



Job and family demands and burnout among healthcare workers: The moderating role of workplace flexibility

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ABSTRACT

Burnout is a growing problem among healthcare workers. Whereas there are numerous predictors of burnout, this article explores the compounding effects of job and family demands among nurses and Patient Care Associates (PCA). This study used the 2018 survey data of the Boston Hospital Health Workers Study (BHWHS) to assess the relationship of job and family demands, workplace flexibility, and burnout (N = 874). In addition, it aimed to evaluate the moderating effect of workplace flexibility and job and family demands on burnout. Results of the study demonstrate that active and high strained healthcare workers are associated with higher odds of experiencing burnout as well as workers who reported perceived low workplace flexibility. In addition, workplace flexibility is associated with reduced odds of experiencing burnout. Workplace flexibility moderated the relationship of childless married healthcare workers and burnout. The study shows that workplace flexibility plays a critical role in potentially reducing odds of burnout in the healthcare worker population. Assessing the perception and accessibility to workplace flexibility among workers is imperative to improve worker well-being and the quality of care provided to patients especially the current effects to worker's health during a pandemic.

1. Introduction

Burnout is a concern for workers around the world. In 2019, the World Health Organization (WHO) officially declared burnout as an occupational phenomenon and was included in the 11th edition of the International Classification of Diseases (ICD-11) (World Health Organization, 2019). A U.S. poll reported that among 7500 full-time employees, close to a quarter reported experiencing burnout very often or always (23%) while almost half reported sometimes (44%) (Wigert & Agrawal, 2018). One of the occupations that experience high rates of burnout are healthcare workers (Medicine & National Academies of Sciences and Medicine, 2019). Whereas national studies examining burnout among healthcare workers are limited, existing studies reveal alarming rates. For instance, among physicians, burnout rates ranged between 40% and 54% from 2009 through 2019 while burnout rates

among nurses ranged between 35% and 45% from 2002 through 2016 (Medicine & National Academies of Sciences and Medicine, 2019). The increasing shortage of healthcare workers due to an aging population (Snaveley, 2016) and in light of the recent COVID-19 pandemic (Sasangohar, Jones, Masud, Vahidy, & Kash, 2020) suggest that healthcare workers will continue to be at high risk for burnout.

1.1. Burnout

Burnout is defined as a protracted response to persistent psychosocial and relational-related stressors consisted of three facets: exhaustion, cynicism, and professional inefficacy (Maslach & Leiter, 2016a). Decades of research reveal that burnout is associated with six domains of risk factors: work overload, lack of job control, insufficient reward or recognition, poor work collegiality, inequity in decision making, and

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conflict between worker and organizational values (Maslach & Leiter, 2016b). The presence of these risk factors in the workplace have been associated with job dissatisfaction and reduced organizational commitment among workers (Chowdhury, 2018). Chronic experiences of burnout and limited resources in the workplace increases the intention to leave for workers (Schaufeli, Leiter, & Maslach, 2009). Turnover in organizations can be costly for organizations. For example, the average cost of turnover of nurses for hospitals is \$44,400 per nurse, costing hospitals between \$3.6 to \$6.1 million (NSI Nursing Solutions, 2020). On the individual level, adverse outcomes associated with burnout among workers include emotional drain (Kelly, Lefton, & Fischer, 2019), detachment (López-López et al., 2019), and depression (Schonfeld & Bianchi, 2016).

