CLIMACTERIC
2025, VOL. 28, NO. 4, 423–430
https://doi.org/10.1080/13697137.2025.2480591

Taylor & Francis
Taylor & Francis Group

ORIGINAL ARTICLE

Menopause, women and the workplace

Karen Walker-Bone[a] and Susan Davis[b]

[a]Monash Centre for Occupational and Environmental Health, School of Public Health and Preventive Medicine, Monash University, Melbourne, VIC, Australia; [b]Monash University Women's Health Research Group, School of Public Health and Preventive Medicine, Monash University, Melbourne, VIC, Australia

ABSTRACT

This invited review is a synthesis of a plenary lecture presented at International Menopause Society Conference in Melbourne 2024. The focus was to set the historic context within which research about women in the workplace must be approached. It is exciting for occupational health researchers to see expansion of the evidence about health and work but we urge menopause and work researchers to collaborate with occupational health colleagues. The growing literature suggests that most women do not experience problems coping with their menopause in the workplace. Most research, however, fails to consider any workplace factors or even the nature of the job women are needing to do. Where studies have focused on occupational groups, they have focused on nurses or other professional/leadership groups. So far, it appears that women's ability to cope is influenced by the number of symptoms, severity of symptoms, and workplace and personal psychosocial factors. However, the problems with coping may be greater for disadvantaged women doing less well-paid work with less flexibility and autonomy. The same women probably have less access to appropriate advice, treatment and support. Researchers must focus on women at highest risk and take a nuanced approach to optimize support without increasing gender-based discrimination.

ARTICLE HISTORY
Received 6 January 2025
Revised 12 February 2025
Accepted 19 February 2025

KEYWORDS
Menopause; workplace; psychosocial factors; gender discrimination

Introduction

This invited review is a synthesis of a plenary lecture delivered at the International Conference on Menopause in Melbourne 2024. The article aims to provide a broad historical perspective about women in the workplace from an occupational health perspective, and then review current evidence about the impact of menopause on work. A critical review of the strengths and weaknesses of the existing research will follow, leading to a synthesis of the implications of what is known and the future research agenda.

Women in the workplace

Women have always worked, whether in the home or outside (often both). Historical evidence comes from the first comprehensive description of occupational diseases, the treatise '*De morbis Artificum Diatriba*' ('Diseases of workers') published in 1700 by the Italian doctor and academic, Bernardino Ramazzini [1]. Ramazzini described diseases associated with 54 different occupations, including a number of health conditions affecting female workers. In his 2012 review of Ramazzini's observations in women workers, Franco highlighted Ramazzini's observations about jobs specific to women (wet nursing, midwifery, nuns) but also about their exposure to chemicals (e.g. starch among washerwomen) and musculoskeletal pain associated with production work among seamstresses and weavers, and in textile manufacturing [2]. At the time, class systems dictated that 'high-class' women did not undertake working activities: as one poet wrote, they were the 'angel in the house' [3]. In contrast, 'working-class' women undertook whatever work they could including piecework (work paid for by the pieces produced, not the hours worked) from home (finishing shoes or clothes, making meals) or they worked in textiles, factories, domestic service or family businesses. The majority of these jobs were not viewed as waged work and were under-recognized and under-valued, not even routinely collected in official records of the time such as the national census.

The world of work changed considerably with the industrial revolution (1760–1840). Mechanization led to a reduction in some occupational physical labor, but machines needed coal so women increasingly labored in mines and mills, often alongside their husband and children working at the same pit or factory [4]. Even then, however, women were seen as weaker than men and consequently paid lower wages for the same job [5].

Even as trade unions started to develop from the 1850s onwards, women were mostly excluded [5]. However, women started to work together to fight for equal rights, forming

CONTACT Karen Walker-Bone Karen.Walker-Bone@Monash.edu Monash Centre for Occupational and Environmental Health Research, School of Public Health and Preventive Medicine, Monash University, 553 St Kilda Road, Melbourne, Victoria, 3004 Australia

their own trade unions to carry out strike action and demand equal pay for equal work. The labor market dramatically opened up to women in the twentieth century, particularly driven by conscription and a shortage of male workers in both World Wars. Women were needed to fill vacant positions in clerical work, first aid, nursing, munitions factories and other essential settings [6]. Initially, single women filled these roles, but as time passed up to 80% of married women were also needed to work. It has been estimated that as many as 6 million US women joined the workforce in World War II [7]. This necessitated the creation of wartime nurseries to provide childcare. Women acquired new skills and became more self-sufficient. Even when men returned from war and were reinstated to their former employment, closing some opportunities for women, traditional gender distinctions were not welcomed back and women continued to demand better educational and employment opportunities akin to their male counterparts. Ultimately, professions opened up to them from the 1950s onwards.

