

The Effects of Leadership Levels and Gender on Leader Well-Being

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Previous research examining differences in levels of well-being between leaders and nonleaders has yielded mixed results. To explain the inconsistencies, we compare levels of well-being among nonleaders, mid-level leaders, and high-level leaders. Drawing from the job demands–resources model (Bakker & Demerouti, 2007, 2017) and the expanded version proposed by Crawford et al. (2010), we anticipate mid-level leaders will have lower levels of well-being compared to senior leaders and nonleaders, and females will be more vulnerable than males in mid-level leadership. In Study 1, we use multilevel models and propensity score matching ($N = 24,067$) and find mid-level leaders have worse general health conditions compared to nonleaders and high-level leaders, and that this effect is more pronounced among females. In Study 2, we collect experience sampling data from workers ($N = 86$; 1,634 observations) who completed a short survey four times daily for five consecutive working days. Mid-level leaders report more end-of-day negative emotions than high-level leaders and nonleaders, mediated by higher job demands and lower levels of job control to combat the negative effects of job demands; an effect that is particularly pronounced among female respondents. In Study 3, we use a two-wave time-lagged survey study ($N = 330$) and find middle managers have more challenge and hindrance job demands than nonleaders, and insufficient job control to offset the negative effects of job demands. Female middle managers report the most physical health symptoms and enjoy less eudaemonic well-being than their male counterparts. We conclude that leadership levels and gender have important and overlooked impacts on well-being.

Keywords: mid-level leadership, leadership occupancy, well-being, female leaders, leadership seniority

Understanding how leadership levels and gender impact leader well-being can assist individuals better anticipate the personal implications of leadership and make informed career choices. Furthermore, considering leaders' well-being is important in the workplace because it significantly influences their behaviors and effectiveness (Harms et al., 2017), which, in turn, affect subordinates' well-being, work attitudes, and performance (Arnold, 2017; Harms et al., 2017; Inceoglu et al., 2018). The scarcity of research on the well-being of leaders was first raised over a decade and a half ago (Ganster, 2005). Despite this long call for attention, research on "leaders' mental health has almost escaped attention" (Barling & Cloutier, 2017, p. 394), and even less attention has been paid to the effects of leadership role occupancy on leader well-being

(Li et al., 2018). The present article aims to contribute to this field by exploring how leadership levels relate to a job incumbent's well-being and whether these relationships differ between female and male leaders.

Existing studies in this field yield three inconsistent findings. One view suggests that being a leader hurts one's well-being because of stress (Burke, 1988; Harms et al., 2017). A second highlights the benefits of holding a leadership role (e.g., enhanced resources) and how they relieve stress (Sherman et al., 2012; Yukl, 2012). More recently, a third contends there is no link between leadership role occupancy and well-being because the challenges of being a leader can be offset by the benefits facing a leader (Li et al., 2018). These contradictions suggest a need for a more comprehensive investigation.

The literature on leaders' well-being generally considers leaders as one category and compares them to nonleaders. This approach overlooks the distinct job characteristics, such as the demands and resources of leadership positions across different levels and neglects the potential influences of a leader's individual characteristics at different levels of leadership. Consequently, it fails to capture important job aspects arising from the complex interplay between a job and the job incumbent's personal characteristics. In this article, drawing inspiration from the job demands–resources (JD-R) model (Bakker & Demerouti, 2007, 2017) and the expanded version by Crawford et al. (2010), we investigate the role of job levels and their interplay with gender in relation to leaders' well-being.

We believe one key factor contributing to the inconsistencies reported in the literature is the lack of consideration for leadership seniority levels. Strategic leaders are typically found at the top level, whereas mid-level leaders occupy a position in the middle of the organization with strategic leaders above and nonsupervisory staff

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below. Mid-level leaders typically perform managerial tasks with different work experiences compared to higher ranked leaders. Consequently, leaders at different levels may experience varying amounts of well-being as a result of the distinct job demands and resources associated with leadership positions at each level (Anicich & Hirsh, 2017). Thus, considering the levels of leadership may offer a viable approach for researchers to explore the well-being of leaders themselves (Inceoglu et al., 2021).

Another possible explanation for the inconsistencies observed in the previous research is the influence of gender. Female leaders may encounter additional job demands stemming from the incongruity between their leadership role and gender role (Eagly & Karau, 1991, 2002), which is separate from the core job demands. The literature has extensively documented the unique challenges faced by female leaders, including the overload caused by multiple or conflicting roles (Nelson & Burke, 2000), the glass ceiling that reflects artificial barriers to advancement to the upper level (Cotter et al., 2001), and the difficulties of working as a minority among other leaders (Eagly & Karau, 1991), among other unique demands (Nelson & Burke, 2000). Therefore, it is plausible that gender may contribute to differences in the well-being of individuals in the same level of leadership positions, as a result of the added demands arising from role incongruity and its detrimental effect on individuals' well-being (Davidson & Fielden, 1999).

To have a deeper understanding of the well-being implications of occupying a leadership position, we distinguish among the different leadership levels and explore how mid-level leaders' well-being may differ from that of high-level leaders and nonleaders; we also consider gender as a focal variable in explaining the well-being differences among different leader levels. By doing so, the present article contributes to the literature in the following ways.

First, the previous research in this field commonly compares leaders and nonleaders without considering the specific level of a leadership position (e.g., Bernerth & Hirschfeld, 2016; Li et al., 2018). However, the well-being of leaders can vary significantly depending on their position levels and the distinct job demands and resources associated with each level. For example, Warr and Inceoglu (2018) implied that senior managers might enjoy more job engagement than middle managers and direct supervisors. Additionally, although more power (usually a result of being in a higher level position) has been related to lower levels of stress (Sherman et al., 2012), the opposite has also been found. Interviews conducted by Zumaeta (2019) with a group of C-suite executives found that high-ranking leaders constantly experience feelings of loneliness, which later manifest into both maladaptive and adaptive consequences for leaders (Gabriel et al., 2021). Although most of these studies did not explicitly address well-being, their findings highlight the importance of considering specific leadership levels when studying leaders' well-being. By bringing mid-level leaders to the fore, this current research shows the complexity of the relationship between leadership role occupancy and well-being.

Second, our article adds more understanding about the understudied group of mid-level leaders. Although the first studies of middle managers can be dated back to the mid-1950s (Burns, 1957), the literature does not "... really grasp the middle-level experience of the middle managers ..." (Gjerde & Alvesson, 2020, p. 125). Mid-level leaders encounter more complexity in their daily work, such as unclear managerial identity (Thomas & Linstead, 2002), disclosure confusion (Down & Reveley, 2009), and perplexing

interactional expectations (Anicich & Hirsh, 2017). These findings depict a highly stressful work condition facing middle managers and suggest a potential negative impact on their well-being (Ivancevich et al., 1982). However, there is little direct evidence of the well-being implications associated with mid-level leadership. We fill this gap by gauging the well-being of individuals in the middle of the power structure and contrasting it with those higher and lower in the hierarchy.

Third, by studying gender as a focal variable, the article examines how the leadership effects on well-being differ between males and females. Previous works on leadership and well-being often consider gender as a control variable (e.g., Li et al., 2018; Sherman et al., 2012). However, we argue that gender may play a more important role in the relationship than simply serving as a control. This is because individuals of different genders may encounter varying job demands, even within the same position, which can result in distinct levels of well-being. We contribute to the literature by exploring how occupying leadership positions has different implications for the well-being of females and males. In addition, by exploring the gender difference in mid-level leaders' well-being, the article provides a plausible explanation for women's difficulties in reaching top management ranks (Cotter et al., 2001).

Leadership Levels, Job Demands, Job Resources, and Well-Being

It is difficult to draw differences between high-level and mid-level leaders "as the boundaries between levels of hierarchy are often blurred" (McConville, 2006, p. 639). Most research has used the term "middle manager" to refer to any category of leader (from first-line supervisors to very senior managers) who are neither top managers nor nonmanagers (e.g., Hales, 2005; T. Watson & Harris, 1999). This classification has led to the inclusion of an overly broad spectrum of leaders as middle managers. A few researchers on leaders' well-being (Sherman et al., 2012) have attempted to classify leadership levels more specifically. They operationalized leadership level using three indicators of power; however, this operationalization method may not reflect job level. As a result, the field lacks an appropriate operationalization of mid-level and high-level leaders and is prevented from achieving a deep understanding of the mid-level leader experience. As a recent study reveals, mid-level managers constantly deal with both superiors and subordinates (Gjerde & Alvesson, 2020). Thus, we define middle managers or mid-level leaders as those whose job includes similar amounts of responsibilities in supervising others and being supervised. High-level leaders are defined as those who mainly supervise others, and nonleaders are those who are mainly supervised by others.

People holding different levels of jobs may experience diverse job attributes. According to the JD-R model (Bakker & Demerouti, 2007, 2017), most work conditions can be broadly categorized into two distinct categories: job demands and job resources. We adopted the JD-R model because it is comprehensive and has been extensively tested and applied in organizations (Bakker & Demerouti, 2017). Job demands are the job aspects that require sustained physical and/or psychological effort and are associated with physiological and/or psychological costs. Job resources are the job aspects that help achieve work goals, reduce job demands and their associated costs, or promote personal growth and development

(Bakker & Demerouti, 2007, 2017). In addition, we used Crawford et al.'s (2010) framework because it builds upon the JD-R model and considers the appraisal of job demands by employees. The framework distinguishes between challenge demands which offer the potential for personal development and mastery (e.g., high workload), and hindrance demands which hinder personal growth and goal attainment (e.g., role conflict and role ambiguity; Crawford et al., 2010). Because challenge and hindrance demands are appraised differently, their implications on employee well-being may also differ (Mazzola & Disselhorst, 2019; Xie et al., 2019).