1.2. Job demands

Healthcare workers perform taxing job responsibilities. Most hospitals are organized in nursing units. Each nursing unit may have a range of 30–60 beds (Yankovic & Green, 2011). An analysis of 64 hospitals found that on average each nurse is in charge of 1.5–9.4 patients depending on the unit (de Cordova, Rogowski, Riman, & McHugh, 2019), while there are usually two Patient Care Associates (PCAs) per unit per shift. Currently, only 14 states in the country has regulations on nurse-to-patient ratio while seven states have actual mandates. Nurses are tasked with physical care, administering medication, monitoring patient's status, administrative duties such as documentation and charting, and providing psychological and social needs of not only the patients but their family members and support network (Morrison & Korol, 2014). Low-wage healthcare workers like Certified Nursing Assistants (CNA) or PCAs provide more physically demanding services such as bathing, feeding, lifting patients, changing bed sheets, and stocking hospital rooms with necessary supplies (Lerner, Resnick, Galik, & Russ, 2010). Such demands are associated with high rates of injuries and illnesses, an average of 6.0 cases for every 100 employees (Dressner, 2017). These events are associated with negative adverse outcomes including pain, posttraumatic stress disorder (PTSD), hypervigilance, sleep disturbances, and reduced work functionality (Lanctôt & Guay, 2014). Consequently, high turnover rates are prevalent, particularly among low-wage healthcare workers averaging 129.1% (Gandhi, Yu, & Grabowski, 2021) compared to their high-wage counterparts such as nurses with 33.5% turnover after two years of becoming nurses (Kovner, Brewer, Fatehi, & Jun, 2014) due to burnout and emotional and physical exhaustion.

1.3. Family demands

Another important aspect of the experiences of healthcare workers is the influence of family demands. Family demands denote private or familial-related responsibilities such as caring for family members who are ill, parenting, providing support, and managing complex familial relationships (Gauche, de Beer, & Brink, 2017). However, disparities exist concerning which individuals or groups carry the burden of such demands. For instance, family demands are often gendered due to patriarchal-imposed roles on women (Blanch & Aluja, 2012; Parreñas, 2001). Similarly, low-wage workers, predominantly occupied by womxn of color in the healthcare sector (Burnham & Theodore, 2012), also experience more demanding job duties, working double shifts, and mandatory overtime (Walton & Rogers, 2017). Single parents, particularly, single mothers of ethnic minority descent face numerous forms of oppression related to their gender, race, and single-parent status that contribute to the challenges of balancing the demands of motherhood and working (Richard & Lee, 2019). Studies show that healthcare workers are conflicted from balancing providing care for their patients and their family which can at times lead to deficits in both spheres (Maher, 2014).

1.4. Combined job and family demands

Family and job demands are not mutually independent. The stress associated with family responsibilities can permeate to the pressure in the workplace, vice versa, which impacts the job performance and functionality of healthcare workers (Yeh, Chang, Hsu, Huang, & Yang, 2020). Healthcare workers due to the reality with shift-work, and for some inconsistencies in shift-work and lack of control when they can work, are finding themselves stressed in maintaining tight schedules between work and family activities that are intricately performed and oscillated between workers and their working spouses (Maher, 2014; Maher, Lindsay, & Bardoel, 2010). Other factors may explain further disparities in combined job and family demands. For instance, while having children can be a stressor, strong family cohesion and larger family size moderate the negative relationship between burnout and recovery (Ugwu, Ugwu, Njemanze, & Nwosu, 2018). Scholars have also argued that childless workers experience backlash because they are expected to work additional hours or be more flexible with their hours to accommodate their co-workers with rigid schedules because of familial responsibilities (Özbilgin, Beaugard, Tatli, & Bell, 2011). Research among healthcare workers show that those who experience compounding job and family demands are more likely to experience sleep deficiency (Jacobsen et al., 2014), musculoskeletal pain (Kim et al., 2013), and burnout (Reith, 2018; Yeh et al., 2020).

1.5. Workplace flexibility as a buffer to job and family demands

Organizational policies and practices can potentially mitigate the negative outcomes of job and family demands on burnout. Studies have shown that job resources like workplace flexibility can alleviate negative health outcomes among healthcare workers due to job and family demands, although, variations of health outcomes exist dependent on the prestige or title of one's occupation (Tveito et al., 2014). Workplace flexibility is defined as the level of autonomy of workers to choose the duration, tasks, location, and time that they can execute their job (Jeffrey Hill, Grzywacz, et al., 2008). From the organizational perspective, workplace flexibility can also refer to the ability of organizations to modify aspects and factors in the workplace that prioritizes the profitability of the organization with practices like hiring contract workers, quality circles, and job rotation (Jeffrey Hill, Grzywacz, et al., 2008). A study on patient care workers found that healthcare settings with greater job flexibility and decision latitude are associated with more physical activity among their workers which can prevent overweight and obesity (Nelson et al., 2014). Moreover, another study found significant associations between workplace flexibility and increased visits for preventive care among workers (Sabbath, Sparer, et al., 2018). In studies that examined familial structures in relation to job and family demands, schedule flexibility moderated stress among womxn, single parents, and workers with demanding familial responsibilities (Jeffrey Hill, Jacob, et al., 2008; Jung Jang, Zippay, & Park, 2012).

