



Do Hot Flashes Get the Cold Shoulder? Menopausal Symptoms and Disclosure Influence Leader Ratings

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Abstract

Middle-aged working women may be poised to enter leadership roles at the same time they enter the menopausal transition. Unfortunately, menopause is assumed to evoke stigma and bias work judgments; however, this assumption is untested. We apply the stigma process model (Link & Phelan, 2001) to predict that if menopause carries stigma, identifying a woman as menopausal constrains her from leadership due to unfavorable stereotypes. In Study 1, three workplace meeting scenarios manipulated menopausal identification: a middle-aged woman without symptoms, with prototypical “hot flash” symptoms, and with symptoms disclosed as menopausal. As expected, hot flash symptoms reduced leader potential ratings due to lower judgments of her agency compared to no symptoms and increased the gender disparity in leader ratings. Unexpectedly, disclosing the symptoms as menopausal *increased* agency and leader potential ratings compared unlabeled symptoms. Study 2 offered a constructive replication and explored different explanations for this finding. Disclosure functioned as a compensatory agentic act, overriding the low agency stereotype; simply identifying her symptoms as menopausal did not have the same benefit. Participant gender and gender context ratio did not change these conclusions. We conclude that hot flash symptoms carry physical stigma that biases decisions and contributes to gender disparities, but disclosing they are menopausal overrides the costs, offering practical advice for midlife working women who seek career advancement.

Keywords Menopause · Middle-aged · Gender disparities · Leadership · Agency · Stereotypes · Stigma

Take this hot flash and shove it.

– *The New York Times* (Moyer, 2022).

Menopause stigma still rife in workplace as women fear for their careers.

– *The Independent* (Jackson, 2023).

Menopausal women say they’re perceived as less productive.

– *Fast Company* (Mohan, 2024).

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After years of silence, menopause at work is suddenly a hot topic. Media headlines like the ones above offer new societal attention to this healthy transition experienced by most middle-aged women, and scholarly attention in the organizational sciences is emerging (Atkinson et al., 2021; Burke & Grandey, 2020; Grandey et al., 2020; Steffan & Potočník, 2022). This attention is overdue, given that 47% of the industrialized workforce is female, and the 15 million midlife female US employees will likely experience menopause (Bureau of Labor Statistics, 2023, 2024). To date, workplace media and scientific attention focused on midlife women’s experience of menopausal symptoms (e.g., hot flashes) at work (Avis et al., 2015; Monteleone et al., 2018), and women’s anticipated stigma and biases perceived to constrain career advancement (Grandey et al., 2020; Jack et al., 2019; Steffan, 2021). If menopause biases judgments, and almost half the workforce is or will be menopausal, then menopause may be contributing to gender disparities in the workplace.

Menopause is not an observable condition, but observable and prototypical menopausal symptoms may be used to infer that a woman is menopausal. One such culprit is hot

flashes, also known as hot flashes and vasomotor symptoms, which involve sudden heat, sweating, and redness of the skin (Avis et al., 2001; Faubion et al., 2023). A majority of working menopausal women (50–70% across studies) report having hot flashes at work (Bariola et al., 2017; Griffiths et al., 2013; Hardy et al., 2018) and further state that of all the menopausal symptoms “coping with hot flashes in particular was stressful” (Griffiths et al., 2013, p. 158). While hot flashes can be uncomfortable, very few women (about 10%) report that hot flashes interfere with performance (Faubion et al., 2023); in contrast, the majority of women (50–70%) report that hot flashes are stressful due to fears about others’ biases and potential discrimination (Jack et al., 2019; Steffan, 2021; Steffan & Potočník, 2022).

The evidence is based on interviews and surveys of menopausal women (Jack et al., 2019; Steffan, 2021; Steffan & Potočník, 2022), which reveals anticipated stigma when they have symptoms. In fact, a third of working women with these symptoms will not disclose they are menopausal because they assume stigma and biases, even if disclosing can result in support or accommodations (Atkinson et al. 2021). Surprisingly, there is no direct evidence about whether and when menopausal symptoms bias work judgments. Scholars, managers, and media have called for more attention to whether there is menopausal stigma influencing work-specific judgments (Atkinson et al., 2021; Jack et al., 2016; Kale, 2021; Patterson, 2020). We respond to this call to ask whether menopausal symptoms and disclosure biases leader ratings in a way consistent with stigma.

Our inquiry contributes to the emerging conversation about menopause at work by critically testing the theoretical conditions for stigma attribution, as outlined in the social cognitive model of stigma (Goffman, 1963; Link & Phelan, 2001). Based on this model, we ask whether seeing a middle-aged woman with menopausal symptoms evokes unfavorable stereotypes for the workplace that influence likelihood of status conferral. If so, menopausal stigma may constrain career advancement and contribute to gender disparities, an idea proposed (Grandey et al., 2020) but not previously tested. We also contribute to the literature on stigma disclosure. Menopause is a concealable identity, but hot flashes are observable and unexpected at work. We argue hot flashes create a “disclosure dilemma” (Ragins, 2008)—where women have a choice to disclose menopause as the reason for those symptoms with benefits and costs for that choice (Barth & Wessel, 2022; Camacho et al., 2020; Cha et al., 2019; Follmer et al., 2020). Disclosing that the symptoms are menopausal would help to explain and obtain support at work (Atkinson et al., 2021), but also may confirm a stigmatized identity that biases judgments and excludes her from status (Jones & King, 2014). We contribute to the evidence about when stigma disclosure is better than saying nothing.

Empirically, we add to self-reported survey and interview evidence by taking a different approach to study menopausal stigma: experimental vignette methodology (Aguinis & Bradley, 2014). This approach allows us to change only the menopausal symptoms and disclosure, holding constant the middle-aged target and work context. Our approach permits causal inferences and allows us to address menopausal stereotypes specifically rather than gendered aging stereotypes more broadly (Chatman et al., 2022; Riach et al., 2015). We conduct two studies to increase confidence in our conclusions, offering a constructive replication with different stimuli, measures, and work context (Lykken, 1968). Overall, these studies offer new evidence and ask an important question about menopausal stigma at work: Are judgments about a middle-aged woman less favorable after having menopausal symptoms at work—and disclosing them as menopausal—in ways that constrain her potential as a future leader?

Practically, understanding when and why menopause carries stigma offers implications for half the workforce, specifically for reducing discrimination of middle-aged women (Telegraph, 2022). This evidence calls managers and HR professionals to educate themselves about menopausal symptoms to overcome biases and support the aging workforce (Atkinson et al., 2021; Kale, 2021; Patterson, 2020). Our results also offer practical advice for the millions of menopausal women who have a hot flash at work (Jack et al., 2019; Steffan, 2021) on how to resolve the disclosure dilemma of a hot flash, avoiding the cold shoulder of discrimination.

Menopausal Symptoms and the Social–Cognitive Model of Stigma

Menopause is a healthy aging transition experienced by those at the intersection of middle-age and female (Marcus & Fritzsche, 2015; Riach et al., 2015). The menopausal transition (i.e., perimenopause) starts around 44 years old on average, a midlife age that intersects with mid-career stage when employees are being tapped for leadership roles. To rigorously test if menopause carries stigma at work, we apply an established model of stigma.

Stigma is an attribute or characteristic that conveys a devalued or discredited identity for a particular context (Goffman, 1963). To examine if menopause evokes stigma at work, we apply the social cognitive stigma model (Link & Phelan, 2001) which states “stigma exists when the following [three] interrelated components converge” (p. 367): (1) an attribute *identifies* the person as belonging to a devalued group that (2) elicits unfavorable *stereotypes*, (3) which are then used to deny the target *status* in the group. We apply these criteria to see whether and why identifying a woman as menopausal evokes stigma at work.

Menopausal Identification

Based on survey and interview data, the majority of middle-aged women anticipate stigma if they are identified as menopausal (Atkinson et al., 2021; Bariola et al., 2017; Griffiths et al., 2013; Hardy et al., 2018). As a stage of life defined by hormonal and menstrual cycle changes, menopause is a concealable stigma, but people may identify women as menopausal based on observable attributes (Jones & King, 2014). Menopausal identification may or may not be assumed based on surface-level demographics (a middle-aged woman) but becomes increasingly more likely (1) if she has observable symptoms associated with menopause and (2) if symptoms are clearly labeled as menopausal through disclosure.