The issue of equal pay for women was first raised in the UK at the Trades Unions Congress in 1888 by the novelist and social reformer Clementina Black [8]. Unfortunately, it took almost another century to be legislated as the Equal Pay Act, 1970 [9] in the UK. Similar legislation was enacted in other countries during the twentieth century (e.g. Germany in 1949, the USA in 1963, France, Australia and New Zealand in 1972, Sweden in 1980 and the Netherlands in 1997). Despite this, there is evidence from many countries with and without such legislation that there remains a substantial gender pay gap, estimated to be around 20% by the International Labour Organization (ILO) based on data for 2018/2019 [10]. The same report found that education and other labor market attributes (including experience and age) explained little of the pay discrepancies, which were attributed for the most part to women being paid less for the same job, often despite equal or superior educational attainment. Another factor was that work in more feminized sectors, for example, health care and education, is generally lower paid than work in more masculinized or equal workforces. Additionally, the ILO identified a 'motherhood pay gap' (employment interruptions, reduced hours of working, family-friendly jobs paid lower wages, stereotypical bias in hiring and promotion) which varied widely from 1% to 30% by country [10].

Another important milestone for women's education and employment was the advent of the birth control pill in the 1960s. Economists estimated that in the USA the birth control pill accounted for 10% of the reduction in the gender pay gap in the 1980s and 30% in the 1990s [11]. They concluded that as the birth control pill became available to younger, unmarried women in the USA, this improved their ability to time births, enabling them to choose to invest in education and career development so that they could compete more equally for the higher-paid jobs [11].

In 2024, 74% of the population of Organisation for Economic and Social Development (OECD) countries was in the labor market, a rate of 81% amongst men and 67% amongst women [12]. This represents a dramatic increase in the proportion of women working over the past two to three decades [13]. In particular, many women now plan to work throughout their working lifetime, without a prolonged period out of the labor market whilst they have young children. An additional group of women aged 45–65 years have returned to the labor market for financial reasons [14]. Moreover, economies are needing to respond to another social change: the aging population [15]. This has brought into focus the increasing burden of societal costs for funding pensions after retirement and meeting the health and social care costs as people live longer but with a similar number of years of disability. Governments in several countries have legislated to encourage workers to work to older ages (past the traditional age of retirement or age of eligibility for state pensions) [16]. Encouraging and supporting women to remain working, including until older ages, will be an important strategy to reduce labor shortages.

Despite their growing importance in the labor market, there is good evidence that women still face stigma and gender discrimination, as exemplified by the data from the OECD countries. According to their latest report, no country has yet achieved parity between men and women for labor participation [12]. One specific aspect of workplace gender discrimination relates to pregnancy and childbirth, which, concerningly, as many as 75% of women still experience [17,18]. It appears that employers continue to hold the view (consciously or unconsciously) that a worker should invest the majority of their physical and psychological time and energy in their work and that taking time away from work because of motherhood demonstrates that women are somehow less committed to their work [17–19].

Menopause and work

Given that the average age at menopause for most women falls between age 45 and 55 years, the majority of women will be in the workplace when menopause occurs. Surprisingly, however, working during the menopause has received rather scant attention in the research literature until recently. In a 2016 Australian study including 1264 women aged 40–65 years in paid employment who completed the work ability index, 81.5% reported good/excellent work ability scores [20]. However, women who reported vasomotor symptoms had a greater likelihood of reporting moderate/poor work ability (odds ratio 2.45, 95% confidence interval [CI] 1.7–3.5 after adjustment for demographic and lifestyle characteristics). Amongst the same women, moderate/poor work ability was also independently associated with being single, having obesity/being overweight, cigarette smoking, caring responsibilities and reporting insecure housing finance [20]. Including women from Europe, the USA and Japan, a 2021 study surveyed women aged 40–65 years, obtaining 3460 eligible responses [21]. The self-reported prevalence of moderate/severe vasomotor symptoms ranged between 16% and 40%. According to some questions selected from the Work Productivity and Activity Impairment questionnaire, hot flashes and night sweats had an overall low effect on activities but, when there were effects, impairments were greater for home (childcare, shopping, physical activity, etc.) than work activities [21]. A study in the USA received useable replies about work from 4440 well-educated women

attending menopause clinics, amongst whom 597 (13.4%) reported at least one 'adverse work outcome' related to menopause, as follows: sickness absence in past 12 months, 10.8%; cutting back at work in past 12 months, 5.6%; made redundant in last 6 months, 0.3%; and leaving job or retiring in past 6 months, 4% [22]. Unfortunately, however, the response rate to this study was only 16%. In an older study including 89 participants, 30% indicated that their menopausal symptoms had impacted their job performance and symptoms of irritability and mood changes were found to correlate with self-rated poor job performance, but these effects were found to be larger in non-managerial than managerial respondents [23].