We anticipate that individuals in different leadership positions may experience varying levels of well-being due to differences in the degree of challenge, hindrance job demands, and available job resources. Compared to nonleaders, leaders face a bigger and broader set of duties in their daily work (Fletcher & French, 2021), including, for example, making decisions, forming goals and plans, dealing with crises, and meeting the needs of different stakeholders (Li et al., 2018; Yukl, 2012). These duties are challenging and often urgent, with the potential to bring personal development; therefore, fitting in the classification of challenge demands (Crawford et al., 2010). Although nonleaders may also hold many job responsibilities, their work mainly consists of technical demands, which are less complex in scope and less demanding (Fletcher & French, 2021). Thus, compared to nonleaders, individuals holding leadership positions will generally face greater challenge demands.

In addition to the challenge demands, mid-level leaders may face unique hindrance job demands that high-level leaders and nonleaders do not experience. This is because middle managers are the “meat in the middle of the sandwich,” in which ambiguity and conflict are inherent to their role. First, middle managers face more role ambiguity than high-level leaders and nonleaders. Unlike nonleaders who encounter upward interactions and high-level leaders who encounter downward ones (Cho & Keltner, 2020; Keltner et al., 2003), mid-level leaders constantly shift between downward and upward interactions and must switch between the roles of leader and subordinate frequently; this increases the environmental uncertainties and ambiguities facing mid-level leaders. In contrast, nonleaders and high-level leaders mainly deal with one-directional interactions, which reduce ambiguities in their daily interactions with others (Anicich & Hirsh, 2017). Further, to shield subordinates from unnecessary tasks from above and ensure good work is achieved below, mid-level leaders may need to craft or even reject the initiatives from top management (Gjerde & Alvesson, 2020). Thus, middle managers face more ambiguity in their work because they need to generate follower-friendly guidance based on the policies from above but also maintain relationships with their managers. Role ambiguity has been argued to be one of the main hindrance job demands (Gilboa et al., 2008; Mazzola & Disselhorst, 2019). Thus, we predict mid-level leaders face more hindrance job demands than high-level leaders and nonleaders because of the role ambiguity and uncertainty facing them.

Second, role conflict facing mid-level leaders is higher than that of high-level leaders or nonleaders. Role conflict refers to

a state of mind or experience or perception of the role incumbent arising out of the simultaneous occurrence of two or more role expectations such that compliance with one would make compliance with the other(s) more difficult or even impossible. (Pandey & Kumar, 1997, p. 191)

The more roles an employee holds, the more role conflict they may experience due to the contradictory expectations of key stakeholders about the employee's roles (Currie & Procter, 2005). In addition to the typical work responsibilities in a leadership role (Yukl, 2012), middle managers are also subordinates themselves, although their role of being followers is not commonly mentioned in the literature (Gjerde & Alvesson, 2020). As followers, middle managers are subject to senior managers' judgments about their performance, and their career development depends heavily on such judgment. Thus, middle managers are pressured to perform well as followers and impress their senior leaders (Sims, 2003). The needs of upper level leaders may contradict those of followers (Gjerde & Alvesson, 2020; Sims, 2003), leading to more role conflict among middle managers.

In addition to job demands, job resources can vary among job levels. Generally, higher level leaders tend to have greater access to job resources, such as colleague support and job perks. Additionally, a crucial type of resource that may differ according to leadership level is individuals' sense of control over their work environment. This is because leaders at higher levels of the organization enjoy more freedom in deciding when, where, and how to perform their work (Bakker & Demerouti, 2017; Fletcher & French, 2021; Tummers & Bakker, 2021; Yukl, 2012), which translates into an increased sense of control (Nelson & Burke, 2000). To some extent, high-level leaders “have the power to define the demands and resources of the job” (Fernández-Muñiz et al., 2017, p. 405). In addition to the objective condition of holding a leadership position, the sense of control may also come from the subjective experiences of leading others (Skinner, 1996). Fast et al. (2009) found that, when people were randomly assigned to leadership positions, they did not actually have more control over outcomes, but they did report more sense of control than people assigned to subordinate roles. We thus anticipate that high-level leaders will have greater access to resources than mid-level leaders, while mid-level leaders will have greater access to resources than nonleaders.

High-level leadership positions can be classified as *active jobs*. While such roles are associated with high job demands, high-level leaders have sufficient resources to cope with the demands (Bakker & Demerouti, 2017; Karasek, 1979). Also, job resources' energizing and motivating effects may benefit high-level leaders' well-being (Bakker & Demerouti, 2007, 2017). However, mid-level leaders face more hindrance job demands than nonleaders and high-level leaders. Although mid-level leaders have some access to job resources, these resources are inadequate in addressing hindrance job demands, which are often perceived as unsolvable despite considerable efforts to address them (Crawford et al., 2010). As such, mid-level leadership positions are considered *high-strain jobs*, bearing the highest risk of reduced well-being. Compared to leaders, nonleaders generally have roles with fewer demands and lower resources, and thus can be categorized as *passive jobs* (Häusser et al., 2010; Karasek, 1979). Well-being of people in such *passive jobs* is expected to be lower than that of job incumbents with *active jobs*, but higher than the well-being of people in *high-strain jobs*. We thus formulated our first hypothesis on the relationship between job levels and job incumbents' well-being, operationalized by health conditions and various psychological indicators. Notably, using the various indicators gave us a holistic view of job incumbents' well-being because it captures a wide range from ill health to wellness and a sense of meaningfulness.

Hypothesis 1: Mid-level leaders will experience a lower level of well-being (worse health conditions, more physical health symptoms, less positive emotions, more negative emotions, less life satisfaction, and less work meaningfulness) than nonleaders, and nonleaders will experience a lower level of well-being than high-level leaders.

A rich literature has shown that while both challenge and hindrance job demands may lead to fatigue and strain due to the effort and time associated with coping with the demands, challenge job demands may have some positive effects on one's well-being because they have the potential to trigger positive emotions and attitudes, whereas hindrance job demands would consistently have negative impacts on one's well-being because of the negativity and passivity caused by hindrance demands (see Crawford et al., 2010; Mazzola & Disselhorst, 2019; N. P. Podsakoff et al., 2007, for meta-analyses). In contrast, job resources generally benefit well-being (see Lesener et al., 2019; Luchman & González-Morales, 2013, for meta-analyses). In this article, we anticipate certain leadership levels have different combinations of challenge (i.e., workload) and hindrance demands (i.e., role ambiguity and role conflict) and resources (i.e., job control); in turn, these job characteristics additively influence the well-being of job incumbents in that level. We formulated the following predictions:

Hypothesis 2: Challenge job demands will mediate the relationship between incumbent positions and well-being, such that both high-level and mid-level leaders will report more challenge job demands, which will have positive relationships with positive emotions, life satisfaction, work meaningfulness, and physical health symptoms, and negative relationships with negative emotions and health conditions.

Hypothesis 3: Hindrance job demands will mediate the relationship between incumbent positions and well-being, such that mid-level leaders will report more hindrance job demands than high-level leaders and nonleaders. Hindrance job demands will in turn have a positive relationship with negative emotions and physical health symptoms, and negative relationships with health conditions, positive emotions, life satisfaction, and work meaningfulness.

Hypothesis 4: Job control will mediate the relationship between incumbent positions and well-being, such that high-level leaders will experience more job control than mid-level leaders, who will experience more job control than nonleaders. Job control will have positive relationships with health conditions, positive emotions, life satisfaction, and work meaningfulness, and negative relationships with negative emotions and physical health symptoms.

Who Suffers More? The Moderating Effects of Gender

In conjunction with job attributes, the characteristics of job incumbents at different levels may give rise to unique demands that are independent of the job itself. In this article, we investigate how gender can create additional job demands and stressors for leaders. Leadership roles are commonly associated with masculine and assertive characteristics (Lord et al., 1984), while females are often expected to exhibit communal attributes (Eagly & Karau, 2002).

Such lack of congruity between leadership and social roles for women (Eagly & Karau, 1991, 2002) may especially contribute to unique challenges and obstacles for female middle leaders (Fletcher & French, 2021; Nelson & Burke, 2000), such as role ambiguity and role conflict. Thus, we anticipate the well-being differences between middle managers, and top managers and nonleaders to be more pronounced among females than males.

First, female leaders face more role ambiguity than male leaders. According to role congruity theory (Eagly & Karau, 2002), social roles for women are perceived as incongruent with leadership roles. To be successful in the workplace, female leaders need to be careful about when and how to show their typically female characteristics (e.g., communal) versus leader characteristics (e.g., agentic; Nelson & Burke, 2000), but there are no clear guidelines on when to exhibit each type of traits. In addition, female middle managers face the "glass ceiling" in the workplace, which inhibits them from climbing up the organizational hierarchy. Unfortunately, such barriers are usually artificial, and no quick solutions exist for the barriers (Cotter et al., 2001). Thus, compared to male middle managers, female middle managers feel more uncertain about how to advance to the next level. Moreover, as the minority in most organizations, female leaders also need to face the uncertainties of being perceived as a "token" (Eagly & Karau, 1991). Being a minority in a group leads to extra role ambiguity because the "token" does not have clear role models to learn from, and they have to explore the proper way to behave at work. Because high-level female leaders have already successfully defeated the glass ceiling and have more discretion in their job, role ambiguity is less a problem for senior female leaders but especially problematic for female middle managers.

Mid-level female leaders also encounter more role conflict than their male counterparts (Nelson & Burke, 2000). A prototypical leader is commonly perceived as agentic, assertive, and confident, and these characteristics are typically associated with masculinity (Lord et al., 1984). Thus, male and leadership roles are congruent, allowing males to have less conflict between the two roles. However, female leaders are expected to be communal according to their gender role expectations (Eagly & Karau, 2002), yet are often expected to be less communal and more agentic as a leader (Lord et al., 1984). The inconsistent attributes between the two roles thus bring role conflict for female leaders (Eagly & Karau, 2002). Such role conflict is especially pronounced among mid-level female leaders because they have less control over their work than high-level female leaders.