1.6. Purpose

Previous studies on healthcare workers that evaluated the associations of job and family demands on burnout among healthcare workers focused on specific occupations independently (Leineweber et al., 2014; Wang, Chang, Fu, & Wang, 2012). This article examined the compounding effects of job and family demands on burnout from a diverse sample of healthcare workers that included both nurses and PCAs which reflects a more accurate depiction of the population of healthcare workers. Furthermore, other studies operationalized family demands that included relationship status and number of children as separate variables (Cañadas-De la Fuente et al., 2015). This study will examine the familial structures additively and operationalized job demand using the Job Demands-Control model (Karasek, 1979). The purpose of this study is to 1) examine the associations of job and family demands and

workplace flexibility on burnout and 2) evaluate the moderating effect of workplace flexibility and job and family demands on burnout. Findings from this study can help inform healthcare organizational settings evaluate the efficacy of their organizational policies and practices that can reduce burnout.

2. Theory

The Job-Demands Resources (JD-R) model posits that every occupation has specific job risk factors that influences organizational outcomes, including, the well-being of workers (Bakker & Demerouti, 2007). Job demands pertain to the sustained physiological, social, or organizational responsibilities of the job while job resources refer to similar aspects but focuses in helping facilitate and achieve work goals, decrease job demands and its physiological and psychological costs, and cultivate family development among workers (Bakker & Demerouti, 2007). Workers can experience strain on the job as a result of stressful and exacting job demands. However, several studies have used the JD-R model to show that effective and accessible job resources can prevent adverse outcomes such as burnout (Agarwal, Mosquera, Ring, & Victorson, 2020; Salmela-Aro & Upadyaya, 2018). Workplace flexibility has been shown to lessen the likelihood of burnout (Nelson et al., 2014; Sabbath, Sparer, et al., 2018). Through the JD-R model we can understand how workplace flexibility among healthcare workers can potentially moderate the effect of burnout.

3. Material and methods

3.1. Participants

Data from the Boston Hospital Workers Health Study (BHWHS) was used for this study. Established in 2006, BHWHS is a longitudinal study of healthcare workers from two large hospitals in Boston that evaluates their workplace organization and condition, behavior, and health outcomes (Sabbath, Hashimoto, et al., 2018). The 2018 wave surveyed about 2000 workers with a 55% response rate ($N = 1101$). The survey had a total of 61 questions. After omitting cases with missing observations, we analyzed 874 healthcare workers. The present study was approved by the Human Research Committee at Partners HealthCare.

3.3. Measures

Burnout. The outcome variable of interest is burnout measured using a single-item question, "How often do you feel burned out from your work? Burnout is a feeling of physical and emotional exhaustion, due to stress from working under difficult or demanding conditions" (West, Dyrbye, Satele, Sloan, & Shanafelt, 2012). This single item measure has been validated in other studies focusing on a broad group of healthcare workers such as physicians, nurse practitioners, registered nurses, and medical technicians (Dolan et al., 2015; Shanafelt et al., 2015). Responses were assessed on a 7-point Likert scale (Never, A few times a year or less, Once a month or less, A few times a month, Once a week, A few times a week, Every day). While previous studies (West et al., 2012) show that the outcome variable, burnout, can be measured as binary or ordinal variables, the Brant test that tested proportional odds showed that assumptions were violated. Thus, measuring the outcome as an ordinal variable is inappropriate and using the binary outcome is more appropriate. We recoded burnout as a dichotomous variable No (Never – A few times per month) and Yes (Once a week – Everyday).