A number of studies investigated the severity of menopausal symptoms in relation to effects on work [24–26]. Geukes et al. compared a convenience sample of 60 women attending a menopause clinic for the first time with 205 healthy working Dutch women (all aged 44–60 years) and found that, as expected, those attending the clinic were more symptomatic [24]. Self-reported poor work ability was reported by 28% of those in clinic and 3% of the control group, whilst moderate scores were recorded by 45% and 26%, respectively. Amalgamating poor and moderate scores, symptomatic women were eight-fold more likely to have poor/moderate work ability scores (odds ratio 8.4, 95% CI 4.1–17.2). The other independent risk factor for reduced workability was increasing body mass index [24]. Whiteley et al. used data from the 2005 US National Health and Wellness Survey to compare Work Productivity Activity Impairment responses among more than 4116 women (mean age 49.8 years) who had reported experiencing menopausal symptoms with 4695 asymptomatic women [25]. In total, 37.8% of the symptomatic women were unemployed as compared with 34.9% of the asymptomatic women. They were also more likely to tend to be overweight/have obesity and to be ever/current users of depression medication. Symptomatic women reported more presenteeism (participating in work whilst unwell) (17.7% vs. 13.6%) and overall work impairment (16.1% vs. 12.3%) but not sickness absence than asymptomatic women [25]. In terms of individual symptoms, only joint stiffness was found associated with reduced self-reported work productivity. It is important, however, to note here that self-reported work productivity is a far from reliable measure. The odds of reporting any adverse work outcome in a US study were increased in a monotonic relationship with the severity of menopause symptoms according to the Menopause Rating Scale (MRS) [22], with effects most prominent among women with high scores in the psychological domain of the MRS. This study also found some evidence of more adverse work outcomes amongst women from Black, Asian and Hispanic women compared with White women, although fewer women from these ethnic groups were using menopausal hormone therapies. These researchers went on to estimate that lost work productivity associated with menopause cost approximately US $1.8 billion annually, but it is important to note that their response rate was only 16% [22].

Using administrative US data from 2001 to 2010, Kleinman et al. identified more than 17,000 employed women aged over 40 years with diagnosed menopausal symptoms and a matched control group, and found that those with diagnosed symptoms had higher costs for sick leave, more days of sickness absence and lower productivity, as estimated hourly and annually, than controls [26]. Also using administrative data, Sarrel et al. estimated that women with untreated vasomotor symptoms would have 57% (95% CI 51–63%) more reduced indirect work productivity days than controls, at an indirect cost of US $770 per annum (95% CI 726–816) (approximately equivalent to a purchasing power of about US $6263 in 2024) [27]. In another study using administrative data, it was estimated that among women working full-time with menopausal symptoms, chronic insomnia accompanied by frequent wakening at night was associated with increased self-reported presenteeism by 17.3% and overall work impairment by 16.1%, compared with women without insomnia [28]. It is important, however, to note that productivity is difficult to measure accurately in many workplace settings.

In all of the aforementioned studies, work is viewed as a largely homogeneous state: women's work is affected, or not affected, by symptoms of the menopause. However, work is enormously varied in its nature, physical and psychological demands, relationships with co-workers and supervisors as well as its hours and likelihood of offering flexibility. Each of these work characteristics can potentially have an aggravating or modifying effect on the ability of a women to manage her work and the frequency and severity of her menopausal symptoms. This is well understood in the health and work literature for people coping or not coping with chronic health conditions in the workplace. To truly understand the impact of menopause on work, therefore, research needs to take account of the type of work that women are undertaking. To date, only a limited number of studies have taken such an approach in the peer-reviewed literature, and specific occupational groups studied include nurses [29–32], hospital workers [33], university teachers [34], university workers [35,36], women in professional, managerial and administrative (non-manual) roles [37] and police women [38] (Table 1). Whilst all these studies provide useful insights, these studies have tended to focus on more educated women in professional or leadership roles and there is a lack of evidence amongst women doing the full range of roles, particularly less well-paid and manual types of work, or work in the gig economy.

The Health and Employment after Fifty (HEAF) study

To address this research gap, menopause and work were investigated in our UK-based cohort study of health and employment amongst people aged 50–64 years (the HEAF study) [39]. The study originally incepted 4436 women in 2013–2014, amongst whom 3055 (69%) returned a fifth follow-up questionnaire in 2018–2019. The study focused, however, on the 608 women who reported starting menopause within the preceding 10 years, amongst whom 409 were in paid employment when their menopause started. Overall, the cohort reported a similar distribution of menopause symptoms to that seen in other European cohorts,

Table 1. Summary of research into the impact of menopausal symptoms at work by occupational group.