Together, the literature suggests that female mid-level leaders tend to experience the most hindrance job demands. Consistent with research on the negative impacts of role incongruity on well-being (Davidson & Fielden, 1999), we anticipate that the added hindrance job demands stemming from role incongruity may exacerbate the negative impact on the well-being of female mid-level leaders compared to their male counterparts. We thus hypothesize:

Hypothesis 5: The well-being differences among different incumbent positions, as predicted in Hypothesis 1, will be more pronounced among females compared to males. Specifically, female middle managers will experience the lowest level of well-being.

Hypothesis 6: Gender will moderate the strength of the mediated relationships between incumbent positions with well-being via hindrance job demands, such that the mediated

relationship via hindrance job demands will be stronger among females than males through a stronger relationship between incumbent positions and hindrance job demands.

Overview of Studies

Using archival data (Study 1), an experience sampling study (Study 2), and a time-lagged survey study (Study 3), we investigated the relationships between incumbents' job levels and well-being. Additionally, we explored the mediating effects of job demands and resources, as well as the moderating effects of gender on these relationships. We adopted a holistic approach toward well-being by considering both general health condition and psychological well-being. In Study 1, we utilized data from a nationwide survey involving a large representative sample of individuals in China. We tested Hypotheses 1 and 5 using this data set, as it provided measures pertaining to gender, job levels, and general health conditions. The substantial size of the data set contributed to robust statistical power for our analyses. Furthermore, the inclusion of data from diverse industries bolstered the generalizability of our findings across various sectors. In Study 2, in order to examine the mediation mechanisms underlying the relationship between job levels and well-being (indicated by emotions), as well as the moderating effects of gender, we employed an experience sampling design to capture workers' daily experiences in their work environment. This method was chosen as it enables differentiation between within-person and between-person variances, allowing for a more precise examination of well-being differences attributable to job levels. In Study 2, all hypotheses except the third were tested. In Study 3, we conducted a time-lagged survey study involving employees from Prolific. This study provided an opportunity to examine all hypotheses and assess the generalizability of the identified relationships across diverse cultural contexts.

Study 1

To examine the relationship between job levels and well-being and the moderating effect of gender on this relationship, we used data from a large representative survey project: the Chinese General Social Survey (CGSS, 2010–2015).

Method

Sample

The CGSS is one of China's most representative national continuous survey projects (Bian & Li, 2012; Zhang et al., 2017; Zhuo & Cao, 2016). It employs a multistage stratified random sampling method to obtain a nationally representative sample of all Chinese adults. It contains questions that differentiate between working and nonworking adults. We use the most recent five waves (2010–2015) of CGSS because they contain items on incumbent job levels and their health conditions. The data are anonymous and publicly available for researchers to use.

Respondents were included if they provided valid responses for all the predictor and outcome variables. The resulting sample consisted of 23,776 respondents. Of these, 13,097 were male and 10,679 were female. They were, on average, 47.55 years old ($SD = 16.02$) at the time of survey administration. A total of 13,647 respondents did not hold a leadership position, 8,074 held a mid-level leadership position, and 2,055 held a high-level leadership position.

Measures

Job Level. Job level was captured by participants' answers to the question: "In your current job, are you leading others or led by others?" Respondents were provided with the following options: "led by others only" (nonleaders), "both leading and being led by others" (mid-level leaders), and "leading other people only" (high-level leaders).

General Health. Two items were used to index general health condition. Respondents answered the question "How do you describe your current general health condition?" on a 5-point Likert scale from 1 = *very unhealthy* to 5 = *very healthy*; they also provided answers to the question "[In the past month], how often have your health issues affected your work or daily life?" on a 5-point Likert scale from 1 = *always* to 5 = *never*. The responses were coded so that greater values represented better general health conditions. Cronbach's α of the two items was 0.75.

Controls. We considered several control variables at the individual level. Age, marital status, educational attainment, and Chinese Communist Party membership were considered because previous research has shown their relationships with attained leadership level and well-being (Roche et al., 2014; Vermeulen & Mustard, 2000; Zhang et al., 2020). Following the recommended best practice when dealing with controls (Bernierth & Aguinis, 2016), we included them as they were potentially related to both the predictor and the outcome (see Table 1).

Analytic Strategies

In China, the provinces differ greatly in their economic development, social welfare, the quality of public health care, and so on. The previous research has shown the significant influence of province on well-being (Knight et al., 2009; Monk-Turner & Turner, 2012). In this study, because individual data were nested within provinces, we controlled for the regional differences by using hierarchical linear modeling (hereafter HLM) for the analyses. The within-province and between-province variations in general health conditions were analyzed. The results suggest that a significant amount of variance came from the between-province level, intraclass correlation coefficient, $ICC1 = 0.02$, $ICC2 = .94$, $F(ICC1, ICC2) = 14.98$, $p < .001$; this further justified our usage of multilevel analysis.

Further, we conducted the following procedures to perform robustness checks. First, we detected outliers with Cook's distance and high leverages and tried modeling with and without them to see if they biased the findings. The results showed consistency. In addition, to reduce the influence of self-selection bias, we used the propensity score matching technique (Abadie & Imbens, 2016) to select comparable cases for modeling. This technique allows us to select subsamples comparable on different dimensions, thus, ruling out some alternative explanations related to sample characteristics. Regression results for the matched and unmatched samples were consistent. To have greater statistical power, we calculated results for the complete data set.

Results

Descriptive statistics are reported in Table 1. Table 2 shows the results of the HLM analyses. In Table 2, Model 1 supports our hypothesized "U-shape" curve. That is, the mid-level leaders

Table 1
Descriptive Statistics and Correlation Matrix of Variables in Study 1

Variable	<i>M</i>	<i>SD</i>	1	2	3	4	5	6	7
1. Gender	0.55	0.50	—						
2. Age	47.55	16.02	.05***	—					
3. Marital status	0.73	0.44	.04***	-.04***	—				
4. University education	0.32	0.47	-.00***	-.09***	-.31***	—			
5. CCP membership	0.17	0.37	.16***	.14***	.06***	.22***	—		
6. General health condition	3.96	0.89	.04***	-.32***	.01***	.12***	.01*	—	
7. Job level 1	0.66	0.47	-.04***	-.02***	-.07***	-.04***	-.13***	.01 [†]	—
8. Job level 2	0.43	0.49	.07***	-.01***	.10***	-.00***	.09***	.01***	-.83***

Note. Gender was coded 1 = male, 0 = female. Marital status was coded 1 = married, 0 = unmarried. Education was coded as college or above = 1 and below college = 0. CCP membership was for Chinese Communist Party membership was coded 1 = member, 0 = nonmember. Job level 1 was coded 0 = mid-level leaders, 1 = nonleaders and high-level leaders; Job level 2 was coded 0 = nonleaders, 1 = mid-leaders and high-level leaders.

[†] $p < .10$. * $p < .05$. *** $p < .001$.

had worse general health conditions than the nonleaders ($\beta = .03$, $p < .05$) and high-level leaders ($\beta = .09$, $p < .001$). Further, we compared the general health conditions between nonleaders and high-level leaders by creating another two dummies with nonleaders as the reference group (Models 3 and 4 in Table 2). Model 3 shows an equivalent “U-shaped” pattern as it is mathematically equivalent to Model 1; the results of this model show that nonleaders general health condition is more adverse than high-level leaders ($\beta = .07$, $p < .01$).

We found a main effect of gender on general health condition, Models 1 and 3 in Table 2 showed that males’ general health condition is overall consistently better than that of females ($\beta = .10$, $p < .001$). To test gender’s potential moderation effect, we created products of gender and job levels, and examined whether these products predicted well-being. Results of Models 2 and 4 (Table 2) showed that for females, both nonleaders ($\beta = .07$, $p < .001$) and high-level leaders ($\beta = .09$, $p < .01$) had better general health conditions than mid-level leaders, which is consistent with the

Table 2
HLM Estimates of Predictors for General Health Conditions in Study 1

Variable	Model 1	Model 2	Model 3	Model 4
Intercept	4.55 (.03)***	4.53 (.03)***	4.58 (.03)***	4.60 (.03)***
Control variables				
Age in years (18–99)	-.02 (.00)***	-.02 (.00)***	-.02 (.00)***	-.02 (.00)***
Married (unmarried = 0)	.07 (.01)***	.07 (.01)***	.07 (.01)***	.07 (.01)***
College education (below = 0)	.18 (.01)***	.18 (.01)***	.18 (.01)***	.18 (.01)***
Chinese communist party (none = 0)	.07 (.02)***	.07 (.02)***	.07 (.02)***	.07 (.02)***
Focal variables				
Male (female = 0)	.10 (.01)***	.14 (.02)***	.10 (.01)***	.07 (.01)***
Job level 1 (middle = 0)				
Job level 1 (nonleader = 1)	.03 (.01)*	.07 (.02)***		
Job level 1 (high = 1)	.09 (.02)***	.09 (.04)**		
Job level 2 (nonleader = 0)				
Job level 2 (middle = 1)			-.03 (.01)*	-.07 (.02)***
Job level 2 (high = 1)			.07 (.02)**	.02 (.03)
Interaction effects				
Male × Job Level 1 (nonleader = 1)		-.08 (.02)**		
Male × Job Level 1 (high = 1)		-.01 (.04)		
Male × Job Level 2 (mid = 1)				.08 (.02)**
Male × Job Level 2 (high = 1)				.07 (.04)
AIC	63302.34	63305.28	63302.34	63305.28
BIC	63383.22	63402.34	63383.22	63402.34
Log likelihood	-31641.17	-31640.64	-31641.17	-31640.64
No. of obs.	24,067	24,067	24,067	24,067
No. of groups: PROV	31	31	31	31
Var: PROV (intercept)	.02	.02	.02	.02
Var: residual	.72	.72	.72	.72

Note. Standard errors were reported in the parentheses. Marital status was coded 1 = married, 0 = unmarried. Education was coded as college or above = 1 and below college = 0. Job level 1 was coded 0 = mid-level leaders, 1 = nonleaders and high-level leaders; Job level 2 was coded 0 = nonleaders, 1 = mid-leaders and high-level leaders. HLM = hierarchical linear modeling; AIC = Akaike information criterion; BIC = Bayesian information criterion; obs. = observations; PROV = provinces; Var. = variance.