3.3.1. Main exposure variables

Family Demands. The variables included as family demands are marital status and number of children in the household. The study asked socio-demographic questions where respondents were able to indicate their marital or partnership status. They also reported how many

children are over and under 5 years old living with them three or more times during the week. Since previous research showed that familial structures are better indicators of work-family conflict (Blanch & Aluja, 2012; Richard & Lee, 2019; Walton & Rogers, 2017), we recoded the variables and created new categories of family characteristics (single no child, single with child, married no child, and married with child).

Job Demands. Job demands were measured using the Job Content Questionnaire (Karasek et al., 1998). We used the quadrants of job strain as a result of high demand and low control from the Job Demands-Control model (Karasek, 1979). To create this variable, we used the job demand sub-scale where participants were asked 5 questions (Cronbach's $\alpha = 0.74$) that assessed how hard and how much time the participant has to perform the task; some questions that were asked are "My job requires working very hard" and "I have enough time to get the job done." Low control was created using a combination of two sub-scales: skill discretion and decision making. For the skill discretion sub-scale, participants were asked 6 questions (Cronbach's $\alpha = 0.71$) that assessed if participants are able to develop skills in their work; some questions that were asked are "My job requires that I learn new things" and "My job requires me to be creative." For the decision-making sub-scale, participants were asked 3 questions (Cronbach's $\alpha = 0.63$) about their decision authority at work; a question that was asked is "I have a lot to say about what happens in my job."

All responses were measured in a 5-point Likert scale (Strongly Disagree – Strongly Agree). Mean scores were calculated for the demand and control variables. The median of each variable was used to determine whether the respondent is categorized as high or low on the demand and control variables. For example, if the respondent scored higher than the median for the demand variable, they are categorized in the high demand quadrant while a respondent who scored lower than the median for the control variable is categorized in the low control quadrant. The four job strain quadrants are: high strain (high demand, low control), active (high demand, high control), passive (low demand, low control), and low strain (low demand, high control). High strain pertains to workers who experience demanding job responsibilities with little control in the decision-making of facets of their job, active are workers who have high job demands but have control in the decision-making in facets of their job, passive workers have low job demands but also little control in the decision-making process, and low strain workers have low demands but high control in the decision-making, sometimes relegated to administrators (Karasek, 1979).

Workplace Flexibility. Workplace flexibility policies pertain to the level of independence that workers can perform their job responsibilities. Respondents were asked seven questions (Cronbach's $\alpha = 0.66$) informed from a previous study (Thomas & Ganster, 1995) that interrogates their ability to take time off work including vacations, when they work, the number of hours that they work, ability to receive personal phone calls while at work, opportunity to work from home, and if they can switch to a part-time schedule. Responses were measured in a 5-point Likert scale (Very Little – Very Much). We calculated the mean average scores of the seven items for the analysis. Previous studies that used the workplace flexibility scale used the mean average score of the items (Sabbath, Sparer, et al., 2018).

Covariates: age, gender, race, immigrant status, and job title (categories: nurse, patient care associate, and other (nursing director, assistant nursing director, and clinical nurse manager/supervisor)).

3.4. Statistical analysis

Univariate analysis examined the descriptive distribution of the variables. We constructed four models beginning with the associations of family structures and odds of burnout. We adjusted progressively for job demands, workplace flexibility, and covariates. We used binary logistic regressions to examine the associations of work-family conflict and workplace flexibility on odds of burnout. To determine the moderating effect of workplace flexibility, interaction terms between

workplace flexibility and job and family demands on burnout were tested. To assess the differences between family and job demands on burnout, we also stratified the sample between healthcare workers with perceived low flexibility compared to high flexibility using the mean score and repeated the preceding analyses. We used the “vce (cluster)” command by including hospital units as random effects because the workers in our sample are clustered in units. Missing cases were handled using listwise deletion. Data was analyzed using Stata 15 SE.

4.1. Results

Of the 874 healthcare workers in the sample, 92.91% are womxn, 85.24% are nurses, 82.15% identified as white, 84.10% are born in the U.S., and 29.18% are within the ages of 30–39 years old.

Almost 40% are married with no children. Twenty-nine percent of the healthcare workers are high strained which means that they experience high demands and low control at work. For workplace flexibility, on a scale of 1 (Very Little) to 5 (Very Much), the mean was 1.54 (SD = 0.24) meaning that when averaging across all items, higher scores corresponded to higher perception of workplace flexibility.