Middle-aged working women describe the stress of experiencing menopausal symptoms at work, specifically hot flashes (Atkinson et al., 2021; Jack et al., 2019; Steffan & Potočník, 2022). Vasomotor symptoms—i.e., hot flashes—are the most frequently reported symptoms during the menopausal transition and are the most observable to others (Avis et al., 2015; Faubion et al., 2023). We expect that menopausal hot flash symptoms carry stigma at work due to both physical and identity stigma. Sudden flushing and uncontrollable perspiration during hot flashes (Monteleone et al., 2018; Thurston & Joffe, 2011) carry *physical stigma*, bodily changes that are deviant for work context and suggest illness or elicit disgust (Ashforth & Kreiner, 1999). While prototypical for menopause, hot flashes are also associated with other health conditions such as heart attacks or panic attacks (Gerber et al., 2007; Hanisch et al., 2008). Thus, hot flash symptoms may be viewed negatively as indications of bodily weakness and lack of health whether identified as menopausal or not. Yet strong associations of hot flash symptoms with menopause can also evoke *identity stigma*. Hot flashes are the “only consistently found medical changes associated with the onset of natural menopause” (Marcus-Newhall et al., 2001, p. 701), and working women fear hot flashes identify them as menopausal (Atkinson et al., 2021; Jones, 2017; Steffan, 2021). We thus expect that hot flash symptoms carry physical and identity stigma.

Further, the menopausal identification—and thus likelihood of stigma—becomes more certain when the unlabeled physical symptoms are labeled as menopausal via disclosure (Jones & King, 2014). Disclosure “undeniably confirms the invisible identity” (Jones et al., 2016, p. 1532). In other words, hot flash symptoms create a disclosure dilemma for middle-aged women (Griffith & Hebl, 2002): the fear that authentically explaining the symptoms means evoking biases and discrimination (Camacho et al., 2020; Follmer et al., 2020; Sabat et al., 2020). As stated by one working woman: “I fear being overly open about symptoms could undermine others’ perception of my performance” (Steffan & Potočník, 2022, p. 26). Across studies, the majority of working women

conceal that their symptoms are menopausal, consistent with stigma, but over a third of working women choose to disclose (Bariola et al., 2017; Atkinson et al., 2021; Jack et al., 2019); however, we lack evidence about how others react to disclosure. If menopause carries identity stigma, disclosing symptoms as menopausal should worsen judgments beyond physical stigma of symptoms alone.

Menopausal Stereotypes

According to the stigma model, unfavorable judgments are elicited when the stigmatized attribute is observed (Link & Phelan, 2001). According to the stereotype content model, agency and warmth are two primary judgments made about others (Cuddy et al., 2008; Fiske et al., 2007; Judd et al., 2005; Ma et al. 2022): Agency refers to personal capability (i.e., competent, confident) and warmth to interpersonal tendencies (i.e., considerate, sincere).¹

Menopause occurs at middle-age, and middle-aged employees are stereotyped as high in agency; middle-aged women gain agency but lose warmth compared to younger women (Chatman et al., 2022; Finkelstein et al., 2013). It is unclear whether seeing a middle-aged woman as menopausal changes those judgments. We expect that the physical signs of menopause make salient the middle-aged woman’s gendered and aging body, reducing agency and increasing warmth stereotypes. Identifying a woman as pregnant also makes salient her female body and reduces agency judgments and increases warmth judgments (Gatrell, 2013; Jones, 2017). Uniquely, menopause also makes salient the woman’s aging body, which may activate both gender and aging stereotypes: low agency-high warmth (Finkelstein et al., 2013; Fiske et al., 2002; Ng & Feldman, 2012). Thus, we expect that when a middle-aged woman has hot flash symptoms, her agency is lowered and warmth increased (Cuddy et al., 2007; Eagly et al., 2020).

Further, when her symptoms are identified as menopausal through disclosure, the gendered aging judgments should strengthen (lower agency-higher warmth). One study compared “menopausal women” to “middle-aged women,” a less realistic way of identification at work than disclosure, and found that menopausal women had lower judgments of strength, confidence and stability but not competence or intelligence (all agentic terms), and no difference by group for warmth terms (Marcus-Newhall et al., 2001). We may find stronger evidence for stigma in the form of unfavorable stereotypes when focusing on the work context.

¹ The stereotype content model (SCM) originally referred to competence, but is used interchangeably with agency (see Fiske, 2018; Koenig & Eagly, 2014). We use agency as the term used in gender stereotypes and leadership research and as most consistent with our theorizing.

Menopausal women are deviant from the masculine norms of the professional white-collar workplace (Whiley et al., 2023) potentially resulting in lowered agency when identified by disclosure in that context. Similarly, disclosure of her menopausal status may increase the warmth judgment beyond the symptoms alone, due to disclosure being used as an indicator of authenticity and trustworthiness (Ensari & Miller, 2002; Hebl & Skorinko, 2005; Lyons et al., 2018).

Overall, based on the stigma process model, we expect that compared to a middle-aged woman (without symptoms), there is an increase in certainty of menopausal identification with hot flash symptoms, and those symptoms disclosed as menopause; the certainty of menopause should result in increasingly lower judgments of agency and higher judgments of warmth. We therefore put forward the following hypotheses:

Hypothesis 1: Personal agency judgments of a middle-aged woman decrease if she has hot flash symptoms (1a) and decrease more if those symptoms are disclosed as menopause (1b).

Hypothesis 2: Interpersonal warmth judgments of a middle-aged woman increase if she has hot flash symptoms (2a) and increase more if those symptoms are disclosed as menopause (2b).

Menopause and Status

In the last step of the stigma model, attributes identifying a person as a member of a group with unfavorable stereotypes justifies excluding them from group status in that context (Fiske, 1998; Link & Phelan, 2001). If menopausal symptoms and disclosure reduce agency and increase warmth of a female employee, we expect that the reduction in agency, beyond any gain in warmth, excludes her from leader status in the workgroup.

Agency is conceptually and empirically linked to status (Fiske et al., 2002) and theorized to be more influential than warmth in organizational contexts (Cuddy et al., 2011). Being high in task competence and interpersonally considerate is admired and desired in leaders, but confidence—an aspect of agency—is core to the idea of good leaders (Judge et al., 2002). In studies predicting leader emergence, agentic tendencies are a stronger predictor for who is identified as a leader in the group than is warmth (Badura et al., 2018; Koenig et al., 2011; Vial & Napier, 2018). The strong connection of agency with leadership means that when middle-aged women are seen as less agentic due to menopausal symptoms and disclosure, they are less likely to emerge as leaders. Because warmth judgments are also important for performance ratings of women (Chatman et al., 2022), we test the effect of agency beyond warmth judgments. We expect that based on the stigma process model:

Hypothesis 3: Leader ratings of a middle-aged woman decrease after hot flash symptoms (3a) and decrease more with menopausal disclosure (3b); this reduction is explained by agency judgments (3c).

Finally, the incongruence between agency stereotypes about women and leader prototypes has long been used to explain gender disparities in leadership (Eagly & Karau, 2002; Koenig et al., 2011). While the gender gap in competence stereotypes is narrowing over time (Eagly et al., 2020), the gender gap for agency, warmth, and who becomes a leader remains (Badura et al., 2018; Lyness & Grotto, 2018). Identifying a middle-aged woman as menopausal might not only bias judgments, but ultimately whether she is chosen as a leader compared to male counterparts. The above hypotheses compare leader ratings when middle-aged female employees are identified as menopausal (within-group), but we also ask how leader ratings of the middle-aged female worker compares to ratings of a middle-aged man in the same workgroup (between-group). Such gender comparisons are consistent with real work decisions where one person is promoted. Based on stigma processes, seeing menopausal symptoms may justify choosing the middle-aged man without symptoms as the leader.

Thus, compared to a middle-aged man without symptoms, we expect hot flash symptoms activate gendered stereotypes, and further if symptoms are disclosed as menopausal, the stereotypes are strengthened, linearly increasing gender bias in leader ratings. In short:

Hypothesis 4: Gender differences in leader ratings are greater when the woman has hot flash symptoms (4a) and when she discloses symptoms are menopausal (4b) compared to a man without those symptoms.

Method Overview

To have confidence that differences are caused by menopause, one must hold constant gender, age, and performance and assure temporal precedence of menopausal observation prior to judgments. To do so, we use experimental vignette methodology, “a useful way to address what seems to be an inescapable dilemma of internal versus external validity” (Aguinis & Bradley, 2014, p. 366). Study 1 was not pre-registered; Study 2 was a constructive replication and extension with pre-registered hypotheses at AsPredicted.com (https://aspredicted.org/blind.php?x=57S_HY9). Stimuli, data, and output can be found at this Open Science link (https://osf.io/dv2cu/?view_only=f44d1407f5d74b0aa6eb8fbf56606a98). The study was approved by Pennsylvania State University’s Institutional Review Board (#00013809).

Study 1 Method

We used a text-based scenario to describe a work project meeting and manipulated observations of a middle-aged female employee's menopausal symptoms and disclosure, then had participants assess her agency, warmth, and leadership potential.