* $p < .05$. ** $p < .01$. *** $p < .001$.

U-shaped finding reported above; and that nonleaders had a similar level of general health condition to high-level leaders ($\beta = .02$, $p = .48$). Different from females, males do not show a U-shaped relationship between job levels and general health conditions (see Table 2, Models 2 and 4 and Figure 1). Instead, for males, mid-level leaders reported similar level of general health condition to that of nonleaders ($\beta = -.005$, $p = .90$). Both mid-level leaders ($\beta = -.08$, $p < .01$) and nonleaders ($\beta = -.09$, $p < .01$) reported lower levels of general health condition than high-level leaders. The findings confirmed that the negative effect of mid-level leadership on general health condition is more pronounced among females than males, thus supporting Hypothesis 5.

Study 1 Discussion

Study 1 used a large-scale representative data set and revealed a U-shape relationship between job levels and general health conditions. That is, mid-level leaders' well-being was lower than that of low-level employees and high-level leaders. Further, our findings suggested that the mid-level leadership effect was more pronounced among females than males, such that female mid-level leaders had the lowest general health conditions among all categories of job incumbents in the study. For females, being in a high-level leadership position did not harm or benefit their general health compared to a nonleader position. For males, holding a high-level leadership position was beneficial, as reflected by the highest level of general health condition among high-level leaders compared to mid-level leaders and nonleaders. Further, our findings also provided evidence that across different provinces, people's average general health levels differ. This finding empirically justifies our usage of HLM, and

highlights the importance of considering regional differences when looking at the well-being of job incumbents.

Although we used the propensity score matching technique (Abadie & Imbens, 2016) to rule out some alternative explanations, we need to note that the CGSS data cannot capture what people experience within the context of their daily lives or differentiate between within-person and between-person variances. In addition, the data set does not contain information on people's job demands and resources, which limits our ability to test the proposed mediation mechanisms. Moreover, the job level measurement in Study 1 fits our definition of different leadership levels but is potentially narrow. To overcome the limitations of Study 1, in Study 2, we ran an experience sampling study, adopted a more nuanced measure of job level, and captured the job demands and control facing incumbents.

Study 2

Danna and Griffin (1999) argue that well-being is a broad concept that considers the "whole person" and is not simply the absence of negativity. Arguably, Study 1 captured the existence or absence of negativity by only looking at people's general health conditions. To consider the "whole person," we examined people's psychological well-being in the following two studies. We took the conceptualization offered by Ryan and Deci (2001, p. 142) and considered psychological well-being as the "optimal psychological functioning and experience." Specifically, psychological well-being can be differentiated into hedonic well-being (i.e., the subjective experience of pleasure) and eudaemonic well-being (i.e., a sense of meaningfulness and self-realization; Ryan & Deci, 2001; Ryff & Keyes, 1995; Waterman, 1993). We adopt Diener's (1984) view on hedonic well-being and measure its affective component in Study 2.

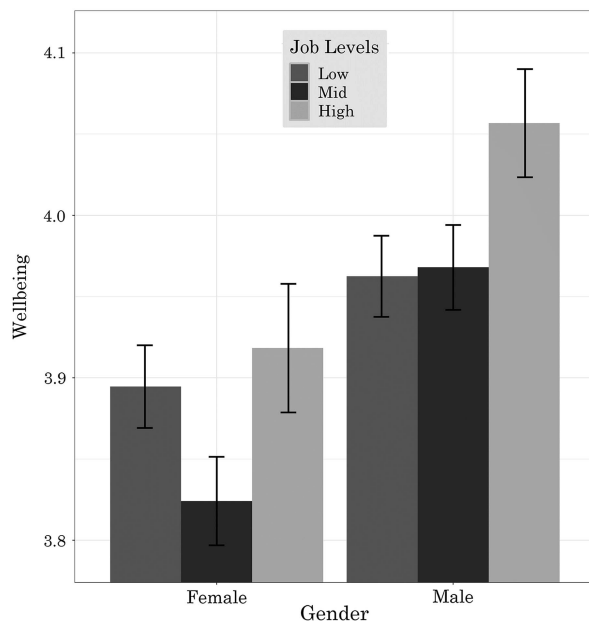
Given the day-to-day variability in individuals' emotional state and perception of job demands and resources (Demerouti & Bakker, 2011), we employed an experience sampling methodology (Bolger et al., 2003) to investigate the extent to which job incumbents at various levels experience distinct daily job demands, resources, and emotional well-being. Notably, Study 1 did not assess potential mediators which restricted our ability to elucidate the reasons behind the relationship between job levels and job incumbents' well-being. To address this limitation, Study 2 incorporates an examination of job demands and resources across different levels. Additionally, the implementation of the experience sampling methodology method in Study 2 provides a valuable means to disentangle the variances within individuals from the variances between individuals. In contrast, Study 1 solely captured the variances at the between-person level.

Method

Participants, Design, and Procedures

The study procedure was approved by the ethics review board at the University of New South Wales Sydney. The recruitment advertisement for this study was circulated using a participant recruitment website in China. People with full-time jobs at the time were eligible to participate. The procedure was as follows. First, potential participants responded to the recruitment advertisement by following a WeChat account created for this study. A detailed study explanation was sent to those who followed the WeChat account. Only those interested in the study were invited to complete the

Figure 1
Interaction Effect of Gender and Job Levels on Well-Being in Study 1



Note. 90% confidence intervals are reported in the figure.

remaining procedure. A total of 101 participants showed interest in the study. Second, participants received a link to the initial survey. Then, 1 week later, from that first day onward, for five consecutive working days, respondents completed a short survey at 7 a.m., 11 a.m., 3 p.m., and 6 p.m., respectively. The survey at 7 a.m. measured the sleep quality of last night as a potential control, the 11 a.m. and 3 p.m. surveys measured their experience of job demands and control, and the 6 p.m. questionnaire measured their emotions. For each short survey entry, the link was sent to participants 15 min before each data collection point. Each participant was provided a unique survey password, which ensured anonymity while allowing us to link the observations. For each completed survey, participants received an immediate online cash reward. They also received an extra cash bonus if they completed over 90% of the short surveys. Together, participants received 150 Chinese Yuan (about \$22 US Dollars) for completing more than 90% of the short surveys. In addition, to ensure a good response rate, after the first 2 days, participants who had a low response rate received a reminder and were encouraged to be more engaged in the study.

Data of respondents who completed more than 4 days of the surveys were included for analysis. Altogether, 97 participants met this criterion (96% response rate). A total of 44 participants were female, 42 were male, and the remaining 11 did not report their gender. Among the employees, 24 were nonleaders, 46 were mid-level leaders, 16 were high-level leaders, and the remaining 11 did not report their job level. The 86 respondents who reported their job level provided 1,634 observations (each participant provided an average of 19 responses to the 20 short surveys). All participants had a college degree or above and worked in various industries, such as education, real estate, information technology, and medical industries, etc.

Measures

Questionnaires on job demands and control and overall sleep quality were originally written in English. These questionnaires were translated into Chinese, checked, and then translated back into English to ensure conceptual consistency between the original and translated questionnaires. The job level measurement was developed in Chinese. The measurement of emotions has been translated and validated in Chinese; we used the validated version and did not go through the translation and back-translation procedure for this measurement.

Job Level. Job level was measured by the time people led and were led by others. Participants who reported that they were mainly led by others in their daily work were categorized as nonleaders, while those who reported that they share a similar amount of time on leading others and being led in their daily work were labeled as mid-level leaders, and those who reported that they mainly hold supervisory duties were categorized as high-level leaders.

Job Demands. We assessed participants' experienced job demands using four items from Bakker et al. (2005). Four items were assessed on a 5-point Likert scale (1 = *strongly disagree* to 5 = *strongly agree*). Demands could fluctuate within a day; thus, to help respondents recall demands easier, we measured job demands twice a day at 11 a.m. and 3 p.m., respectively. For the 11 a.m. survey, job demand items began with "From the start of today's work until the current survey time;" for the 3 p.m. survey, job demand items began with "From the last survey time until the current survey time." Daily

job demands were calculated by averaging the job demands reported at these two points. A sample item is "... my workloads were heavy." The α reliabilities of this scale measured at 11 a.m. and 3 p.m. are .71 and .75, respectively.

Job Control. Job control was measured using an item from Bakker et al. (2005). The item is "... I had freedom in deciding how to execute my work." Participants were instructed to rate the item on a scale of 1 (*strongly disagree*) to 5 (*strongly agree*).

Emotional Well-Being. In this study, we captured people's emotions at the end of the day by measuring the extent to which people felt positive and negative emotions using the 20-item the Positive and Negative Affect Schedule (D. Watson et al., 1988). All emotions were measured on a 5-point scale (1 = *very slightly or not at all* to 5 = *extremely*). Emotions were measured at 6 p.m. daily. The α reliabilities of the positive and negative emotions scale are .86 and .87, respectively.