Of the total sample, 28.15% of the healthcare workers experienced burnout. Close to 41% are married without children and 51% of high strained healthcare workers reported burnout. Among those who are burned-out the mean of their perceived workplace flexibility is 1.48 (SD = ± 0.23). In examining the distribution of burnout within our covariates 33% of individuals less than 30 years old, 94% of womxn, 79% of white, 86% of U.S. born, and 83% of nurses reported burnout (Table 1).

In our first model (Model 1), we tested the associations of different

Table 1
Demographic characteristics of sample. (N = 874) [SD = standard deviation].

	Observations (%) or Mean ± SD	Observations of Burnout Cases (%) or Mean ± SD	p ^a
Burnout			
No	628 (71.85%)		
Yes	246 (28.15%)		
Family Status			.180
Single no child	232 (26.54%)	70 (28.46%)	
Single with child	45 (5.15%)	12 (4.88%)	
Married no child	323 (39.96%)	100 (40.65%)	
Married with child	274 (31.35%)	64 (26.02%)	
Job Strain			<.001
Low Strain	179 (20.48%)	17 (6.91%)	
Passive	234 (26.77%)	35 (14.23%)	
Active	210 (24.03%)	69 (28.05%)	
High Strain	251 (28.72%)	125 (50.81%)	
Workplace Flexibility (1–5; higher = better)	1.54 ± .24	1.48 ± .23	<.001
Age			.210
<30	250 (28.60%)	81 (32.93%)	
30–39	255 (29.18%)	73 (29.67%)	
40–49	158 (18.08%)	42 (17.07%)	
50+	211 (24.14%)	50 (20.33%)	
Gender			.473
Men	62 (7.09%)	15 (6.10%)	
Womxn	812 (92.91%)	231 (93.90%)	
Race			.126
White	718 (82.15%)	195 (79.27%)	
Black	79 (9.04%)	23 (9.35%)	
Latinx	35 (4.00%)	16 (6.50%)	
Other	42 (4.81%)	12 (4.88%)	
Immigrant Status			.396
U.S. Born	735 (84.10%)	211 (85.77%)	
Non-U.S. Born	139 (15.90%)	35 (14.23%)	
Job Title			.362
Nurse	745 (85.24%)	203 (82.52%)	
PCA	92 (10.53%)	31 (12.60%)	
Other	37 (4.23%)	12 (4.88%)	

^a p-values of Chi-square for categorical variables and t-tests for continuous variables.

family structures and burnout. None of the family structures were significantly associated with burnout. In the following model (Model 2) we adjusted for job demands, compared to low strained healthcare workers, active (OR = 4.58; 95% CI = 2.59,8.13) and high strained (OR = 9.43; 95% CI = 6.15,14.45) healthcare workers were all significantly associated with higher odds of burnout (Table 2).

In Model 3 we adjusted for workplace flexibility (OR = 0.36; 95% CI = 0.17,.76) and it was significantly associated with lower odds of burnout. Workplace flexibility also partially attenuated the associations of active (OR = 4.58;95% CI = 2.35,7.66) and high strain (OR = 8.11;95% CI = 5.14,12.79) and odds of burnout among healthcare workers.

In the final model where we adjusted for covariates (age, gender, race, immigrant status, and job title), there were no associations between family status and odds of burnout. Several of the categories of job strain were associated with odds of burnout: active (OR = 4.33; 95% CI = 2.38,7.89) and high strain (OR = 7.72, 95% CI = 4.88,12.21). The

Table 2
Logistic regression modeling of relationship of family and job demand on burnout. [OR = odds ratio; 95% CI = 95% confidence interval.].