Sample

We obtained a full-time US employee sample from Prolific Academia™, which provides a large participant panel with the highest quality and integrity of responses compared to similar sites (e.g., Douglas et al., 2023). The study was described as “Perceptions of Workplace Experiences,” without mentioning menopause or gender to avoid sampling bias, involving a 15-min online scenario study with a pay rate of \$2.34 on average (\$9.36/h). A power analysis indicated that we needed 244 people to have 80% power to find a small (0.20) effect size at 0.05 alpha levels (Faul et al., 2009); we recruited 275 participants for the study. After screening out participants who missed two or more attention or manipulation checks, our final sample was 241 participants (88% of the full sample). The sample averaged 35 years old ($SD = 10.35$, range = 19–64) and was 58.5% men and 41.0% women, with one participant identifying as nonbinary. The majority identified as White/Caucasian (77.6%) with 6.2% as Black/African/Caribbean, with tenure ranging from less than a year (5%) to more than 15 years (6%; $M = 5.97$, $SD = 5.47$) from a diversity of work contexts such as education (14.2%), technology (13.3%), management (9.6%), and finance/business (8.8%).

Design and Procedure

Participants were instructed to imagine they are attending a meeting with a new team to start a project. To enhance immersion, participants were shown an image of a conference room with a table and five chairs, and to imagine they enter the room first and then watch as a middle-aged man and woman, and then a young man and woman, enter the room. In all vignettes, both the middle-aged team members participated in the team discussion, holding constant a strong predictor of leadership emergence (Badura et al., 2018), and both were rated for leader potential. There were three menopausal conditions (middle-aged woman with no symptoms, with hot flash symptoms, and symptoms with disclosure); manipulation check items were inserted after the dependent variables to avoid demand biases or priming effects.

Importantly, if the race of the woman is left unspecified, most participants would imagine her as White (Roberts & Mortenson, 2023). Given Black women experience hot flashes more frequently and intensely (Avis et al., 2001)

and are stereotyped as more agentic and leader-like than White women (Hall et al., 2019; Rosette et al., 2016), it is important to assess the generalizability of menopausal stigma for both Black and White middle-aged women. Thus, participants were randomly assigned to one of six conditions based on a fully crossed design of three menopausal conditions by two race conditions (White and Black).

Stimuli

Menopausal Manipulation To develop realistic scenarios of symptoms, qualitative data from menopausal working women who described having hot flashes during work meetings and presentations informed the context of our scenario (Jack et al., 2019; Steffan, 2021). To create a realistic disclosure condition, our research team recruited 23 middle-aged female university staff and faculty members who reported they had menopausal hot flashes at work; of the 16 (57%) who said they disclosed, we asked them why and how they disclosed. The majority of these comments referred to menopause being “natural,” for example: “I just thought it best to say... ‘goodness, I’m having a hot flash’ ... It’s just a natural part of life.”

Using this real-world evidence, our scenario described a project-based meeting that manipulated the certainty of menopausal identification: a middle-aged woman, the same woman with hot flash symptoms, and the woman with hot flash symptoms disclosed as menopausal (see Appendix). In the *control* condition, the middle-aged woman's behaviors were the same as in the other two conditions but without menopausal symptoms or disclosure. In the *menopausal symptoms* condition, she was described as suddenly perspiring, flushing, fanning herself, and removing her outer layer of clothing, and she tells a coworker “I may have to step out for a few minutes.” In the *menopausal disclosure* condition, she was described the same way but tells the coworker “I’m having a bad ‘hot flash’ again. It’s that menopausal stage of life. I may have to step out for a few minutes.” She does not leave until after the meeting.

To confirm certainty of menopause identification was manipulated as intended, participants rated the likelihood (1 = *Not at all Likely* to 5 = *Very Likely*) that the middle-aged woman in the scenario was experiencing “hormonal changes (i.e., menopause)” or three other health issues associated with sudden sweating and flushing (Hanisch et al., 2008) that differ in their association with gender (see Table 1). As expected, the conditions linearly increased menopausal identification, $F(2, 235) = 31.98$, $p < 0.001$, such that there was a higher identification of menopause when experiencing hot flash symptoms versus none ($M_{\text{symptoms}} = 3.32$, $SD = 1.27$, $M_{\text{control}} = 2.92$, $SD = 1.30$; $p < 0.05$, 95% CI of the diff [0.02, 0.77]), and still higher when symptoms were disclosed as

Table 1 Perceived likelihood for middle-aged female target's health by experimental condition

	No symptoms		Hot flash symptoms		Menopausal self-disclosure	
<i>Study 1: Manipulation checks</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Hormonal changes (e.g., menopause)	2.92^a	1.29	3.32^{b,1}	1.27	4.40^c	1.03
Mood disorder (e.g., panic attack)	2.58 ^a	1.32	3.29 ^{b,1}	1.29	2.44 ^a	1.33
Cardiovascular problem (e.g., heart attack)	1.84 ^a	1.04	2.57 ^b	1.10	1.71 ^a	0.96
Health problem (e.g., allergic reaction)	2.10 ^a	1.16	3.08 ^{b,1}	1.18	2.07 ^a	1.25
<i>Study 2: Manipulation checks</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Menopause	3.52^a	1.20	4.22^b	1.03	4.86^c	.62
Anxiety	2.69 ^a	1.09	2.17 ^b	1.27	1.41 ^c	.80
Pregnant	1.58 ^a	.99	1.31 ^b	.73	1.04 ^{c,1}	.20
Dementia	1.19	.59	1.09	.38	1.05 ¹	.33

Note: Ratings indicate perceived likelihood (1–5). In Study 1, distractors are other acute health issues that are differentially associated with gender. In Study 2, distractors are other stigmatized emotional, physical, and cognitive conditions associated with women or aging. Bold font indicates the focal manipulation check item; different letter superscripts in the same row indicate significant ($p < .05$) differences by condition. For within-condition comparisons, means in the same column are all significantly different except those with the same numerical superscript

menopausal ($M_{\text{disclosure}} = 4.40$, $SD = 1.03$; $p < 0.001$, 95% CI of the diff [0.70, 1.46]). As shown in Table 1, menopause was similarly likely as other gendered health conditions (i.e., anxiety), until disclosure increased certainty about menopause.

Race of woman manipulation. We manipulated the middle-aged woman's race consistent with prior research (Leslie et al., 2017; Rosette & Tost, 2010). In the scenario, we referred to the woman by name, using names linked to Black or White women: Shanice or Claire (Eaton et al., 2020). Participants also saw a photo of either a middle-aged Black or White woman with a neutral expression from the Chicago Face Database (Ma et al., 2015). Photos were selected based on age and similar ratings of attractiveness and trustworthiness; unsurprisingly, the database ratings of dominance were consistent with racial stereotypes. Participants correctly identified age, gender, and race of their target.

Measures

Participants rated the middle-aged female coworker from *Not at All* (1) to *Extremely* (5) on *agency* (i.e., confident, independent, competitive, competent, intelligent; $\alpha = 0.87$) and *warmth* (good-natured, sincere, tolerant, warm²; $\alpha = .82$), items from the stereotype content model (Cuddy

et al., 2008; Fiske et al., 2002). Participants evaluated the *leader potential* of both the male and female middle-aged coworkers for the team's future project. They rated three items on a 7-point scale [*Not At All* (1) to *Very Much* (7)]: "how likely that [target] was a leader on the last project," "how much [target] desires to be leader of the next project," and "how effective [target] would be in leading next project" which were aggregated into one scale ($\alpha_{\text{woman}} = 0.83$; $\alpha_{\text{man}} = 0.76$).

Results

See Table 2 for correlations and descriptives and Table 3 for means by condition. Based on a 3 (menopausal conditions) $\times$ 2 (Black or White woman) ANOVA, there was a significant main effect for menopausal condition on agency [$F(2, 235) = 12.76$, $p < 0.001$, $\eta_p^2 = 0.098$], warmth [$F(2, 235) = 6.90$, $p < 0.001$, $\eta_p^2 = 0.056$], and leader potential [$F(2, 235) = 11.41$, $p < 0.001$, $\eta_p^2 = 0.088$]. Target race did not significantly interact with menopausal condition on agency [$F(2, 235) = 2.48$, $p = 0.09$, $\eta_p^2 = 0.021$], warmth [$F(2, 235) = 2.72$, $p = 0.07$, $\eta_p^2 = 0.02$], or leader ratings [$F(2, 235) = 2.51$, $p = 0.08$, $\eta_p^2 = 0.021$]. We tested our hypotheses aggregating data across the racial conditions, though explored within-group differences.³

² The item "warm" could be interpreted as referring to physical warmth due to body temperature. Given that the menopausal conditions referred to her as warm from "hot flashes," we ran analyses without the item "warm." Our conclusions do not change with or without the inclusion of "warm" in the warmth scale.

³ Exploratory within-group analyses revealed that the effect of menopausal condition on agency was significant for the White woman [$F(2, 121) = 13.65$, $p < .001$, $\eta_p^2 = .18$], while judgments of the Black woman did not significantly vary by condition [$F(2, 114) = 2.07$, $p = .13$; $\eta_p^2 = .04$].