Controls. Sleep quality is an important factor influencing people's well-being (Weinberg et al., 2016); better sleep quality is also related to lower perceived job demands (Van Laethem et al., 2019). Thus, the overall sleep quality of the previous night was considered. It was measured using the item that measures the overall sleep quality from the Pittsburgh Sleep Quality Index (Buysse et al., 1989). The question was: On average, how do you evaluate your sleep quality last night? Participants were instructed to answer the question on a 7-point Likert scale where 1 = *extremely bad* to 7 = *extremely good*. Table 3 shows that the overall sleep quality was related to job demand, job control, and end-of-day emotions. Thus, partialling the effect of sleep quality enables a more accurate estimation of the proposed indirect relationships.

Analytic Strategies

Data collected in this study are multilevel. At the within-person level, there are multiple observations over time; at the between-person level, there are responses from different individuals. Before testing our hypotheses, using the aov and ICC functions in R, we calculated the within- and between-person variation of job demands, job control, and emotions. For job demands, ICC1 = .79, ICC2 = .95, $F(95, 366) = 18.64$, $p < .001$. The between-person variance was 5.86 and the within-person variance was .31, suggesting that 5.02% of the variance in job demands stems from within-person fluctuations. For job control, ICC1 = .66, ICC2 = .90, $F(95, 365) = 10.46$, $p < .001$, the between-person variance was 4.28 and the within-person variance was .40, indicating that 8.55% of the variance in job control was from within-person fluctuations. For emotions, ICC1 = .74, ICC2 = .93, $F(96, 368) = 14.22$, $p < .001$, the between-person variance was .55 and within-person variance was .04, revealing that 6.78% of the variance in emotions was from within-person variations. The results suggest that a significant amount of variance came from the between-person level, which justifies our multilevel analysis.

Our adoption of the experience sampling method may incur the risk of common method bias because the data were collected from specific individuals repeatedly. However, the time-separated design partially mitigates the potential concern for this bias (P. M. Podsakoff et al., 2012). Moreover, we took the following strategies to ensure that common method variance was not a major cause for the identified relationships in the study. First, we ensured the complete anonymity of respondents by giving each one a

Table 3
Descriptive Statistics and Correlational Matrix of Variables in Study 2

Variable	<i>M</i>	<i>SD</i>	1	2	3	4	5
1. Daily job demands	3.07	1.14	—	-.22***	.12**	.46**	-.22**
2. Job control	5.21	1.31	-.20	—	.14**	-.32***	.13**
3. End-of-day positive emotions	3.30	0.56	.16	.21	—	-.14**	.25**
4. End-of-day negative emotions	1.59	0.45	.58***	-.34**	-.12	—	-.27**
5. Previous-night's sleep quality	4.94	1.02	-.39***	.14	.27*	-.38**	—
6. Job level 1	0.46	0.50	-.26*	-.02	-.24*	-.21 [†]	-.11
7. Job level 2	0.72	0.41	.14	.22	.40**	.09	.22 [†]
8. Gender	0.47	0.50	.03	-.08	-.02	.15	.08

Note. Means and standard deviations refer to person-level (between-person) data. Correlations below the diagonal are between-person aggregated scores ($n = 86$). Correlations above the diagonal are within-person scores ($n = 447$ to $n = 462$). Job level 1: mid-level managers = 0, nonleaders and high-level managers = 1. Job level 2: nonleaders = 0, mid-level leaders and high-level leaders = 1. Gender: female = 0, male = 1.

[†] $p < .10$. * $p < .05$. ** $p < .01$. *** $p < .001$.

nonidentifiable password as their participant ID (P. M. Podsakoff et al., 2012). Second, we controlled for the sleep quality of the previous night so that its general influence on participants' next-day behaviors and feelings was partialled (Weinberg et al., 2016). These practices helped to reduce the possibility that the identified mediation relationship was due to common method bias. As for the hypothesized moderating effect of gender, it is unlikely that this effect is due to common method variance.

Results

All analyses in Study 2 were conducted in R. We used the Lavaan package to conduct the hierarchical confirmatory factor analyses and the lmer package to conduct the HLM analyses. To support the discriminant validity of the constructs, we conducted hierarchical confirmatory factor analysis. Job demands, job control, positive emotions, negative emotions, and sleep quality of the previous night were included in a five-factor model. The model fit indexes are: $\chi^2(300) = 2916.47$, comparative fit index, CFI = .84, RMSEA = .07, the standardized root mean square residual, SRMR = .09. We also tested the following alternative models. First, we combined positive and negative emotions as one single factor and tested the four-factor model; it showed poor model fit: $\chi^2(325) = 2994.12$, CFI = .44, the root mean square error of approximation, RMSEA = .13, SRMR = .16. The results suggested that positive and negative emotions were two separate variables, rather than two ends of the same variable. Second, we loaded everything onto one factor; the one-factor model showed poor model fit: $\chi^2(325) = 2159.32$, CFI = .41, RMSEA = .14, SRMR = .16. This result further confirmed that common method variance was not a critical issue in the present study (P. M. Podsakoff et al., 2012). Although not all fit indices of the five-factor model reached a satisfactory level according to Hu and Bentler's (1999) criteria, these fit indices were better than those of the alternative models. Also, it is important to note that their criteria might over-reject true models in small samples and the authors recommended researchers be mindful of this limitation (Hu & Bentler, 1999). Thus, in the present study, we believe the data showed sufficient discriminant validity among the measured constructs.

Results of the correlation analyses are presented at both the between-person and within-person levels (Table 3). Results of the

HLM analyses are consistent with and without the control and we report the results with the control variable included for a more robust test of the hypotheses. To test whether mid-level leaders had the lowest emotional well-being, we regressed the dummy variables—with mid-level leaders as the reference group—on end-of-day positive and negative emotions, respectively. Results revealed that mid-level leaders had a higher level of end-of-day negative emotions than nonleaders ($B = .18$, $SE = .10$, $p = .04$) and high-level leaders ($B = .22$, $SE = .12$, $p = .03$). The end-of-day positive emotions were not different for mid-level leaders and high-level leaders ($B = .10$, $SE = .16$, $p = .53$), and the positive emotions were higher among mid-level leaders than nonleaders ($B = .50$, $SE = .14$, $p = .001$). To further compare high-level leaders' well-being with nonleaders, we created another two dummy variables with high-level leaders as the reference group. Results showed a similar level of end-of-day negative emotions between high-level leaders and nonleaders ($B = .04$, $SE = .13$, $p = .76$), and a significant higher level of positive emotions among high-level leaders than nonleaders ($B = .58$, $SE = .18$, $p = .002$). To summarize, both high-level and mid-level leaders had more positive emotions than nonleaders, and mid-level leaders reported more negative emotions than nonleaders and high-level leaders. These findings partially supported Hypothesis 1.

We further examined whether challenge demands and job control mediated the relationships between job levels and end-of-day emotional well-being. We first tested the full-mediation model where no direct links from job levels on emotional well-being were included; the full-mediation model did not fit well with the data ($\chi^2 = 18.35$, $df = 5$, $p = .00$, CFI = .85, RMSEA = .08, SRMR = .10; Hu & Bentler, 1999). We then tested the partial mediation model with direct links included. The partial mediation model suggested that direct relationships existed between job levels and negative emotions. To keep the model parsimonious, we removed the direct links between job levels and negative emotions and ran the final model, which includes the full mediation for job levels and negative emotions relationships, and the partial mediation for job levels and positive emotions relationships. The final model showed good model fit ($\chi^2 = 8.74$, $df = 5$, $p = .12$, CFI = .96, RMSEA = .04, SRMR = .00). Results suggested that mid-level leaders had more challenge job demands ($B = .47$, $SE = .12$, $p = .00$) than nonleaders, but no more job control ($B = -.16$, $SE = .23$, $p = .49$). Compared to high-level leaders, middle managers reported the same challenge job

demands ($B = .05$, $SE = .14$, $p = .72$), but a trend of less job control ($B = -.37$, $SE = .26$, $p = .08$). Compared to high-level leaders, nonleaders reported less challenge job demands ($B = -.42$, $SE = .15$, $p = .01$) and a trend of less job control ($B = -.52$, $SE = .29$, $p = .07$). In turn, job demands was positively related to negative emotions ($B = .18$, $SE = .04$, $p = .00$), job control was negatively related to negative emotions ($B = -.14$, $SE = .05$, $p = .01$). Job demands was not related to positive emotions ($B = .07$, $SE = .06$, $p = .22$), job control was positively related to positive emotions ($B = .19$, $SE = .07$, $p = .01$). Together, these findings provided partial support for Hypotheses 2 and 4.

Further, we explored the moderation effects of gender. HLM results suggested that the negative emotion differences between different job levels were only significant among females, such that female middle managers reported more negative emotions than high-level leaders ($B = .45$, $SE = .14$, $p = .00$) and nonleaders ($B = .42$, $SE = .15$, $p = .01$). For males, middle managers reported the same level of negative emotions compared to high-level leaders ($B = .08$, $SE = .14$, $p = .53$) and nonleaders ($B = .01$, $SE = .17$, $p = .94$). Gender did not moderate the effects of job levels on positive emotions. These findings partially supported Hypothesis 5. To test the moderation effect of gender on the mediated relationship between job levels and end-of-day emotions, we multiplied the variable gender (coded as 0 = females, 1 = males) by the dummy variables and included them in the multilevel path analysis. The overall model fit was good: $\chi^2 = 8.49$, $df = 6$, $p = .20$, CFI = .97, RMSEA = .03, SRMR = .00. Results of the moderated mediation model showed no gender differences for job control. Gender differences existed for job demand; specifically, female mid-level leaders reported more job demands than nonleaders ($B = .97$, $SE = .37$, $p = .01$) and high-level leaders ($B = 1.18$, $SE = .41$, $p = .004$). For male job holders, mid-level leaders reported no difference in their job demands compared to nonleaders ($B = .85$, $SE = .78$, $p = .28$) or high-level leaders ($B = 1.47$, $SE = 1.33$, $p = .19$). Overall, these findings suggest that the female middle managers suffer the most negative emotions due to their highest level of job demands but no more job control.