	Model 1 OR (95% CI)	Model 2 OR (95% CI)	Model 3 OR (95% CI)	Model 4 OR (95% CI)
Family Status (ref Single no child)				
Single with child	.84 (.45,1.56)	.84(.44,1.60)	.87(.46,1.65)	.75(.38,1.47)
Married no child	1.04 (.69,1.55)	.98(.63,1.52)	.99(.63,1.56)	1.08 (.66,1.75)
Married with child	.71 (.46,1.07)	.73(.47,1.13)	.73(.47,1.14)	.71(.43,1.16)
Job Strain (ref Low Strain)				
Passive		1.70 (.89,3.23)	1.60 (.83,3.06)	1.34 (.68,2.63)
Active		4.58 (2.59,8.13)	4.24 (2.35,7.66)	4.33 (2.38,7.89)
		***	***	***
High Strain		9.43 (6.15,14.45)	8.11 (5.14,12.79)	7.72 (4.88,12.21)
		***	***	***
Workplace Flexibility (1–5; higher = better)			.36(.17,.76)	.29(.13,.61)
			**	***
Age (ref <30)				
30–39				.95(.61,1.47)
40–49				.91(.52,1.57)
50+				.71(.45,1.12)
Gender (ref Men)				
Womxn				1.27 (.61,2.66)
Race (ref White)				
Black				1.56 (.86,2.85)
Latinx				2.39 (1.07,5.34)*
Other				1.06 (.50,2.22)
Immigrant Status (ref U.S. Born)				
Non-U.S. Born				.76(.42,1.37)
Job Title (ref Nurse)				
PCA				2.16 (1.14,4.10)*
Other				1.64 (.61,4.42)

*p < .05, **p < .01, ***p < .001.

odds of burnout among active and high strained healthcare workers were also attenuated, meaning that the odds of burnout for active healthcare workers decreased by 5% and 18% for high strained workers. The calculation for attenuation is achieved by subtracting the odds ratio of the original main effect of the variable from the adjusted odds ratio and dividing the total sum from the odds ratio of the original main effect. Workplace flexibility (OR = 0.29; 95% CI = 0.13,.61) remained statistically significant and associated with lower odds of burnout.

We then incorporated interaction terms to determine the moderating effect between workplace flexibility and family status and job strain. Results of the two-way interaction between family status and workplace flexibility (OR = 6.02; 95% CI = 1.06,34.08; p < .05) suggest that higher perception of workplace flexibility intensified the association of married healthcare workers without children and burnout (Table 3).

To further understand the moderating, or buffering, effect of workplace flexibility on burnout by job and family demands, we stratified the sample between healthcare workers with perceived low versus high workplace flexibility (Table 4). Married healthcare workers without children with perceived high workplace flexibility (OR = 1.79; 95% CI = 1.01, 3.18) are associated with higher odds of burnout compared to married healthcare workers without children (OR = 0.69; 95% CI = 0.41,1.17) with low perceived workplace flexibility (Fig. 1). Active (OR = 10.25; 95% CI = 3.27,32.12) and high strained (OR = 17.49; 95% CI = 6.50;47.04) healthcare workers with perceived low workplace flexibility are associated with higher odds of burnout than active (OR = 2.62; 95% CI = 1.28,5.37) and high strained (OR = 5.94; 95% CI = 3.24,10.89) healthcare workers with perceived high workplace flexibility (Fig. 2).

5. Discussions

The purpose of the present study is twofold: first it examined the associations of job and family demands and workplace flexibility on burnout, and second it tested the moderating effect of workplace flexibility and job and family demands on burnout. We found that childless married healthcare workers and those who were categorized as active and high strained are more likely to experience burnout. Workplace flexibility slightly attenuated the odds of burnout among active and high-strained healthcare workers and it moderated burnout among childless married healthcare workers.

Healthcare workers with perceived low workplace flexibility are associated with higher odds of burnout. In our stratified sample of perceived low versus high workplace flexibility, active and high strained healthcare workers in the low workplace flexibility sample were associated with higher odds of burnout. Because healthcare workers provide

Table 3
Interaction terms between family and job demands and workplace flexibility on burnout [OR = odds ratio; 95% CI = 95% confidence interval.].