Table 2 Descriptives and correlations for variables from Study 1 and Study 2

	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	1	2	3	4	5
1. Participant sex	.41	.49	.38	.48		.21**	.01	.03	-.05
2. Participant age	35.58	10.35	36.54	10.16	-.06		.14*	.11	-.06
3. Leader potential ^a	4.51	1.39	3.98	.88	-.05	.14*		.75**	.41**
4. Agentic	3.38	.85	3.83	.75	-.13*	.06	.73**		.57**
5. Warm	3.48	.82	3.58	.73	-.07	.13*	.37**	.57**	

Note: Sex of the participant is coded 0 = Men, 1 = Women. Values in the first two columns and below the diagonal are from Study 1; values in second two columns and above the diagonal are from Study 2. ^aRated on a seven-point scale in Study 1, a five-point scale in Study 2

* $p < .05$; ** $p < .01$

Table 3 Means for dependent variables by experimental condition with middle-aged woman target

Study 1	Control - No symptoms		Hot flash symptoms		Menopausal self-disclosure	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Leader potential ¹	4.98 ^b	1.24	3.99 ^a	1.43	4.60 ^b	.84
Agentic	3.66 ^b	0.67	3.03 ^a	0.87	3.48 ^b	.87
Warm	3.26 ^a	0.81	3.44	0.76	3.74 ^c	.83
Study 2	Hot flash symptoms		Menopausal other-disclosure		Menopausal self-disclosure	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Leader emergence	3.75 ^a	.90	4.03	.90	4.15 ^b	.81
Agentic	3.67 ^a	.77	3.79	.75	4.03 ^b	.68
Warm	3.43 ^a	.76	3.58	.72	3.71 ^b	.69

Note. Means values are ratings of the female target; different superscripts in the same row are significantly different from each other. ¹This was measured on a 7-point scale, all other measures are on a 5-point scale

Hypothesis Testing

According to Hypotheses 1 and 2, menopause conditions would linearly reduce judgments of agency and increase judgments of warmth. Compared to the control condition, the middle-aged woman with hot flash symptoms was rated lower in agency ($M_{\text{control}} = 3.66$, $SD = 0.67$, $M_{\text{symptoms}} = 3.03$, $SD = 0.87$; $p < 0.001$, 95% CI [0.32, 0.93]), supporting Hypothesis 1a, but not rated different in warmth ($M_{\text{control}} = 3.26$, $SD = 0.81$, $M_{\text{symptoms}} = 3.44$, $SD = 0.76$; $p = 0.43$, 95% CI of the diff [-0.48, 0.12]), failing to support Hypothesis 2a. Contrary to Hypotheses 1b and 2b, disclosure *increased* agency ($M_{\text{symptoms}} = 3.03$, $SD = 0.87$; $M_{\text{disclosure}} = 3.48$, $SD = 0.87$; $p = 0.002$, 95% CI [0.14, 0.75]), with no change to warmth.

Hypothesis 3 posited that menopausal condition would linearly reduce leader potential and that this would be due to lower agency judgments. Consistent with Hypothesis 3a, hot flash symptoms reduced leader potential ($M = 3.98$, $SD = 1.43$) compared to no symptoms ($M = 4.98$, $SD = 1.24$, $p < 0.001$, 95% CI [-1.50, -0.49]). Contradicting Hypothesis 3b, menopausal disclosure significantly *increased* leadership ratings ($M_{\text{symptoms}} = 3.99$, $SD = 1.43$, $M_{\text{disclosure}} = 4.60$, $SD =$

1.33; $p = 0.01$, 95% CI [0.11, 1.12]). To test Hypothesis 3c about the indirect effect via agency beyond warmth, we used PROCESS 3.5 (Hayes, 2018) and test agency and warmth as parallel mediators for two models comparing symptom condition (coded as zero) to the control or disclosure condition (coded 1). In the first model, symptoms significantly predicted leader potential due to lower agency than no symptoms ($b = 0.75$, $se = 0.16$, 95% CI [-1.08 to -0.45]) as expected by Hypothesis 3c. In the second model, there was a significant indirect effect such that symptoms with disclosure versus none *increased* leader potential ratings via higher agency ($b = 0.53$, $se = 0.17$, 95% CI [0.20, 0.89]), in the opposite direction of Hypothesis 3c. In both cases, the indirect effect of condition on leader potential via warmth was not significant as expected. Thus, Hypothesis 2c is partially supported. See Fig. 1 for all indirect and direct effects.

Finally, Hypothesis 4 asked if there was greater gender disparity in leader potential ratings in the menopausal conditions. Using within-person comparison of ratings for the middle-aged female and male employee on the team, a mixed-model analysis revealed an overall gender disparity in leader ratings [$F(1, 238) = 68.96$, $p < 0.001$, $\eta_p^2 = 0.23$; $M_{\text{man}} = 5.35$, $SD = 1.03$; $M_{\text{woman}} = 4.51$, $SD = 1.39$),

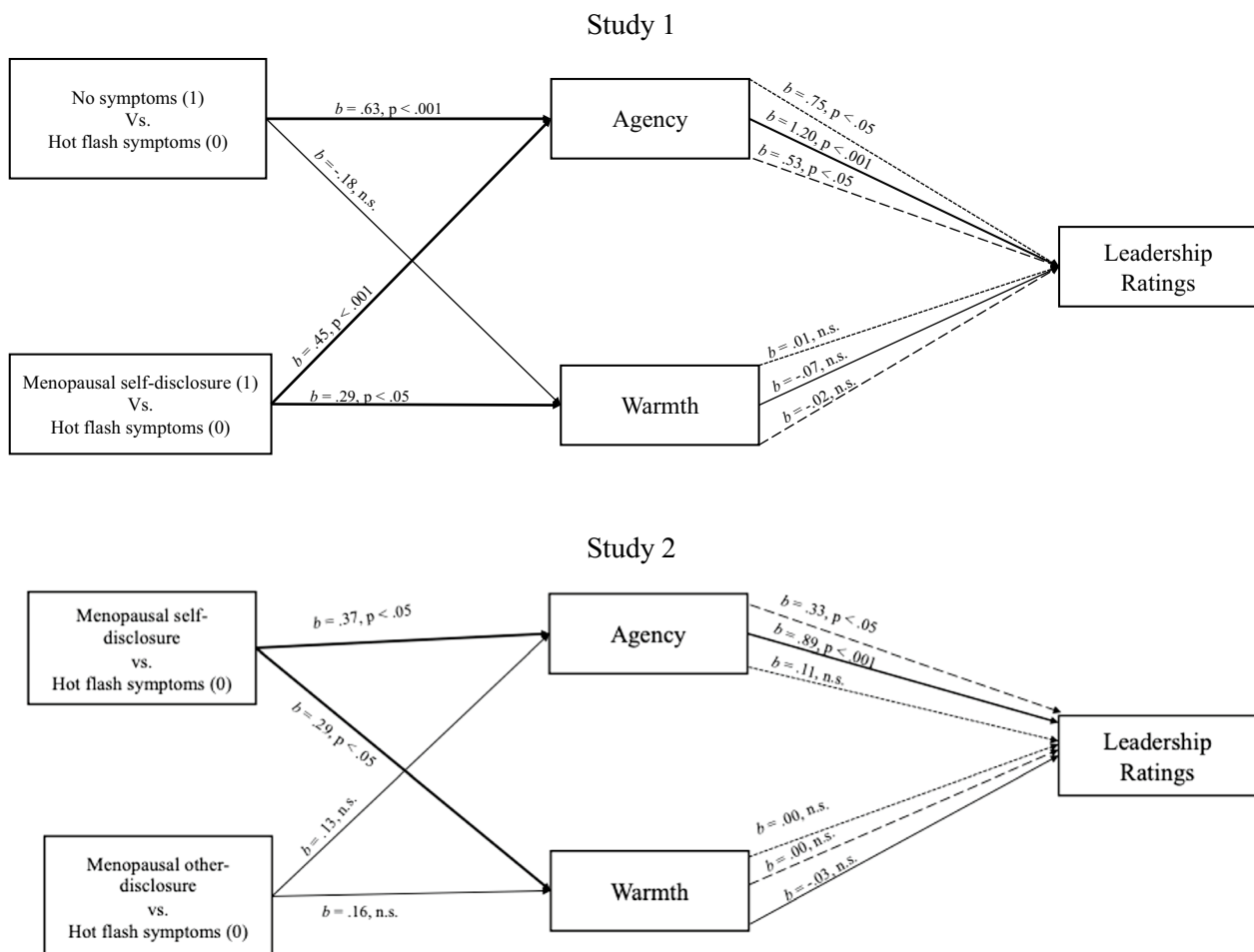


Fig. 1 Results of indirect effects from menopausal condition to leader potential ratings of the middle-aged female coworker. The solid lines indicate direct effects. The top figure shows results from Study 1: small dashed lines indicate indirect effects of no symptoms and large dashed lines indicate indirect effects of self-disclosure (compared

to symptoms). The bottom figure shows results from Study 2: small dashed lines indicate indirect effects of other-disclosure and large dashed lines indicate indirect effects of self-disclosure (compared to symptoms)

but the size of this disparity depended on menopause condition [$F(2, 238) = 10.35, p < 0.001, \eta_p^2 = 0.08$]. Without symptoms, the gender difference in leader ratings for the middle-aged employees on the team was small and non-significant (Cohen's $d = 0.20$, 95% CI $[-0.02, 0.43]$; $M_{\text{diff}} = 0.24$, $SD = 1.21$, $\text{paired } t = 1.80, p = 0.08$). With hot flash symptoms, the leader potential of the middle-aged woman became significantly lower than the man (Cohen's $d = 0.73$, 95% CI $[0.49, 0.97]$; $M_{\text{diff}} = 1.34$, $SD = 1.83$, $\text{paired } t = 6.72, p < 0.001$), consistent with Hypothesis 4a. After disclosing menopause, the gender disparity was smaller than symptoms alone; this is inconsistent with Hypothesis 4b, but the difference is moderately large and significant (Cohen's $d = 0.59$, 95% CI $[0.35, 0.83]$; $M_{\text{diff}} = 0.89$, $SD = 1.50$, $\text{paired } t = 5.22, p < 0.001$). See Fig. 2 for a bar graph of the gender disparity.