Study 2 Discussion

In Study 2, we collected experience sampling data from a group of job incumbents ranging from nonleaders to high-level leaders. The findings were consistent with our speculation that high-level leadership positions can be categorized, as *active jobs* (i.e., high demands and high control), nonleadership positions can be classified as *passive jobs* (i.e., low demands and low control), and mid-leadership positions are *high-strain jobs* (i.e., high demands and low control). Further, the findings revealed that high-level leaders enjoyed the highest level of well-being (highest positive and lowest negative emotions); although middle managers reported more positive emotions than nonleaders, they also suffered the most negative emotions, especially for female middle managers.

A limitation of Study 2 is that we solely measured challenge job demands, neglecting hindrance demands. Furthermore, the well-being measures adopted in Studies 1 and 2 were somewhat limited. Additionally, Study 2 measured job demands and control twice a day, which could potentially introduce contamination as the earlier measures might still be salient to participants during the afternoon

job assessment. To address these limitations, we conducted a third study.

Study 3

Study 2 showed that most variability in job demands and resources resulted from between-person differences instead of within-person daily fluctuations. The findings led us to anticipate that the mediated effects may take longer to manifest and may not be observed on a daily basis within individuals. Thus, in Study 3, we did not run another experience sampling methodology study to capture both within- and between-person variance of job demands and resources, but instead ran a two-wave time-lagged survey study using Prolific to capture between-person variance. Study 3 included both emotional and cognitive components of hedonic well-being (Diener, 1984); work meaningfulness as an indicator of eudaemonic well-being, which pertains to deriving meaning and achieving self-actualization from work (Ryan & Deci, 2001); physical health symptoms, which loads in the opposite direction to physical health condition, and both challenge and hindrance job demands which allow a more nuanced examination of the mediating effects of job demands that may differentially affect people's well-being (Mazzola & Disselhorst, 2019). We expect hindrance job demands to have consistent negative impacts on people's physical and psychological conditions, and challenge job demands to produce positive influences on psychological well-being as a result of the developmental nature of such job demands, and negative influences on health condition (i.e., leading to more physical health symptoms) because challenge job demands are demanding and cost resources to deal with them (Crawford et al., 2010; Mazzola & Disselhorst, 2019; N. P. Podsakoff et al., 2007). As a result, people in different levels of job may experience different levels of well-being due to differential challenge, hindrance job demands and job resources.

Method

Participants, Design, and Procedures

The study procedure was approved by the ethics review board at the University of New South Wales Sydney. As a procedural remedy for common method bias (P. M. Podsakoff et al., 2003), we administered the surveys with a time lag of 1 month between the two waves of surveys because it should be long enough to reduce common method bias but short enough to ensure that most respondents experienced consistent job demands and control. We used Prolific's prescreening function to target potential participants with full-time jobs. The wave 1 survey was distributed evenly to male and female participants, which was enabled by the "balanced sample" function of Prolific. Respondents received a small amount of money for participation. We collected 400 responses in wave 1 and sent survey invitations to those who submitted their responses to the wave 1 survey. A total of 330 people responded to the wave 2 survey, resulting in a response rate of 82.5% percent. The average respondent was 39.07 years old; 152 self-identified as females and 171 as males, and the rest did not answer the gender question; the sample reported receiving an average 15.87 years of formal education.

Measures

We measured demographic information, job information, challenge and hindrance job demands, job control, and Prolific IDs in wave 1. In wave 2, physical health symptoms, positive and negative emotions, life satisfaction, work meaningfulness, and Prolific IDs were measured. Participants' responses from the two waves were linked according to their Prolific IDs.

Job Level. Study 3 used the same job level measurement as Study 2.

Workload. Workload was used as an indicator of challenge job demands. Karasek's (1979) seven-item scale of workload was used. Participants were instructed to rate their workload on a scale of 1 (*strongly disagree*) to 5 (*strongly agree*). A sample item is "my job requires me to work fast." Cronbach's α was .87.

Role Ambiguity. Role ambiguity was measured using Rizzo et al.'s (1970) six items. Participants reported role ambiguity in their full-time job using a 5-point Likert scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*). A sample item is "I know exactly what is expected of me." All items were reverse-coded so that a higher value reports more role ambiguity. Cronbach's α was .80.

Role Conflict. Role conflict was assessed using Rizzo et al.'s (1970) eight items. Participants reported the extent to which they agreed with the statements related to role conflict on a scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*). A sample item is "I receive incompatible requests from two or more people." The Cronbach's α of the scale was .87.

Job Control. Job control was measured using the nine items from Morgeson and Humphrey's (2006) research. The nine items measured the extent to which people have autonomy in deciding their work schedule and method and making decisions at work. A 5-point Likert scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*) was used. A sample item is "The job provides me with significant autonomy in making decisions." Cronbach's α was .92.

Physical Health Symptoms. On a scale of 1 (*rarely*) to 5 (*very often*), participants were asked to indicate how often they experienced headaches, stomach-ache/pain, chest pain, runny/congested nose, coughing/sore throat, faintness/dizziness, out-of-breath, acne/pimples, stiff/sore muscles during the past month. The items were originally from Emmons and King's (1988) work. Cronbach's α of the nine-item scale was .77.

Emotions. The scale used to measure emotions in Study 2 was used in Study 3. In Study 3, Cronbach's α of the positive emotions subscale was .95, and negative emotions was .91.

Life Satisfaction. Life satisfaction was captured using Diener et al.'s (1985) five-item scale. On a scale of 1 (*strongly disagree*) to 7 (*strongly agree*), participants reported the extent to which they agreed on the five items. A sample item is "I am satisfied with my life." Cronbach's α was .93.

Work Meaningfulness. Work meaningfulness was measured using three items from Spreitzer (1995). On a scale of 1 (*strongly disagree*) to 7 (*strongly agree*), participants were instructed to report the extent to which they agreed with the three items. A sample item is "The full-time job I do is meaningful to me." Cronbach's α was .97.

Results

We first tested the discriminant validity of the constructs using Lavaan in R. Workload, role ambiguity, role conflict, job control,

physical health symptoms, positive emotions, negative emotions, life satisfaction, and work meaningfulness were included in a nine-factor model. The model fit indexes were satisfactory (Hu & Bentler, 1999): $\chi^2(2108) = 4699.88$, CFI = .93, RMSEA = .06, SRMR = .08. We also tested the following alternative models. First, we combined role ambiguity and role conflict on one factor and tested the eight-factor model. The model did not fit well with the data: $\chi^2(2116) = 5097.30$, CFI = .80, RMSEA = .07, SRMR = .10. Second, we combined negative and positive emotions to form an eight-factor model. The model did not fit well with the data: $\chi^2(2116) = 6104.17$, CFI = .73, RMSEA = .08, SRMR = .10. Third, satisfaction and work meaningfulness were combined to form another eight-factor model. The model showed poor fit: $\chi^2(2116) = 5885.95$, CFI = .75, RMSEA = .07, SRMR = .09. Forth, we combined all measures included in Wave 1 to form one factor and all variables measured in Wave 2 to form another factor; this two-factor model had a poor fit: $\chi^2(2143) = 11039.50$, CFI = .41, RMSEA = .11, SRMR = .14. Finally, we included all measures to form a one-factor model, which also showed poor model fit: $\chi^2(2143) = 11039.50$, CFI = .41, RMSEA = .11, SRMR = .14. Together, these results showed the nine-factor model fitted the data best among all tested models and confirmed discriminant validity of the measurements.

Correlation analysis results are presented in Table 4. Using linear regression in R, we first analyzed how job levels were related to the well-being indicators. Results suggested that except for positive emotions which showed no significant differences, $F(2, 324) = .73$, $p = .48$, and life satisfaction, $F(2, 324) = 2.83$, $p = .06$, which showed a trend but failed to reach commonly accepted significance levels, all the other well-being indicators showed significant differences as a result of job levels: physical health symptoms, $F(2, 324) = 4.06$, $p = .02$, negative emotions, $F(2, 324) = 6.05$, $p = .00$, and work meaningfulness, $F(2, 324) = 5.33$, $p = .01$. Middle managers reported more physical health symptoms than high-level leaders ($B = .26$, $SE = .09$, $p = .006$), and the comparison of physical health symptoms with nonleaders did not reach commonly accepted significance level ($B = .12$, $SE = .07$, $p = .09$). Middle-managers also showed less negative emotions ($B = .22$, $SE = .08$, $p = .008$), more life satisfaction ($B = .39$, $SE = .17$, $p = .02$), and more work meaningfulness ($B = .46$, $SE = .21$, $p = .03$) than nonleaders, and the same level of negative emotions ($B = -.11$, $SE = .11$, $p = .33$), life satisfaction ($B = .30$, $SE = .22$, $p = .18$), and work meaningfulness ($B = .34$, $SE = .27$, $p = .21$) than high-level leaders. Overall, the sample showed that although middle managers suffered from more physical health symptoms than high-level leaders and nonleaders, their psychological well-being did not differ from high-level leaders, and they benefited from better psychological well-being than nonleaders.