	OR (95% CI)
Family Status	
Single with child	.85 (.41,1.76)
Married no child	1.12 (.73,1.71)
Married with child	.74 (.48,1.13)
Workplace Flexibility	.07 (.02,.24)***
Interaction terms	
Single with child x Workplace Flexibility	.19 (.01,5.53)
Married no child x Workplace Flexibility	6.02 (1.06,34.08)*
Married with child x Workplace Flexibility	3.26 (.52,20.60)
Job Strain	
Passive	1.73 (.89,3.37)
Active	4.66 (2.45,8.86)***
High Strain	8.67 (5.33,14.08)***
Workplace Flexibility	
Passive x Workplace Flexibility	.58 (.05,7.37)
Active x Workplace Flexibility	.14 (.01,1.48)
High Strain x Workplace Flexibility	.19 (.02,1.60)

*p < .05, **p < .01, ***p < .001.

Table 4
Relationship of burnout and job and family demands by low and high workplace flexibility. [OR = odds ratio; 95% CI = 95% confidence interval.].

	Low Workplace Flexibility OR (95% CI) n = 439	High Workplace Flexibility OR (95% CI) n = 435
Family Status (ref)		
Single no child		
Single with child	.83 (.31,2.21)	1.17 (.50,2.71)
Married no child	.69 (.41,1.17)	1.79 (1.01,3.18)*
Married with child	.55 (.31,.99)*	1.00 (.56,1.80)
Job Strain (ref Low Strain)		
Passive	2.91 (.84,10.10)	1.27 (.56,2.91)
Active	10.25 (3.27,32.12)***	2.62 (1.28,5.37)**
High Strain	17.49 (6.50,47.04)***	5.94 (3.24,10.89)***

*p < .05, **p < .01, ***p < .001.

24/7 care, some healthcare workers with demanding responsibilities at work may have little control when they are scheduled to work (Maher, 2014). While the interaction term was not statistically significant between the relationship of job strain and burnout, stratified models showed that the association between job strain and burnout was qualitatively different for those with high and low workplace flexibility. This suggests there are different ways of understanding the moderating effect of workplace flexibility on job strain and burnout than interaction terms alone. Moreover, workplace flexibility is not necessarily a quality of the worker but rather a product of the working environment.

Workplace flexibility moderated burnout among married healthcare workers without children. This is somewhat inconsistent with existing findings that found that workplace flexibility is beneficial for single parents and workers with heavier familial responsibilities (Jeffrey Hill, Jacob, et al., 2008; Jung Jang et al., 2012). Married healthcare workers without children (OR = 1.08; 95% CI: .66,1.75) did report the highest rate of burnout in our sample (40.65%) as well as higher odds of burnout compared to single healthcare workers. This group may be experiencing work-family backlash (Özbilgin et al., 2011) that can create the expectation among married healthcare workers to be more flexible and take on heavier workloads than their counterparts with children. For instance, the largest cohort of married healthcare workers without children are under 30 years old (35%) and may be assumed to take on more inconsistent shift schedules. Within and across familial structures, this group also had the largest proportion of high strained workers (31%). They may also experience other stressors at home that are unrelated to stressors that single and married parents may have perhaps related to financial, communication, or satisfaction issues.

The lower distribution and lower odds of burnout among single and married parents compared to childless married healthcare workers also imply that having children is perhaps a protective factor from burnout. A work-family balance approach perhaps is a more useful indicator that increases job and family satisfaction which can decrease or prevent burnout (Wayne, Butts, Casper, & Allen, 2017). Furthermore, another study also suggest that considering the quality of relationship as opposed to just the familial structure may provide a better explanation of understanding stressors in families (Hannighofer, Foran, Hahlweg, & Zimmermann, 2017). Using the framework of the JD-R model (Demerouti, Bakker, Nachreiner, & Schaufeli, 2001), our findings show that considering family demands as an additional construct to the model is imperative in understanding burnout and how job resources such as workplace flexibility can possibly influence the likelihood of burnout when both job and family demands are accounted for.