Study	*Occupation*	*Country*	*Number of participants*	*Work factors explored*	*Findings*
Liu et al. [29]	Nurses	China	1686 (80% response)	Not applicable	Most severe symptoms were fatigue (82%) and irritability (70%), followed by arthralgia /myalgia (70%), but 85% were satisfied or very satisfied with their lives
Matsuzaki et al. [30]	Nurses	Japan	1316 (response rate 77%). Final sample 1169 after exclusions	Years of experience, rank, shift work, shift pattern, Brief Job Stress questionnaire (overload, job control, skill discretion, relationships, environment, job fitness and job satisfaction)	Prominent menopausal symptoms were fatigue, irritability and poor concentration. Higher scores for depression/crying spells symptoms in nurses without managerial position compared to those with but no differences otherwise. Job-related stress scores higher amongst those in the perimenopausal group (as compared with pre and post groups). Night shifts not associated with menopausal symptoms. High levels of job-related stress were associated with increased scores for menopausal symptoms, particularly psychological symptoms
Cronin et al. [31]	Nurses	UK	167	Role, working hours, work status, duration working, shift work and patterns, flexibility, job satisfaction, perceived job stress, work environment, work and job demands, control, support from manager and co-workers, relationships at work and role, presenteeism, sick leave, leaving work early or arriving late for work, intentions to leave or change work	No correlation between symptom severity and shift patterns or number of working hours. Amongst respondents reporting moderate or severe symptoms, >60% had taken time off, left early or been late for work in the preceding 4 weeks due to menopausal symptoms. Of those with severe symptoms, 64% reported intending to reduce working hours, 47% intending to leave the workforce and 44% intending to leave their employing organization
Vanderzalm et al. [32]	Nurses working in women's health	Canada	13	Self-reported mistakes, efficiency impaired, lack of concentration,	Qualitative research with a self-selected sample: sick leave used to cope
Hickey et al. [33]	Hospital workers (41% nurses)	Australia	1092 (22% response rate)	Working hours, job role, shift patterns, work engagement, organizational commitment, job satisfaction, intention to leave, work limitations, support from supervisor, control over work, perceptions of stereotypes on grounds of age and or gender	53% part-time workers, 28% shift workers. No difference in work engagement, job satisfaction, work limitations or supervisor support by menopausal stage Over the preceding 4 weeks, 6% reported menopausal symptoms had affected their work performance 'very much' and another 6% 'somewhat'; 6% thought they were making errors because of their symptoms 'always'. Overall, women rated their work performance highly and did not feel markedly impaired in work capability by menopausal symptoms
Hammam et al. [34]	University teachers in the faculty of medicine	Egypt	131 (66%) response	Occupational characteristics, job rank, working experience, working hours, Women's Health Questionnaire (WHQ), open questions about work and menopause	Prominent symptoms of depression, somatization, sleep disturbance and poor memory/concentration on the WHQ. Main symptoms affecting working capacity were fatigue (83%) and changes of sleep pattern (64%). Work factors affecting menopausal symptoms were: poor physical environment (92%); confined spaces/crowding (85%); insufficient washroom facilities (83%) and poor workstation design (63%) as were work stress/overload (100%), extraordinary responsibilities (91%), long/unpredictable working hours (82%), discrimination (73%) and problems with colleagues/supervisors (63%). One in four had disclosed their menopausal status at work, mainly to colleagues not supervisors
Griffiths et al. [35]	Professional, managerial and administrative (non-manual occupations) in 10 organizations from range of sectors	UK	896 women aged 45–55 years (5–43% response rate)	Job satisfaction, working conditions, work performance, disclosure to line managers, effective workplace adjustments, employer support	Three symptoms associated with particular work difficulties by respondents: reduced confidence, poor concentration, poor memory. Vasomotor symptoms more difficult to cope with in hot conditions or during meetings. Around one-third thought menopausal symptoms impacted their work performance and another third that they had not. Around 25% disclosed their menopause to their manager. A total of 12% had taken at least 1 day of sick leave for menopausal symptoms

(*Continued*)

Table 1. Continued.

Study	Occupation	Country	Number of participants	Work factors explored	Findings
Olajubu et al. [37]	University staff	Nigeria	200 (out of 350 eligible) sampled for menopausal stage	Work Ability Index (WAI)	Commonest symptoms were myalgia (82%) and night sweats (80%). Perceived work ability was excellent among 44% and good among 36.5%, moderate in 13.5% and poor in 6.5%. Menopausal symptoms were negatively associated with WAI score with the most prominent effects from the psychological scale, somatic scale, vasomotor scale and then sexual function scale
Jack et al. [36]	Academic, administrative and executive university roles	Australia	839	Working hours, type of job, contract type (permanent vs. temporary), work engagement (Utrecht Work Engagement Scale); organizational commitment (Affective Commitment Scale); job satisfaction; and intention to quit	Most nuisance menopausal symptoms were sleep disturbance, headaches, weakness or fatigue, loss of sexual desire, anxiety, memory loss, pain in bone joints, and hot flashes. More frequent and more severe menopausal symptoms associated with lower scores for job engagement and lower job satisfaction. More flexibility enabled work
Atkinson et al. [38]	Police force	UK	1197 (% response not stated)	Attitudes about menopausal women in the workplace; disclosure about menopause status	Most bothersome symptoms reported: sleep problems, fatigue, poor memory, hot flushes, irritability, poor concentration, night sweats and feeling depressed. Factors associated with difficulty coping were: wearing uniforms, having caring responsibilities and working in defined police forces (as compared with the third force). Symptoms were better tolerated among older women working in workplaces with a high proportion of women: men and women with better educational attainment

