95% confidence interval and 2% margin of error [7]. We purposefully sampled women so that the age distribution of our sample population represented the age distribution of the Australian female population in the age range 40–65 years in 2011 [2]. We are well powered with this sample size to model associations between VMS and work ability, adjusted for demographics factors [18].

Socio-demographic variables collected included age, country of birth, ethnicity, relationship status, education, residential location, being a carer, and housing financial security. Lifestyle variables included current smoking, current alcohol consumption and body mass index (BMI) derived from self-reported height and weight. BMI was categorised as: $<25\,kg/m^2$ normal, $25-<30\,kg/m^2$ overweight and $\geq 30\,kg/m^2$ obese. Women were given a list of 17 different occupations from which to choose, including the option of "other" if their occupation was not listed.

2.3. Statistical analysis

Women using systemic hormonal contraception (combined hormonal contraception or systemic progestogen), MHT (estrogen, progestogen or tibolone), 'bioidentical' estrogen or non-hormonal prescription medication specifically for VMS (gabapentin, sertraline, clonidine, venlafaxine) were excluded from analyses of MENQOL. Only women reporting any paid employment were included in the analysis of the WAI.

Frequency distributions (number, percentages, mean, standard deviations, median and ranges) of demographic characteristics of the participants were analysed by two categories of work ability (poor-moderate and good-excellent). Comparison of the 2 groups was made by *t* test or Kruskal-Wallis test for continuous variables or χ^2 test for categorical variables, as appropriate. For comparisons within poor-moderate and good-excellent WAI category, median values for total WAI score and 7 domains were compared using Kruskal-Wallis test.

A logistic regression model was developed for likelihood of having poor-moderate WAI. Independent variables were included in the multivariate logistic regression model analysis according to their significance level in the univariate analysis ($p \leq 0.10$) for the outcome, poor-moderate versus good-excellent WAI. The Pseudo-R^2 value was used to assess the contribution of socio-demographic variables, lifestyle factors and VMS to the likelihood of reporting a poor-moderate WAI score. The percentage of women having 'any' or 'moderate-severely bothersome' VMS in women with poor-