To check the moderation effects of gender, we conducted full interaction regression analyses. When physical health symptoms were included as the outcome, the gender by leadership level interaction effect was significant, such that the high-level versus mid-level leader comparison differed between males and females ($B = .36$, $SE = .18$, $p = .04$). For males, mid-level leaders did not differ from high-level leaders ($B = -.06$, $SE = .12$, $p = .63$) or nonleaders ($B = -.03$, $SE = .10$, $p = .76$) in the reported physical health symptoms. For females, middle managers reported significantly more physical health symptoms than high-level leaders ($B = .42$, $SE = .14$, $p = .001$), but the comparison with nonleaders failed

Table 4
Descriptive Statistics and Correlational Matrix of Variables in Study 3

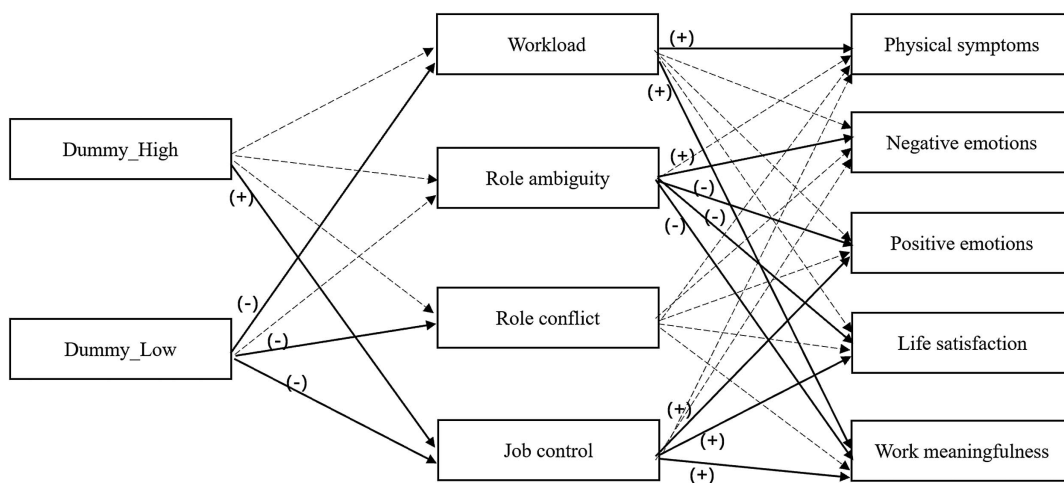
Variable	<i>M</i>	<i>SD</i>	1	2	3	4	5	6	7	8	9	10	11
1. Gender	0.47	0.50	—										
2. Job level 1	0.61	0.49	-.07	—									
3. Job level 2	0.56	0.50	.03	-.71	—								
4. Workload	3.50	0.76	.00	-.18	.21	—							
5. Role ambiguity	2.20	0.64	.00	.03	-.07	.17	—						
6. Role conflict	2.81	0.82	-.03	-.13	.15	.52	.51	—					
7. Work control	3.75	0.71	.05	-.09	.24	.02	-.35	-.11	—				
8. Physical symptoms	1.93	0.58	.27	-.13	.04	.19	.08	.15	-.02	—			
9. Positive emotions	3.15	0.87	-.11	-.06	.07	-.06	-.38	-.15	.30	-.15	—		
10. Negative emotions	1.90	0.70	.13	.09	-.18	.13	.20	.19	-.11	.28	-.25	—	
11. Life satisfaction	4.26	1.40	.02	-.13	.11	-.08	-.31	-.14	.23	-.12	.55	-.39	—
12. Work meaningfulness	4.71	1.71	-.03	-.07	.16	.06	-.38	-.16	.37	-.09	.64	-.24	.49

Note. $N = 323$. Job level 1: mid-level managers = 0, nonleaders and high-level managers = 1. Job level 2: nonleaders = 0, mid-level leaders and high-level leaders = 1. Gender: female = 1, male = 0. $|r| > .11$, $p < .05$. $|r| > .14$, $p < .01$. $|r| > .18$, $p < .001$.

to reach the commonly accepted significance levels ($B = .15$, $SE = .10$, $p = .07$). For work meaningfulness, gender moderated the comparison between high-level and mid-level leaders ($B = -.11$, $SE = .55$, $p = .04$), such that male middle managers enjoyed the same level of work meaningfulness compared to high-level leaders ($B = .14$, $SE = .37$, $p = .69$), but female middle managers reported less work meaningfulness than high-level female leaders ($B = -.97$, $SE = .41$, $p = .02$). For life satisfaction, positive emotions, and negative emotions, gender did not moderate the effects of leadership level. Together, these findings partially support Hypothesis 5 and suggest that female middle managers suffer from the most physical symptoms, although they enjoyed more hedonic well-being than nonleaders, they did not benefit from more eudaemonic well-being than nonleaders.

We then tested the full-mediation model using the Lavaan package in R. We created two dummy variables to include in the path analysis so that Dummy_Non compares nonleaders with middle managers, and Dummy_High compares high-level leaders with middle managers. The full-mediation model fitted well with the data: $\chi^2(10) = 33.20$, CFI = .97, RMSEA = .08, SRMR = .04. Figure 2 shows the full model. To keep the model visualization clean, we marked the significant paths in solid lines and the insignificant paths in dashed lines. Results suggested that middle managers and high-level leaders only differ in the amount of job control they have, where high-level leaders reported more job control than middle managers ($B = .22$, $SE = .11$, $p = .04$). Compared to nonleaders, middle managers reported more job control ($B = .27$, $SE = .08$, $p = .001$), more workload ($B = .35$,

Figure 2
Path Analysis Results in Study 3



Note. For parsimonious consideration, path coefficients not presented in the figure. Solid lines represent significant paths; dash lines represent insignificant paths. (+) means positive relationship, (-) means negative relationship. Dummy_High represents the high-level leaders data compared to mid-levels, Dummy_Low represents the nonleaders data compared to mid-level leaders.

$SE = .09, p = .00$), and more role conflict ($B = .27, SE = .10, p = .005$). Further, the results suggested that more physical health symptoms were only related to more workload ($B = .12, SE = .05, p = .02$); more negative emotions were only related to more role ambiguity ($B = .14, SE = .07, p = .06$), although the difference did not reach the commonly accepted significance level; more positive emotions were related to less role ambiguity ($B = -.47, SE = .09, p = .00$) and more job control ($B = .23, SE = .07, p = .00$); more life satisfaction was related to less role ambiguity ($B = -.60, SE = .14, p = .00$) and more job control ($B = .27, SE = .11, p = .01$), and work meaningfulness was related to more workload ($B = .29, SE = .13, p = .03$), less role ambiguity ($B = -.77, SE = .16, p = .00$), and more job control ($B = .63, SE = .13, p = .00$). Together, these findings revealed that among the whole sample, with both females and males included, middle managers' high physical health symptoms were a result of their high workload. Both mid-level and high-level leaders' high psychological well-being (i.e., more life satisfaction and work meaningfulness) were related to more job control. Interestingly, leaders' high work meaningfulness was also related to more workload; this finding was consistent with the notion that workload is a type of challenge job demand that may have positive impacts on well-being.

Next, to check whether the identified patterns were different between males and females, we further tested the model with gender as a moderator. The moderated mediation model showed good model fit: $\chi^2(25) = 76.23, CFI = .94, RMSEA = .08, SRMR = .05$. The path coefficients from the mediators to the outcome variables were not changed compared to the previous model and were not repeated here. We found that among females, compared to high-level leaders, middle managers reported the same workload ($B = .09, SE = .18, p = .61$), more role ambiguity ($B = .46, SE = .15, p = .003$), a trend of more role conflict ($B = .31, SE = .20, p = .06$), and less job control ($B = -.44, SE = .17, p = .01$); compared to nonleaders, female middle managers reported more workload ($B = .49, SE = .13, p = .00$), the same role ambiguity ($B = -.05, SE = .11, p = .68$), more role conflict ($B = .34, SE = .14, p = .01$), and the same job control ($B = .16, SE = .12, p = .18$). Male middle managers showed no more workload ($B = .22, SE = .13, p = .09$) and role conflict ($B = .23, SE = .14, p = .10$), but more job control than nonleaders ($B = .37, SE = .12, p = .002$); male middle managers had the same level of workload ($B = .06, SE = .16, p = .72$), role conflict ($B = -.09, SE = .17, p = .60$), job control ($B = -.05, SE = .15, p = .72$), and role ambiguity ($B = -.23, SE = .13, p = .09$) than male high-level leaders.

Study 3 Discussion

Study 3 showed a more comprehensive picture of the well-being implications of leadership levels and gender. Study 3 replicated Study 1's findings and suggested that female middle managers showed the most physical health symptoms, which were significantly influenced by the workload experienced by job incumbents. Contrary to our predictions, middle managers and high-level leaders both reported fewer negative emotions and more life satisfaction than nonleaders. Further, Study 3 identified gender-differentiated effects for work meaningfulness, where males enjoy more work meaningfulness starting from the middle manager level, and females only begin to have more work meaningfulness after they are in a high-level position. This gender difference was mainly due to

female middle managers' lack of job control compared to high-level female leaders. Specifically, we found that female middle managers face more hindrance job demands than high-level leaders and nonleaders, as well as more challenge job demands than nonleaders, but unlike high-level leaders, female middle managers do not have the matching job control to combat these challenges. For male middle managers, their job characteristics were similar to high-level ones, where they face more job demands than nonleaders but also hold more job control.

General Discussion

Using a large-scale data set in Study 1, an experience sampling method in Study 2, and a time-lagged survey method in Study 3, tapping on a wide range of well-being facets from ill-health to wellness and a sense of meaningfulness, the results suggest the following. First, mid-level leaders reported worse general health conditions than nonleaders and high-level leaders, the relationship was mainly due to high workload, and this effect was more pronounced among females than males. In addition, although Study 2 found that middle managers' daily high workload led to more end-of-day negative emotions, Study 3 showed that the negative emotions within a period (1 month) were not impacted by workload. Moreover, among males, regardless of their leadership level, leaders enjoyed more psychological well-being (both hedonic and eudaemonic) than nonleaders. For females, however, although all leaders reported more life satisfaction than nonleaders, only high-level leaders experienced more work meaningfulness than female nonleaders. This was mainly due to female middle managers' insufficient job control to combat the high job demands. Together, these findings suggest that occupying a leadership position does not have a definitive influence on one's well-being; it is the leadership level and gender that matters.