with vasomotor symptoms (92%), sleep difficulties (68%) and psychological symptoms (64%) the most commonly reported. In total, 111 (27%) reported moderate/major difficulties coping at work with their menopausal symptoms. The women were asked a range of socio-demographic and lifestyle factors, including about their educational attainment, marital status, financial status, housing arrangements, leisure-time physical activity, smoking and alcohol consumption. In addition, they were asked to report their job title/industry for coding according to the Standard Occupational Classification SOC2010 coding of occupations [40]. This latter variable enabled their job to be classified into one of 9 types of occupations, as follows: 'Managers, directors and senior officials', 'Professional occupations', 'Associate professional and technical occupations', 'Administrative and secretarial occupations', 'Skilled trades occupations', 'Caring, leisure and other service occupations', 'Sales and customer service occupations', 'Process, plant and machine operatives' and 'Elementary occupations'. To describe their work, the women were asked about working hours, shift work, job satisfaction and job security. They were also asked to complete a list of questions relating to physical workplace demands (e.g. standing >2 h/climbing stairs >1 h/day; kneeling/squatting >1 h/day; physical work sufficient to cause sweating) and to complete questionnaires relating to the psychosocial workplace demands they experienced at work (modified from demand, control, support questionnaires [41]).

Comparison of the women who reported difficulty coping with their menopausal symptoms at work with those reporting no difficulty showed that none of age, educational attainment, marital status, alcohol consumption, cigarette smoking, leisure-time physical activity or body mass index was associated with coping versus not coping with menopause symptoms at work. In contrast, financial status was associated with difficulty coping such that women who reported they were 'just about managing' or 'not managing' financially were 1.6-fold (95% CI 1.1–2.2) more likely to report difficulty coping with their symptoms at work and women with financial dependents were 1.6-fold (95% CI 1.1–2.4) more likely to report difficulty coping. Exploring the work factors, difficulty coping was not found associated with job type (as defined by SOC2010 classification), nor with any of the individual, or grouped, physically demanding work activities reported. However, relationships were found for increased odds of reporting difficulty coping with menopausal symptoms in association with adverse psychosocial work characteristics, including job insecurity, job dissatisfaction, often feeling anxious about work, rarely/never feeling a sense of achievement at work and rarely/never feeling appreciated at work (Table 2).

In terms of the nature of symptoms experienced, higher numbers of individual menopausal symptoms were reported amongst those experiencing difficulties coping at work (median 6 vs. 4). Three specific symptoms were found associated with an increased risk of reporting difficulties coping at work after adjustment for other risk factors and mutual adjustment: psychological symptoms; arthralgia; and severe headaches [29].

Table 2. Relationships between psychosocial work characteristics and reporting difficulty coping with menopausal symptoms at work in 409 women in the Health and Employment after Fifty (HEAF) study [39].

Characteristic	*No/minor problems coping (N, %)*	*Moderate/major problems (N, %)*	*Relative risk (95% confidence interval)*
Feeling insecure in job	120 (40)	69 (62)	1.9 (1.4–2.7)
Often worry about job	43 (14)	39 (35)	2.2 (1.6–2.9)
Rarely/never feel achievement at work	10 (3)	8 (7)	1.7 (1.0–2.9)
Rarely/never feel appreciated at work	21 (7)	15 (14)	1.2 (1.1–1.3)
Often unfairly criticized	5 (2)	5 (5)	1.9 (1.0–3.6)
Dissatisfied with job	11 (4)	13 (12)	2.1 (1.4–3.2)

Menopause, women and work: where are we now?

The literature available is growing but poorly comparable in terms of what is measured and how. Estimates from a number of studies suggest that between 15% and 40% of women going through menopause experience some problems coping with their symptoms at work [23,22,35,39,42,43]. Although this is not trivial, it does suggest that the majority of women do not experience difficulties. A number of studies have reported that women struggling to cope with their menopausal symptoms also report that they are planning to leave the workplace in consequence [24,31]. However, it is well known from the retirement literature that reporting an intention to withdraw from work is not the same as actually withdrawing from work [44]. Clearly, more longitudinal research is indicated to better understand to what extent menopausal symptoms translate into work exit, and, ultimately, whether work loss can be prevented with menopause hormone treatment.

Research on menopause and work has only recently started to include the greater nuance that is required to better understand work impacts of the menopause. Work is not all the same and sadly not all employers or jobs are the same. Although it might have been expected that some types of symptoms would be more difficult to cope with amongst women with certain workplace physical demands (e.g. urinary symptoms and heavy lifting), there has been limited exploration and, to date, no evidence to support this hypothesis. In contrast, there is growing evidence that psychosocial work factors (such as perceived stress [30]) are important in coping with menopause [34,39,45–47]. This is unsurprising and reflective of data from people trying to cope at work with chronic health conditions. In the main, individuals can cope well and remain working with a chronic health condition if they have supportive colleagues and managers, flexible work and availability of modifications/adjustments to their role [48]. Some of the existing research on menopause and work has brought these factors out, particularly the qualitative work with women in the workplace [36,38]. It is highly likely that the workplace culture – specifically toward aging and women aging, but also more broadly, – will affect a woman's willingness to disclose symptoms and ask for support, whether symptoms are physiological (like the menopause) or from a health condition.