Post Hoc Analyses

It is possible that the surprising results are driven by participant gender or age subgroups. Female participants tend to prefer female leaders (Vial et al., 2018) and may be more knowledgeable and empathetic toward menopause at work (Steffan & Potočník, 2022). We conducted exploratory ANOVAs and indirect effects with participant sex as an interactive factor with menopausal condition. Participant sex did not significantly moderate the effect of menopausal condition on judgments ($p > 0.05$). Further, while age was positively correlated ($r = 0.14, p < 0.05$) with leader judgments overall, the interactive role of both age and age group (younger, middle-aged, older) had non-significant interaction effects by condition.

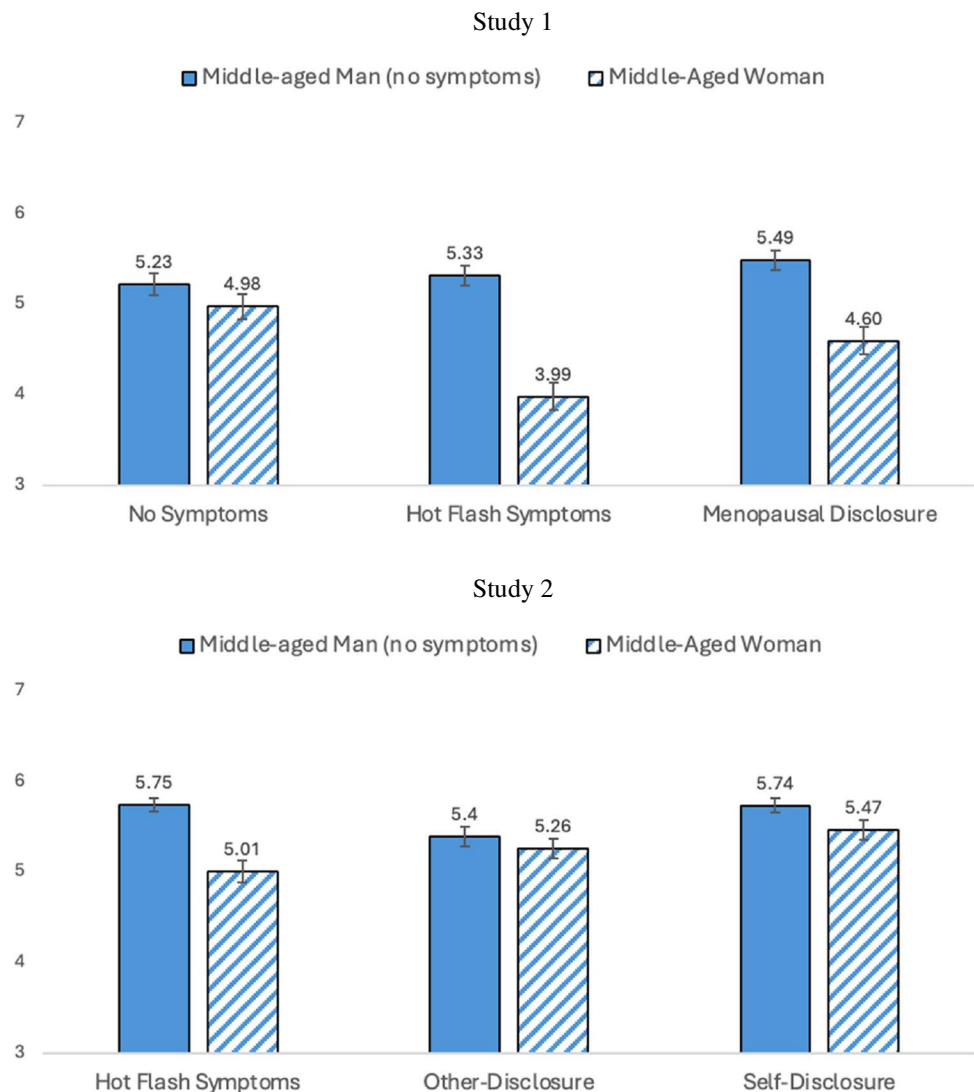
Discussion

Based on the three components of the stigma process model (Link & Phelan, 2001), menopausal hot flashes carry stigma at work. The middle-aged woman is seen as having similar leader potential as her middle-aged male coworker—until she is observed having hot flashes at work. Hot flash symptoms increased the likelihood that the middle-aged woman is identified as menopausal, lowered agency, and increased warmth judgments. The lower agency and higher warmth is consistent with stereotypes of female and older workers being weak and unhealthy. Lower agency (not warmth) explained why having hot flashes meant she was less likely to be seen as a leader, and this generalized across the stimuli of both a White and Black woman. Within-group analyses show the costs of symptoms were significant for the White woman but

not the Black woman; this exploratory finding should be interpreted with caution.

If hot flashes are inferred to be menopausal and menopausal identity carries stigma, then disclosure should incur even greater costs to judgments and leader status. Yet we found that when a woman disclosed that the hot flash symptoms were menopausal, the judgments became more favorable than without disclosure, and she was seen as similarly agentic and leader-like as when she had no symptoms. Further, the gender disparity in leader potential remained when she disclosed, though smaller than when she only had symptoms without disclosure. One alternative explanation raised by manipulation check results is that the hot flash symptoms condition is costly due to being perceived as another stigmatized condition, such as anxiety. In Study 2, the visual representation of hot flash symptoms increases the certainty of menopause over anxiety to see if we replicate the costs

Fig. 2 Study 1 and 2: Gender disparity in leader potential ratings by menopausal condition. Note. The description of the middle-aged male coworker did not vary across conditions. Values for both studies indicate ratings from 1 to 7 on the three-item leader potential measure used to rate both male and female coworker in both studies



to work judgments. Overall, Study 1 evidence suggests that menopausal hot flashes evoke *physical* stigma more than *identity* stigma.

There may be artifactual explanations for our findings. The measure of leader potential was not a previously validated measure and included perceptions of past experience and the middle-aged persons' interest in becoming a leader. In Study 2, we include a more established measure of leader potential. Further, in this study we operationalized menopausal identification as self-disclosure, but it is unclear if disclosing menopause has the unexpected benefits due to disclosing behavior or a lack of stigma for the disclosure content. Though the disclosure associates the person with gendered-aging low agency stereotypes; agentic behavior may override the stereotype (Kunda & Thagard, 1996). A woman with hot flashes who discloses menopause appears more assertive and self-assured than if she does not disclose and then seems insecure and embarrassed. Self-disclosure of depression (Barth & Wessel, 2022) and physical disability (Lyons et al., 2018) was found to improve the low agency stereotypes of those health conditions. Thus, it is possible that the benefits from disclosure as an agentic act override lower agency of symptoms.

Another possibility is that disclosure reduces uncertainty and the need for sensemaking (Maitlis, 2005), thus improves judgments compared to not knowing. Finally, disclosing menopause may be understood as a natural healthy transition that is limited in duration so less concerning than unlabeled symptoms (Avis et al., 2015). The type of stigma determines if disclosure has more benefits than costs (Sabat et al., 2020), and disclosing stigma that is not in the person's control and is short term is less problematic than ongoing stigma that one seems responsible for (Kreiner et al., 2022). This argument suggests that the menopausal explanation, not the self-disclosure behavior, explains the favorable response to hot flash symptoms.

Study 2 Method

In Study 2, we conduct a constructive replication (Lykken, 1968), testing the robustness of the benefits of menopausal disclosure with different stimuli and measures. These changes address the possibility that methodological artifacts of Study 1 explain the reactions to menopause. In Study 1 we relied on written description of the symptoms, rather than visually showing the symptoms. Text-based stimuli are less immersive than visuals (Aguinis & Bradley, 2014), thus may weaken the salience of physical stigma. Second, stigma is specific to the context (Jones & King, 2014; Link & Phelan, 2001), and our Study 1 scenario described a mixed-gender team. Menopausal conditions may be less favorable when both the female body and personal disclosures are deviant

from the norm, as would be the case in a more male-dominated work context (Jack et al., 2019; Whiley et al., 2023); we test this boundary condition.