Our findings join the important and long-neglected research on leadership occupancy and leader well-being (Barling & Cloutier, 2017; Kaluza et al., 2020). Leaders are prototypically believed to be intelligent, positive, motivated, and dynamic (Epitropaki & Martin, 2005); all these characteristics depict someone well and healthy. However, according to our research findings, being a leader is not always a blessing. In fact, being a mid-level leader, especially a female middle manager, is associated with poorer health conditions and a higher prevalence of physical health symptoms. By differentiating between mid-level and high-level leaders, the current research deepens our understanding of leader well-being and provides a plausible explanation of the inconsistent findings in this area. Moreover, by taking a holistic approach to well-being, our results picture people in high-level leadership positions as physically healthy, feeling happy about, and finding positive meaning in their job. However, compared to nonleaders, the hedonic well-being advantages of middle managers come at the cost of adverse health conditions.

In addition, the current findings add to the research on middle managers. Although the first studies of this group date back to the mid-1950s (Burns, 1957), we still have limited knowledge about middle managers, especially their well-being. Our findings of poor health conditions of mid-level leaders are consistent with previous research that has identified the negative impact of being a middle manager (Buick & Thomas, 2001; Marshall & Cooper, 1979). Specifically, their poor health condition was related to the unique

hindrance job demands facing them (Anicich & Hirsh, 2017; Down & Reveley, 2009; Gjerde & Alvesson, 2020; Thomas & Linstead, 2002) and a lack of sufficient job control. At the high level, although more job discretion also potentially means a more demanding job, the positive influence of job control can offset the strain caused by the unique job demands at the high level and allow high-level leaders to appreciate the meaningfulness of their job (Hambrick et al., 2005).

Findings underscore the importance of considering job elements that arise from the interplay between a job and the characteristics of people in the job. For example, we found females face more job demands and less control than males. It is possible that both genders have the same level of job demands and control defined by the job, but females experience more job demands as a result of the role incongruity, and males may experience some benefits as a result of the congruity between the gender role and leadership role. Together, our research suggests future researchers might want to think beyond what a job may offer to the incumbent and further consider the interplay between the job and the incumbent characteristics.

Evidence from our study further supports the proposal that, within the JD-R model (Bakker & Demerouti, 2007, 2017), various types of job demands should be approached differently (Crawford et al., 2010; Mazzola & Disselhorst, 2019; N. P. Podsakoff et al., 2007) due to their potential to elicit diverse responses from employees. Specifically, our findings demonstrate that distinct combinations of job demands and control have unique implications for well-being. Interestingly, as a challenge job demand, workload only showed a positive impact on the eudaemonic well-being indicator and had no impact on any of the three hedonic well-being indicators. This finding suggests that challenge job demands may especially positively impact people's eudaemonic well-being because they provide people with more opportunities to reflect upon their value-satisfaction and self-actualization via work. However, people may not hedonically feel happy about challenge demands because dealing with them is fatiguing. These findings suggest future researchers should continue to differentiate between different types of job demands and well-being.

In addition, our findings suggest that future researchers in the field of leadership should consider job demands in relation to different job levels. It is possible that when people hold a high leadership position, the control accompanying the position gives them more resources to use to adapt to the growing demands facing them, which makes them perceive the demands as less demanding, although the actual job demands may not be lower. High-level leaders may have more work than middle managers and perceive fewer job demands because they have already adapted to the busy role (Fletcher & French, 2021). The control enjoyed by high-level leaders may also help them transfer the job demands into personally meaningful tasks, which are perceived as their intrinsic rewards (Brett & Stroh, 2003) instead of job demands. Together, these findings suggest potential avenues for further developing the JD-R model (Bakker & Demerouti, 2007, 2017) by considering the unique characteristics of individuals, such as their job levels, who encounter specific types of job demands.

Moreover, we identified the moderating role of gender on the relationship between job levels and well-being. Most research on the well-being implications of being a leader has only considered gender as a control variable (e.g., Li et al., 2018; Sherman et al.,

2012). The current research, instead, focused on gender as a focal variable. We found different effects of leadership role occupancy on well-being between females and males. Current research findings add to the important research realm that discusses gender issues in leadership (Koenig et al., 2011; Nye & Forsyth, 1991; Scott & Brown, 2006). Further, our findings add to the literature by showing that in addition to facing unique challenges and obstacles in the workplace, female leaders are also more likely to suffer from the negative influences of being a middle manager on their well-being. The current research findings also provide a potential theoretical lens explaining the glass ceiling effect facing females in the workplace (Cotter et al., 2001; Powell & Butterfield, 2015). The adverse health conditions and less inner reward facing females would potentially limit the physical and psychological resources needed to climb up the corporate ladder, thus putting them off from senior leadership positions more than their male counterparts. Future research could tackle the reasons for female middle managers' lower sense of control, which will have important implications for job design and workplace gender equality.¹ Female middle managers' lack of control may come from their "token" status in organizations (Eagly & Karau, 1991), making females less likely to be the center of workplace network systems and reducing their perceived sense of control. Another possibility is that the role ambiguity facing female middle managers may reduce their sense of control because they are unsure about the extent to which they have control in the workplace. A reduced sense of control may also result from female middle managers' adverse health conditions (Ross & Mirowsky, 2002). Together, our findings highlight the importance of considering gender when studying leadership levels and well-being.

Practical Implications

We urge practitioners to remember that leaders are not always immune from poor physical and psychological health. We found that mid-level leaders, especially female leaders, suffer from adverse health conditions more than nonleaders and high-level ones. These results suggest additional care is required for this special group because they account for a significant number of the members of an organization and are a key resource connecting the organization's upper levels and lower levels. In addition, the current research findings suggest that because high hindrance demands account for a significant amount of the negative effect on well-being, organizations need to reduce hindrance demands so that employees' well-being can be maintained.

Moreover, although female middle managers suffer from many physical symptoms and may not feel well psychologically, our findings that their well-being will improve once in a higher position may give them some hope to hang in there. The extra difficulties and negative well-being implications faced by women in middle-management might deter women from leadership and this will in turn lead to less gender equality, so it is important to take action to reduce these potential negative effects. Our research has identified yet another factor involved in the glass ceiling that women face in

¹ The authors thank the anonymous reviewers for their highly constructive and helpful suggestions on several ideas discussed in the general discussion section.

achieving leadership within the workplace. To mitigate the lack of control and resources which women in middle-management roles face, we suggest that organizations provide women with more resources and support. Resources that could be made available include childcare and flexible work arrangements which can help women balance family and work demands. Support in the workplace can be provided by making leadership training available to improve skills and knowledge and mentoring to help women build networks and access opportunities which are otherwise unavailable, and which will help them navigate organizational politics and improve visibility with more senior leaders. There may also be opportunities for organizations to improve performance evaluations so that the additional problems faced by women compared to men in middle-management are properly objectified and recognized so that career advancement is fairer, based on merit and not biased by gender. It would also be useful to include additional training for men and women in the workplace to recognize and mitigate the effects of bias, which are not immediately obvious and yet have serious consequences in terms of fairness. Taking these actions will likely help organizations create a supportive and inclusive environment and culture which will help women succeed and thrive in middle management and achieve their professional goals. It is only by taking such steps that organizations and society can move forward to create a better and more equal workplace and world for all. For more information on gender issues in the workplace, see Fine et al. (2020), and for a review of gender equity interventions, see Lau et al. (2023).

Limitations and Future Research Directions

The research has several limitations that point toward directions for future research. First, an observation from the present article is that in Study 2, we found no differences in job demands between high-level leaders and nonleaders and in Study 3, we found that high-level leaders reported more workload than nonleaders. These inconsistent findings could be due to the different sample selection methods used in the studies. People who actively participated in Study 2 might be those without overwhelming workloads and thus had time to engage in the experience sampling study, which was much more time consuming than a regular survey study (e.g., Study 3). That is, the sample of Study 2 might be biased. Moreover, the confirmatory factor analysis test for the discriminant validity of the measures in Study 2 showed lower fit indices values than the commonly used standards, and one possibility for this was the small sample size (Hu & Bentler, 1999). We suggest readers consider these factors when interpreting the findings of Study 2; we also recommend that researchers collect larger unbiased samples in future research to provide more solid tests of the research questions. Second, the current research was unable to capture the dynamic change in a leader's well-being over several years. Presumably, if a leader has held a position for a long time, they may have already gotten used to the workload associated with that role. Thus, an experienced leader may cope with job stress and demands better than someone who just started in the position. Future research can explore this possibility by considering the dynamic change in a leader's well-being. Further, senior leaders will often have successfully navigated mid-level leadership positions and may be leaders who generally report more well-being than those currently in mid-level leadership positions. The present studies, however, do not

allow us to test this prospect. Future research can use longitudinal designs and check whether those mid-level leaders with higher levels of well-being are more likely to be promoted to senior levels.

Conclusion

Leaders' well-being has been an important but long-ignored research topic. The present article explores whether holding a leadership position influences one's well-being, compared to nonleaders. Specifically, we considered the level of the leadership position and the gender of job incumbents and found that mid-level leaders' general health condition was more adverse compared to nonleaders and high-level leaders; this effect was more pronounced among female leaders. Moreover, although leaders enjoy more psychological well-being than nonleaders in general, male managers appear to experience the benefit at the middle level, whereas female leaders need to be in a high-level leadership position to enjoy both more hedonic and eudaemonic well-being. We suggest that leaders' well-being needs more scholarly and managerial attention.

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