An important area for consideration is that the impact of menopause on work is likely to be unequal. Several data now point to social inequalities in coping with the menopause, including personal financial circumstances [20,39]. Importantly, the types of jobs women are doing are influenced by educational attainment and socioeconomic circumstances and tend to be more physically demanding, poorer paid, more likely to include shift work/night work and less likely to be flexible. As Table 1 highlights, these women appear to have generally been under-represented in research on menopause and work. Additionally, women from poorer socioeconomic backgrounds are also less likely to have good health literacy [49] and self-efficacy, and less likely to know where to seek help for menopausal symptoms and possibly may struggle more to pay for menopause hormone treatment. They are also more likely to have contemporaneous caring responsibilities [50]. More research is required including more representative groups of working women (including those from different ethnic backgrounds), not least because these are the women who can least afford to stop working and because many of them are doing jobs which society needs and which already have shortages, including in the health and social care sectors.

Another important point is that the menopause research community must continue to ensure that working with menopause is supported but must do so without 'exposing women to further prejudice and inequality in the workplace' [51,p.14]. It is salutary to think that it is still less than 100 years since women's work became properly valued in most societies and that many women still experience gender-related discrimination, measurable in the gender pay gap [12]. Unfortunately, female health issues such as pregnancy/maternity continue to be used as excuses by employers not to recruit or promote women and it is incredibly important that menopause does not become another excuse for favoring male over female workers. The evidence is striking that workers, no matter their age, gender or health condition, cope better at work if they are treated as individuals, given as much choice and flexibility about how they do their work as feasible, listened to and supported. Importantly, as workers age, male and female, or the demands of work change, every individual worker should be entitled to have at least an annual assessment of their capacity in relation to their demands. Where there is a mismatch, employers and supervisors would do well to take appropriate actions for the benefit of the worker but also for the productivity of their own business [52].

In summary, menopause and work are important areas for research but a nuanced and thoughtful approach is required to avoid inadvertent harm to working women.

Acknowledgements

The authors acknowledge the co-authors of the Health and Employment after Fifty (HEAF) study: Ms Stefania D'Angelo, Dr Georgia Ntani, Dr Gregorio Bevilacqua, Dr Elena Zaballa, Ms Julia Hammond, Professor Elaine Dennison, Dr Martin Stevens, Dr Cathy Linaker, Dr Clare Harris, Ms Vanessa Cox and Professors Keith Palmer and David Coggon for their roles in the HEAF study.

Disclosure statement

No potential conflict of interest was reported by the authors.

Funding

The Health and Employment after Fifty (HEAF) study was funded by the Medical Research Council programme grant [MC_UU_12011/5]; Versus Arthritis [22090] and Economic and Social Research Council and Medical Research Council [ES/L002663/1] jointly.

ORCID

Karen Walker-Bone http://orcid.org/0000-0002-5992-1459
Susan Davis http://orcid.org/0000-0002-2955-0415