To more fully understand the unexpected benefit of menopausal disclosure in Study 1, we compare the effect of symptoms that are self-disclosed as menopausal with symptoms labeled as menopausal. If benefits are due to disclosure as an agentic act, we should find that only self-disclosure improves reactions to symptoms; on the other hand, symptoms labeled as menopausal by anyone may have the benefit of reducing uncertainty and ruling out other stigmatized health issues. We expect to replicate the Study 1 finding that a woman disclosing her symptoms as menopausal ("self-disclosing condition") improves judgments over unlabeled symptoms; as a comparison, we include a condition where her symptoms are explained as menopausal ("other-labeling condition"). We pre-registered the following revised hypothesis (AsPredicted.org #108,265)⁴:

Hypothesis 5: Agency judgments increase when a middle-aged woman with hot flash symptoms self-discloses menopause (5a); leader potential ratings are higher from self-disclosure due to agency (5b).

Sample

Based on the Study 1 power analysis for six conditions, we recruited 299 full-time employees from Prolific, excluding those who participated in the prior study; they were paid \$2.92 for an 11-min online study (\$15.92/h). Age ranged from 19 to 72 ($M = 36.54$, $SD = 10.16$), 61.5% identified as men and 38% as women, 73.9% identified as White/Caucasian and 12% as Asian, 5.7% as Black, and others selecting mixed ethnic identities. They worked in a range of industries, from computer/tech occupations (18.1%), education (11.7%), sales (9.4%), and office and administrative support (9.0%), with an average tenure of 6.74 years.

Design and Procedure

We presented a similar scenario of a project meeting, with a middle-aged woman and man both participating. Following best practices for increasing realism (Aguinis & Bradley, 2014), all participants saw a photograph of a professionally dressed, White blonde middle-aged woman who is sweating, looks uncomfortable, and is fanning herself to convey hot

⁴ We also pre-registered a hypothesis that menopausal identification would be worse in a masculine and male-dominated work context than in the mixed-gender context used in Study 1. In fact, the menopause conditions had similar effects regardless of the work context. For parsimony, we do not state that hypothesis in this manuscript; results reported are aggregated across the contexts.

flash symptoms. Participants were randomly assigned to one of six conditions based on a full-crossed design of three menopausal conditions (unlabeled symptom, symptom with self-disclosure, symptom with other-disclosure) by two contexts (mixed-gender or male-dominated). The perceived realism of the scenario (rated on a 1–7 scale) was high ($M = 5.82$, $SD = 1.23$).

Stimuli

Menopausal manipulation As seen in the [Appendix](#), in the scenario the leader pauses and notices the woman's discomfort, creating a realistic moment for explanation. In the *self-disclosure* condition, the woman explains her symptoms are menopausal ("Please continue. Just having a hot flash – I'm menopausal. I'll be fine in just a minute"). In the *other-labeling* condition, a coworker explains her symptoms ("Please continue. It's just a hot flash – she's menopausal. She'll be fine in just a minute"). This approach varies the source of the information and holds constant the content and tone of the explanation. For the manipulation check, we asked about the certainty of four health conditions (see [Table 1](#)). A one-way ANOVA confirmed that menopausal identification varied by condition [$F(2, 296) = 17.26$, $p < 0.001$]. Likelihood of menopause was moderately high with symptoms ($M = 4.29$; $SD = 0.96$), which increased when other-labeled ($M = 4.47$; $SD = 0.84$, 95% CI of diff. $[-0.03, 0.40]$) and significantly increased when self-disclosed ($M = 4.91$, $SD = 0.35$, 95% CI of diff. $[0.41, 0.84]$). Further, menopause was a significantly more likely explanation than the other three alternatives within all three conditions; her hot flash symptoms were more likely to be seen as menopause than other health issues, with disclosure increasing certainty.

Gendered work context manipulation Half the respondents received the original mixed-gender context; the other half received a male-dominated context manipulated by the names of employees and type of project (see [Appendix](#) for materials). To check the manipulations were effective, participants rated the gender ratio of this work context, where -100 is all male, 0 is gender-balanced, $+100$ is all female. The conditions were perceived as intended [$M_{\text{male}} = -49.35$, $SD_{\text{male}} = 27.00$, $M_{\text{mixed}} = -3.81$, $SD_{\text{mixed}} = 28.85$; $F(1, 297) = 198.69$, $p < 0.001$].

Measures

Immediately after reading the scenario, participants were asked to evaluate the middle-aged man and woman on their *leader potential* with the same three items as in Study 1 ($\alpha_{\text{man}} = 0.76$; $\alpha_{\text{woman}} = 0.82$), and the middle-aged woman with an established six-item measure of leader emergence (e.g., "has potential to exhibit leadership in the team"; $\alpha = 0.96$) on a 5-point scale (Lanaj & Hollenbeck, 2015). These two ratings of her leadership showed strong convergent

validity ($r = 0.83$, $p < 0.001$); we use the leader emergence measure for all analyses except the gender disparity. Next, they rated her *agency* with the same scale from Study 1 ($\alpha = 0.88$) and *warmth* based on three indicators of prosocial tendencies: helpful, gentle, kind ($\alpha = 0.83$).⁵

Results

See [Table 2](#) for descriptives and correlations and [Table 3](#) for means by condition. A 3 (menopause condition) by 2 (gender context) ANOVA showed that menopause condition had a significant main effect on leadership ratings, $F(2, 293) = 5.17$, $p < 0.01$, $\eta_p^2 = 0.03$; agency, $F(2, 293) = 6.29$, $p < 0.01$, $\eta_p^2 = 0.04$; and warmth, $F(2, 293) = 3.85$, $p < 0.05$, $\eta_p^2 = 0.03$. Gendered work context did not interact with menopausal condition for leadership ratings [$F(2, 293) = 0.10$, $p = 0.90$], agency [$F(2, 293) = 0.27$, $p = 0.76$], or warmth [$F(2, 293) = 0.03$, $p = 0.97$]. Thus, we aggregated across context for hypothesis testing (see [Table 3](#)).

Hypothesis Testing

The new Hypothesis 5 posited that self-disclosure would enhance leadership ratings because it shows agency, while a coworker identifying symptoms as menopausal does not. Consistent with Hypothesis 5a, self-disclosure significantly increased agency compared to unlabeled symptoms ($M_{\text{diff}} = 0.37$, $se = 0.11$, $p < 0.01$, 95% CI of diff. $[0.11, 0.62]$), while other-disclosure of symptoms did not. In addition, self-disclosure increased warmth over unidentified symptoms ($M_{\text{diff}} = 0.29$, $se = 0.10$, $p < 0.05$, 95% CI of diff. $[0.04, 0.54]$), consistent with the original Hypothesis 2b. Self-disclosure also significantly enhanced leadership ratings compared to unlabeled symptoms ($M_{\text{diff}} = 0.39$, $se = 0.12$, $p < 0.01$, 95% CI of diff. $[0.69, 0.09]$).

To test the indirect effect Hypothesis 5b, we conducted parallel mediation analyses using PROCESS Macro 3.5 (Hayes, 2018), with both agency and warmth as mechanisms. As in Study 1, unlabeled symptoms were coded as the comparison condition (0), compared to menopausal self-disclosure (1) and to menopause disclosure by a coworker (1). Menopausal self-disclosure had a significant indirect effect on leadership via agency ($b = 0.33$, $se = 0.09$, 95% CI $[0.14 \text{ to } 0.52]$), while other-labeling did not have significant effect via agency ($b = 0.11$, $se = 0.09$, 95% CI $[-0.07 \text{ to } 0.30]$), supporting Hypothesis 5b. See the bottom of [Fig. 1](#) for all coefficients.

⁵ We revised the warmth measure to avoid the confounding item "warm" for our study of hot flashes. We also included a new agency measure with multiple sub-dimensions (Ma et al., 2022); results lead to the same conclusions for each dimension and for an overall composite.

Further, we replicated the significant gender difference in leadership potential ratings that varies by menopause condition [$F(2, 296) = 5.81, p < 0.05, \eta^2 = 0.038$]. As in Study 1, the gender disparity favoring men for leadership is strong and significant when the middle-aged woman has unlabeled hot flashes (Cohen's $d = 0.55, M_{\text{diff}} = 0.74, se = 0.13, p < 0.001, 95\% \text{ CI of diff. } [0.47, 1.01]$), but smaller—though still favoring the man—when she self-discloses as menopausal (Cohen's $d = 0.24, M_{\text{diff}} = 0.27, se = 0.12, p < 0.05, 95\% \text{ CI of diff. } [0.04, 0.50]$) and non-significant in the coworker disclosure condition but lower overall (Cohen's $d = 0.09, M_{\text{diff}} = 0.14, se = 0.13, p > 0.05, 95\% \text{ CI of diff. } [-0.14, 0.41]$). See the bottom of Fig. 2 for bar graphs of these results.

Post Hoc Analyses

We again explored if participant sex modifies reactions to disclosure, with a 3 (menopause conditions) $\times$ 2 (participants' sex) ANOVA. There was no significant interaction of conditions on judgments nor conditional indirect effects. A three-way interaction with gender work context also did not yield significant results.

Discussion

Overall, Study 2 replicated the benefits of menopausal disclosure found in Study 1. Further, Study 2's design and new conditions isolated the act of disclosure from menopausal labeling. The woman self-disclosing that her symptoms are menopausal *enhanced* leader potential ratings compared to not disclosing, while simply knowing that the symptoms were menopausal was insufficient for this benefit. Prior findings had shown that menopause works similar to other forms of stigma, where disclosure enhances both agency and warmth judgments over not disclosing (Barth & Wessel, 2022; Ensari & Miller, 2002; Hebl & Skorinko, 2005; Lyons et al., 2018). Our study is the first to show that self-disclosing menopause increases leader potential due to enhanced agency.

As a comparison, we tested whether the benefit is simply knowing that menopause is the explanation for symptoms, via reducing uncertainty or reducing concerns about other stigma. A coworker explaining the symptoms are menopausal did not have same benefits as self-disclosure on judgments. One possible explanation is that our manipulation of a coworker explaining symptoms undermines the symptomatic woman's agency, speaking for her rather than her speaking for herself, making her even less leader-like. Yet coworker-labeling symptoms as menopausal did not *worsen* judgments of agency, warmth, and leader judgments compared to symptoms alone. Overall, menopausal identification did not appear to carry stigma at work.

General Discussion

Based on popular media (Kale, 2021) and organizational scholarship (Grandey et al., 2020), we began our inquiry by assessing whether others view menopause as carrying stigma at work. According to the social cognitive view of stigma (Link & Phelan, 2001), menopause carries stigma if identifying a woman as menopausal evokes unfavorable stereotypes and constrains her from gaining status in the group. Prior research from the menopausal women's perspective showed that hot flashes are the most stressful symptoms for working women, due to fears of others identifying her as menopausal and the anticipation of social stigma (Jack et al., 2019; Steffan, 2021). This fear of stigma explains why only about a third of women disclose their hot flashes are menopausal; yet both our studies suggest that this disclosure overrides the stigma of symptoms compared to those who do not explain them.

Across our two experimental studies, we found support for stigma from menopause at work; having hot flash symptoms during a work meeting increased awareness she was menopausal and lowered ratings of leadership potential due to reduced agency (e.g., competence, confidence). The experimental design held all other aspects of the woman and her performance constant, to permit the causal inference that observed hot flashes at work comes with costs. We found that the symptoms carried *physical* stigma—as seen by excluding her from status in the group—but not when the symptoms were identified as menopausal, thus not supporting a key component of menopausal *identity* stigma.

One alternative explanation is that the stigma of unlabeled symptoms in Study 1 was from the similarly likely attribution of other stigmatized health issues (i.e., panic attack). However, in Study 2, the symptoms are more clearly perceived as menopausal and the career costs remain. Further, the benefit of identifying the symptoms as menopausal was specific to the act of her self-disclosing, not from menopausal identification ruling out other health stigmas. Self-disclosing menopause did not worsen the reaction, as would be expected from menopausal identity stigma, and in fact, returns agency judgments back to pre-symptomatic levels. Overall, we conclude that physical symptoms of menopause carry stigma at work, but menopausal self-disclosure is an agentic act that counteracts the low agency stereotypes from seeing hot flash symptoms.

Scientific Contributions

The current line of inquiry contributes to theorizing and the body of evidence around women's health biases and disclosure dilemmas. Our research responds to calls to study gendered aging at work (Finkelstein et al., 2013; Marcus & Fritzsche, 2015). When focusing on gender stereotypes, we see trends

such that the agency gap is decreasing while the warmth bonus for women remains (Eagly et al., 2020). In fact, some studies are showing that women have career advantages (Leslie et al., 2017). However, this rosy picture is more complicated at the intersection of gendered aging; *middle-aged* women gain agency but lose warmth compared to younger women (Chatman et al., 2022). Our research contributes additional nuance by considering both (1) between-group judgments (i.e., middle-aged men and menopausal women, Black and White menopausal women) and (2) within-group judgments (i.e., middle-aged women with symptoms who disclose or not).

First, we assessed the possibility for both gender and racial biases in judgments. The perceived leader potential of a middle-aged male and female coworker was similar—*unless* the woman had menopausal symptoms. Those symptoms activated gender stereotypes for lower agency-higher warmth, which the stereotype content model (SCM) describes as evoking pity and compassion, not admiration and status conferral (Cuddy et al., 2008). It seems that once a middle-aged woman is seen having a hot flash at work, she has a lower chance of becoming the project leader, and a middle-aged man on the team who does not have such symptoms is more likely to be selected. The loss of agency from the stereotypes activated by symptoms carried the most explanatory power to leader potential ratings, which is consistent with the prototype of leaders as confident and assertive. In terms of racial biases, reactions to hot flash symptoms did not significantly differ by the woman's race. However, there are reasons to be cautious about this conclusion. First, hot flash symptoms tend to be more frequent and intense for Black than White women (Avis et al., 2001, 2015), suggesting Black women may be more likely observed having the symptoms at work and thus face the career consequences we identified. Second, exploratory analyses showed a trend for the costs of menopausal symptoms to be greater for the White than the Black woman, consistent with racial stereotypes about weakness and resilience to pain (Abrams et al., 2014). Field research is needed to draw firm conclusions about racial differences in menopausal career costs.

Second, we considered how a middle-aged woman is seen differently when she has menopausal symptoms and discloses them as menopause. Our findings confirm that having hot flash symptoms at work reduce her leader potential due to lowered agency judgments, and this was robust across the gender and age of our participants. Further, our study contributes to the body of work on stigma disclosure (Jones & King, 2014; Ragins, 2008). When faced with the “disclosure dilemma” of having symptoms at work, women report anticipated stigma if they were identified as menopausal (Jack et al., 2016; Steffan, 2021). Yet we find that disclosing menopause as the reason for hot flash symptoms *reduced* negative reactions—in fact, she was seen the same as when she had no symptoms. This is consistent with findings in the disclosure literature that how to respond to the dilemma

depends on the type of stigma (Barth & Wessel, 2022; Sabat et al., 2020). Hot flash symptoms at work impair agency, but the act of disclosure offers behavioral evidence of agency that counters that stereotype. Similarly, self-disclosure of depression (Barth & Wessel, 2022) and physical disability (Lyons et al., 2018) improves the low agency stereotypes of those health conditions, whereas self-disclosure of mental illness, sexual identities, or moral-tainted illness (i.e., AIDS) tends to evoke stronger bias than not disclosing (Chaudoir & Fisher, 2010; Sabat et al., 2020). Notably, our scenario disclosed menopause in a matter-of-fact way, but according to qualitative data, women also disclose with positive reframing or humor (i.e., having a “power surge” or “personal summer”). Future research should compare efficacy of disclosure style for menopause (Barth & Wessel, 2022; Jones et al., 2016).

Limitations and Research Implications

These studies should be considered a starting point for future research. A clear limitation is that most of the evidence is based on scenarios and how people say they *would* respond. We followed best practices (Aguinis & Bradley, 2014) with immersive visual and textual descriptions and a realistic scenario (i.e., form impressions of new team), but a different method may change the strength of the effects found. It is possible that our findings are conservative; actually sitting next to a woman who is suddenly sweating may involuntarily induce disgust and create even stronger stigma effect than our text or visual stimuli. On the other hand, our scenario-based effects may be stronger than found with actual coworkers because stereotypes are more activated and applied when one has little information about the target (Kunda & Thagard, 1996). Moving forward, future research should examine in vivo observation of hot flashes and behavioral reactions. A field experience sampling design is temporally challenging—hot flash symptoms are unpredictable and vary greatly within-person (i.e., daily, weekly, monthly), and need to be linked to observations by a coworker or supervisor in the same time frame. Such an approach would permit testing how ongoing relationships and prior knowledge change reactions to symptoms.

Both our scenario and sample limit the generalizability of our findings. The scenario showed a photo of a white-collar corporate meeting room, which has traditionally been seen as guided by male normativity (Acker, 1990), yet it is possible that responses to symptoms would be more negative if occurring at a more masculine context like a construction site or a firefighter training. Further, as described by the Prolific Academia website, their users tend to be more educated and higher income than the population and are likely to be knowledge workers who can do online surveys due to access to technology. Our white-collar corporate scenario is ecologically valid for this sample, and further, we confirmed

that a male-dominated scenario did not change results. Research is needed with a less educated and lower socioeconomic sample to confirm the robustness of findings.