References

[1] Ramazzini B. De Morbis Artificum Diatriba. Diseases of Workers. 1940 ChicagoThe University of Chicago Press The Latin text of 1713 revised with translation and notes by Wilmer Cave Wright.
[2] Franco G. Bernardino Ramazzini and women workers' health in the second half of the XVIIth century. J Public Health (Oxf). 2012;34(2):305–308. doi: 10.1093/pubmed/fds029.
[3] Patmore Coventry Kersey Dighton. The Angel in the House, Part I. London: Macmillan & Co; 1863.
[4] Evans E. From family to factory: women's lives during the Industrial Revolution. History Extra Magazine. 2022 March 14. [cited 2024 Nov 10]. Available from: https://www.historyextra.com/period/industrial-revolution/womens-lifes-roles-industrial-revolution/.
[5] Anitha S, Pearson R. Striking women. Lincoln: University of Lincoln; 2013. Available from: www.striking-women.org.
[6] McDermott A. How World War II empowered women. A&E Television Networks. 2023 Aug 15 [cited 2024 Nov 10]. Available from: https://www.history.com/news/how-world-war-ii-empowered-women.
[7] History.com editors. ; 2024 American Women in World War II. A&E Television Networks. 2024 Feb 27 [cited 2024 Nov 10]. Available from: https://www.history.com/topics/world-war-ii/american-women-in-world-war-ii-1.
[8] Trades Union Congress. TUC Report 1888. TUC Library Collections, London Metropolitan University. [cited 2024 Nov 10]. Available from: http://www.unionhistory.info/equalpay/display.php?irn=899.
[9] HM Government. 1970 The Equal Pay Act. [cited 2024 Nov 10]. Available from: https://www.legislation.gov.uk/ukpga/1970/41/enacted.
[10] International Labor Organization. Global wage report 2018/19: what lies behind gender pay gaps. International Labor Office. Geneva: ILO; 2018. [cited 2024 Nov 10]. Available from: https://www.ilo.org/resource/other/gender-pay-gap.
[11] Bailey MJ, Hershbein B, Miller AR. The opt-in revolution? Contraception and the gender gap in wages. Am Econ J Appl Econ. 2012;4(3):225–254. doi: 10.1257/app.4.3.225.
[12] Organisation for Economic and Social Development (OECD). Labour Market Situation. OECD Database. 2024. 2024 Oct 15. [cited 2024 Nov 10]. Available from: https://www.oecd.org/en/data/insights/statistical-releases/2024/10/labour-market-situation-updated-october-2024.html.
[13] Kopenhager T, Guidozzi F. Working women and the menopause. Climacteric. 2015;18(3):372–375. doi: 10.3109/13697137.2015.1020483.
[14] Payne S, Doyal L. Older women, work and health. Occup Med (Lond). 2010;60(3):172–177. doi: 10.1093/occmed/kqq030.
[15] World Health Organisation. Ageing and Health. World Health Organization – Geneva. 2024 Oct 1. [cited 2024 Nov 10]. Available from: https://www.who.int/news-room/fact-sheets/detail/ageing-and-health.
[16] Department for Work and Pensions. Department for Work and Pensions Equality Information (Customer Data). London, UK: Department for Work and Pensions. 2014. [cited 2024 Nov 10]. Available from: https://assets.publishing.service.gov.uk/media/5a7dee8bed915d74e6223002/Department_for_Work_and_Pensions_Equality_Information_2014_-_Customer_Data.pdf.
[17] Greenberg D, Ladge J, Clair J. Negotiating pregnancy at work: public and private conflicts. Negotiation Conflict Man Res. 2009;2(1):42–56. doi: 10.1111/j.1750-4716.2008.00027.x.
[18] Trump-Steele RCE, Nittrouer CL, Hebl MR, et al. The inevitable stigma for childbearing-aged women in the workplace: five perspectives on the pregnancy-work intersection. In: Spitzmueller C, Matthews R, editors. Research perspectives on work and the transition to motherhood. Cham: Springer; 2016. doi: 10.1007/978-3-319-41121-7_5.
[19] Lisle L. Without child: challenging the stigma of childlessness. New York & London: Taylor & Francis/Routledge; 1999.
[20] Gartoulla P, Bell RJ, Worsley R, et al. Menopausal vasomotor symptoms are associated with poor self-assessed work ability. Maturitas. 2016;87:33–39. doi: 10.1016/j.maturitas.2016.02.003.
[21] Nappi RE, Kroll R, Siddiqui E, et al. Global cross-sectional survey of women with vasomotor symptoms associated with menopause: prevalence and quality of life burden. Menopause. 2021;28(8):875–882. doi: 10.1097/GME.0000000000001793.
[22] Faubion SS, Enders F, Hedges MS, et al. Impact of menopause symptoms on women in the workplace. Mayo Clin Proc. 2023;98(6):833–845. doi: 10.1016/j.mayocp.2023.02.025.
[23] High RV, Marcellino PA. Menopausal women and the work environment. Soc Behav Pers. 1994;22(4):347–354. doi: 10.2224/sbp.1994.22.4.347.
[24] Geukes M, van Aalst MP, Robroek SJ, et al. The impact of menopause on work ability in women with severe menopausal symptoms. Maturitas. 2016;90:3–8. doi: 10.1016/j.maturitas.2016.05.001.
[25] Whiteley J, DiBonaventura M, Wagner JS, et al. The impact of menopausal symptoms on quality of life, productivity, and economic outcomes. J Womens Health (Larchmt). 2013;22(11):983–990. doi: 10.1089/jwh.2012.3719.
[26] Kleinman NL, Rohrbacker NJ, Bushmakin AG, et al. Direct and indirect costs of women diagnosed with menopause symptoms. J Occup Environ Med. 2013;55(4):465–470. doi: 10.1097/JOM.0b013e3182820515.
[27] Sarrel P, Portman D, Lefebvre P, et al. Incremental direct and indirect costs of untreated vasomotor symptoms. Menopause. 2015;22(3):260–266. doi: 10.1097/GME.0000000000000320.
[28] Bolge SC, Balkrishnan R, Kannan H, et al. Burden associated with chronic sleep maintenance insomnia characterized by nighttime awakenings among women with menopausal symptoms. Menopause. 2010;17(1):80–86. doi: 10.1097/gme.0b013e3181b4c286.
[29] Liu M, Wang Y, Li X, et al. A health survey of Beijing middle-aged registered nurses during menopause. Maturitas. 2013;74(1):84–88. doi: 10.1016/j.maturitas.2012.10.006.
[30] Matsuzaki K, Uemura H, Yasui T. Associations of menopausal symptoms with job-related stress factors in nurses in Japan. Maturitas. 2014;79(1):77–85. doi: 10.1016/j.maturitas.2014.06.007.
[31] Cronin C, Abbott J, Asiamah N, et al. Menopause at work-an organisation-based case study. Nurs Open. 2024;11(1):e2058. doi: 10.1002/nop2.2058.
[32] Vanderzalm J, Deschenes S, Kunyk D. Women's health nurses' experiences of menopause: considerations for nurse leaders. Nurs Manage. 2023;54(6):34–40. doi: 10.1097/nmg.0000000000000023.
[33] Hickey M, Riach K, Kachouie R, et al. No sweat: managing menopausal symptoms at work. J Psychosom Obstet Gynaecol. 2017;38(3):202–209. doi: 10.1080/0167482X.2017.1327520.
[34] Hammam RA, Abbas RA, Hunter MS. Menopause and work–the experience of middle-aged female teaching staff in an Egyptian governmental faculty of medicine. Maturitas. 2012;71(3):294–300. doi: 10.1016/j.maturitas.2011.12.012.

[35] Griffiths A, MacLennan SJ, Hassard J. Menopause and work: an electronic survey of employees' attitudes in the UK. Maturitas. 2013;76(2):155–159. doi: 10.1016/j.maturitas.2013.07.005.
[36] Jack G, Bariola E, Riach K, et al. Work, women and the menopause: an Australian Exploratory Study. Acad Manage Proc. 2014;18(1):11645–11645.
[37] Olajubu AO, Olowokere AE, Amujo DO, et al. Influence of menopausal symptoms on perceived work ability among women in a Nigerian University. Climacteric. 2017;20(6):558–563. doi: 10.1080/13697137.2017.1373336.
[38] Atkinson C, Carmichael F, Duberley J. The Menopause Taboo at Work: examining Women's Embodied Experiences of Menopause in the UK Police Service. Work Employment Soc. 2021;35(4):657–676. doi: 10.1177/0950017020971573.
[39] D'Angelo S, Bevilacqua G, Hammond J, et al. Impact of menopausal symptoms on work: findings from women in the Health and Employment after Fifty (HEAF) study. Int J Environ Res Public Health. 2022;20(1):295. doi: 10.3390/ijerph20010295.
[40] SOC2010Volume 1: structure and Descriptions of Unit Groups: outlines the Background, Resources, Concepts and Processes of SOC 2010. London, UK: Office for National Statistics; 2010.
[41] Sanne B, Torp S, Mykletun A, et al. Demand–Control–Support Questionnaire–English Version (DCSQ) [Database record]. APA PsycTests; 2005. doi: 10.1037/t15001-000.
[42] Jubilee Women. Fiftysomething women—lifestyle and attitudes now and fifty years ago; Social Issues Research Centre. London (UK): Social Issues Research Centre; 2002.
[43] Rathnayake N, Lenora J, Alwis G, et al. Prevalence and severity of menopausal symptoms and the quality of life in middle-aged women: a study from Sri Lanka. Nurs Res Pract. 2019;2019:2081507. doi: 10.1155/2019/2081507.
[44] Van Solinge H, Henkens K. Work-related factors as predictors in the retirement decisionmaking process of older workers in the Netherlands. Ageing Soc. 2014;34(1):1551–1574.
[45] Jack G, Riach K, Bariola E, et al. Menopause in the workplace: what employers should be doing. Maturitas. 2016;85:88–95. doi: 10.1016/j.maturitas.2015.12.006.
[46] Mishra G, Kuh D. Perceived change in quality of life during the menopause. Soc Sci Med. 2006;62(1):93–102. doi: 10.1016/j.socscimed.2005.05.015.
[47] Gujski M, Pinkas J, Jurńczyk T, et al. Stress at the place of work and cognitive functions among women performing intellectual work during peri-and post-menopausal period. Int J Occup Med Environ Health. 2017;30(6):943–961. doi: 10.13075/ijomeh.1896.01119.
[48] Hollick RJ, Stelfox K, Dean LE, et al. Outcomes and treatment responses, including work productivity, among people with axial spondyloarthritis living in urban and rural areas: a mixed-methods study within a national register. Ann Rheum Dis. 2020;79(8):1055–1062. doi: 10.1136/annrheumdis-2020-216988.
[49] Svendsen MT, Bak CK, Sørensen K, et al. Associations of health literacy with socioeconomic position, health risk behavior, and health status: a large national population-based survey among Danish adults. BMC Public Health. 2020;20(1):565. doi: 10.1186/s12889-020-08498-8.
[50] Harris EC, D'Angelo S, Syddall HE, et al. Relationships between informal caregiving, health and work in the Health and Employment After Fifty study, England. Eur J Public Health. 2020;30(4):799–806. doi: 10.1093/eurpub/ckaa078.
[51] Riach K, Jack G. Women's health in/and work: menopause as an Intersectional Experience. Int J Environ Res Public Health. 2021;18(20):10793. doi: 10.3390/ijerph182010793.
[52] Chosewood LC, Schill AL, Chang C-C, et al. The National Institute for Occupational Safety and Health Total Worker Health® program: the third decade. J Occup Environ Med. 2024;66(1):6–8. doi: 10.1097/JOM.0000000000002964.