Our study's conclusions are also limited to hot flash symptoms as a visible indicator of menopause at work; future research should widen this lens. The frequency and intensity of physical (body aches, insomnia) and psychological (moods, cognition) symptoms (Faubion et al., 2023; Steffan & Potočník, 2022) together impair self-efficacy and engagement, consistent with internalized stigma which may hold women back at work (Bariola et al., 2017; Griffiths et al., 2013; Jack et al., 2016). Given we find a lack of identity stigma for menopausal disclosure, future research needs to explore the potential that menopausal women are seen as ready to tackle new productive roles (Dillaway, 2005; Quental et al., 2023; Steffan, 2021) and perhaps more favorably due to menopause eliminating the stigma associated with menstruation and pregnancy (Johnston-Robledo & Chrisler, 2013; Masser et al., 2007; Peterson Gloor et al., 2022). Overall, research is needed to compare internalized stigma (one's self-view) and social stigma (other's judgments) as explanations for why menopausal symptoms influence work outcomes.

Our study focused on the outcome of leader potential ratings, consistent with the stigma model predicting stigma means exclusion from social status (Link & Phelan, 2001). We found menopausal disclosure benefited leader ratings, but other costs may emerge. Menopausal-disclosed women may be denied challenging assignments to "protect" them, a form of benevolent sexism or ageism (McMahon & Kahn, 2016; Vale et al., 2020), or face gender harassment such as jokes about symptoms (Jack et al., 2019; Steffan, 2021). Disclosure may contribute to interpersonal mistreatment as described in news stories (Telegraph, 2022) and our opening quotes. Future work should compare formal (i.e., leader decisions) and informal (i.e., mistreatment) reactions.

Practical Implications

Hot flashes are a practical problem. Menopausal women are most likely to experience this symptom over other symptoms (Avis et al., 2015), and working women report it as the most distressing symptom due to anticipated stigma (Jack et al., 2019; Steffan, 2021). When experiencing a hot flash during a meeting or presentation, women are faced with a disclosure dilemma—should they explain the reason for their sudden sweating and flushed face or not? Finding that menopausal disclosure overrides stereotypes about agency and increases likelihood of leadership offers very practical advice for the working woman coping with hot flashes; saying nothing is worse than matter-of-factly explaining they are signs of menopause.

Education about this natural health stage can help create allies to support menopausal women at work (Grandey et al., 2020). While self-disclosure as the solution puts the onus on the shoulders of the menopausal woman, a coworker identifying the symptoms as menopausal did no harm, but other responses may be more effective allyship. A proactive solution is to educate the (aging) workforce about what are signs of healthy aging, using available toolkits (i.e., <https://swhr.org/resources/menopause-workplace-resource-guide-for-managers/>) and increasing empathy about health concerns for all employees. Even more practically, managers can offer structural changes—from small desk fans to remote work—that reduce the frequency and intensity of hot flash symptoms in the first place.

Appendix: Study Stimuli

Study 1

Instructions: Gender-balanced Context

Imagine you have just started working at a new company where you work on team projects. You know your boss and direct supervisor, but this company is fairly large and today you are assigned to a new team with people you have not worked with before. You will be asked to provide your impression of them after this meeting. Each time people are assigned to a new team, it is normal to quickly form impressions of the team members and project leaders, to determine who will be the best people to work with and seek guidance from. After reading this scenario, you will be asked for your impressions about these team members.

Today, you enter the meeting room (see picture below) and sit down at the side of the table near the window so you can observe everyone coming in. You know that today they will be discussing their last project, before moving to the new project that you will work on.

You see the five team members arrive. Then your boss arrives and sits at the head of the table in front of the screen.

Your boss introduces each team member to you: Claire, Shanice and Brad, who are the most experienced members of the team, and clearly the oldest members. Then Maria and John, who are newcomers this year, although they have been here longer than you.

Then the boss says, "Okay, first let's review the last project report." You are able to just observe their interactions and form impressions, since you were not part of that project. The boss brings up project numbers on the screen, and there is a quiet moment while everyone pulls out their own paper copies of the report.

All Conditions: Control [Symptoms and Disclosure Conditions shown in *italics*]

Then, your boss looks across the table and says, “What do you think about these numbers, [Claire/Shanice]?” You look over at [Claire/Shanice] (the condition determined who was pictured below). [Claire/Shanice] appears to be in her late 40 s. [Claire/Shanice] starts pointing out some key numbers to the group and suggests what they could do better as a team next time.



White Woman Stimuli (Claire)



Black Woman Stimuli (Shanice)



The boss looks back at the screen and nods at what she says, then moves to the next slide and asks Brad for input. Brad seems like he’s in his late 40 s. He starts to give detailed suggestions for improving their projects in the future.

[Condition: Hot Flash Symptoms]

As you watch her, [Claire/Shanice] tugs at her shirt collar, pulling it away from her neck. You notice that her neck is flushed. Her face becomes more and more red as she speaks, and beads of sweat appear on her forehead.

The boss looks back at the screen and nods at what she says, then moves to the next slide and asks Brad for input. Brad seems like he’s in his late 40 s.

While Brad responds, you continue to observe as [Claire/Shanice] (shown above) removes her suit jacket, hanging it on the back of the chair. She wipes her forehead with the back of one hand and starts searching through her work bag with the other hand.

Maria turns to [Claire/Shanice] and asks, “Is everything okay?”.

[Condition: Menopausal Disclosure]

You hear [Claire/Shanice] say, “I’m having a bad ‘hot flash’ again. It’s that menopausal stage of life. I may have to step out for a few minutes.” [Claire/Shanice] starts fanning herself with the paper version of the report while Brad talks.

You turn back to the slides and listen to what Brad is saying about this slide. He starts to give detailed suggestions for improving their projects in the future.

The meeting time is almost over. After Brad is done, the boss asks the rest of the attendees, “Do you have anything more to add?” They shake their heads no. The boss then tells the team that you will be part of the new project and moves to a new slide to introduce this project.

The boss says: “The project is for an important company client and will require many hours of working closely together for the next month. Your team must agree on a project leader who will lead the team’s tasks, be available regularly to meet with the client, and handle any issues that arise. In the next hour, I’d appreciate your input.

[Claire/Shanice] says, “Okay, thank you!,” grabs her bag, and quickly leaves the room. Brad and the three other attendees also say thanks, then walk out, while you sit and collect your thoughts. You need to think about your impressions of these team members, and who you would like as the project leader.

Study 2

Instructions Gender-balanced [male-dominated] Context

Imagine you have just started working at a new company [at a new engineering company] where you work on team research & development projects. You know your direct supervisor, but this company is fairly large and today you

are assigned to a new team with people you have not worked with before. You will be asked to provide your impression of them after this meeting. Each time people are assigned to a new team, it is normal to quickly form impressions of the team members and project leaders, to determine who will be the best people to work with and seek guidance from.

After reading this scenario, you will be asked for your impressions about these team members. Today, you enter the meeting room and sit down at the side of the table near the window so you can observe everyone coming in.



You see the five team members arrive and they introduce themselves. Donna and Brad, who seem to be oldest and most experienced members of the team. Then three others, Shanice, Maria and John, [Tyrell, Dave and John], who seem younger.

All Conditions: Hot Flash Symptoms [Other- and Self-Disclosure Conditions shown in italics]

All five have worked together for the past year on a project, so they know each other pretty well. You are the newcomer to the team. The team agrees to review the last project report. The project numbers come up on the screen, and there is a quiet moment while everyone reviews their paper copies of the report.

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Donna—a blonde middle-aged woman—identifies a few problematic numbers to the group. After interpreting them, she makes a few points about what they could do better as a team next time.

Everyone nods at what she says, then moves to the next slide.

Brad—a middle aged man with graying hair—speaks up and points out some of his concerns with the numbers, and next steps for the team to do better.

As you listen to Brad, Donna tugs at her shirt collar, pulling it away from her neck. Then you see her neck is flushed. Her face becomes more and more red, and beads of sweat appear on her forehead. Donna turns away from the table and starts fanning herself with the paper version of the report while Brad finishes his comment. Donna leans down so she is below the table and starts searching through her work bag. When she lifts her head back up, she brings up a tissue. Brad pauses and looks over.



All participants see the same photo of a blonde middle-aged woman wearing a necklace and pulling away the neck of her black top. She appears shiny from sweat and is looking in the distance and fanning herself with paper. *Photo credit: The Guardian.*

[Control - No Disclosure Condition]: Donna says: "Please continue. I'll be fine in just a minute."

[Other-disclosure Condition]: *Another team member says, "Please continue. It's just a hot flash – she's menopausal. She'll be fine in just a minute."*

[Self-disclosure Condition]: Donna says: "Please continue. *Just having a hot flash – I'm menopausal. I'll be fine in just a minute.*"

The team finishes discussing the report. After the meeting ends, Donna grabs her bag and quickly leaves the room. Brad and the three other attendees walk out while you sit and collect your thoughts.

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Data Availability The data from these studies can be found in the OSF folder, the link is available in the Method Overview section.

Declarations

Competing interest The funding did not create any competing interests for the authors.

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