Secondary findings show that workplace flexibility is associated with lower odds of burnout among healthcare workers. This study builds on previous studies that found workplace flexibility has numerous benefits to healthcare workers including associations with higher likelihood of preventive care use (Sabbath, Sparer, et al., 2018) and physical activity (Nelson et al., 2014). Aspects of workplace flexibility can potentially explain the lowered odds of burnout for workers. For instance, allowing

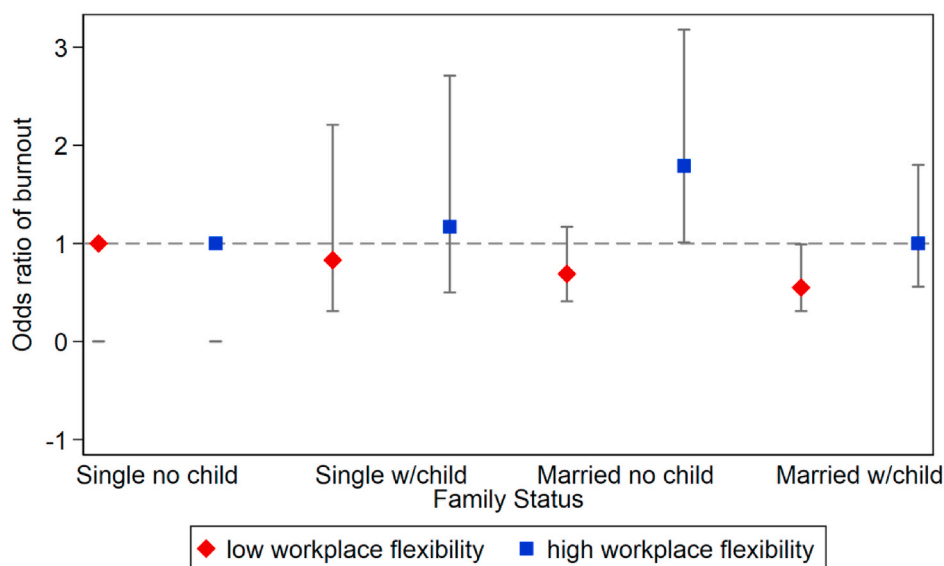


Fig. 1. Relationship of burnout and family demands by low and high workplace flexibility. Reference group is single no child.

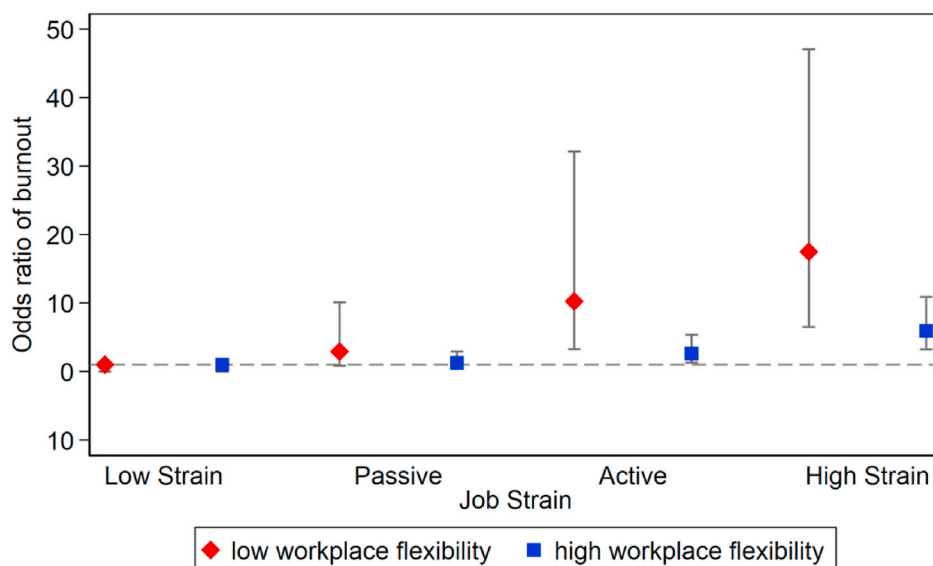


Fig. 2. Relationship of burnout and job demands by low and high workplace flexibility. Reference group is low strain.

for more flexible scheduling arrangement (Cull, Frintner, Starmer, & Leslie, 2019) and providing time off (Kühnel & Sonnentag, 2011) have been associated with lower odds of burnout among workers.

5.1. Strengths and limitations

Our study has limitations. The study used a single-item measure of burnout which can pose as a problem because it may only examine a specific aspect of burnout. While the measure of burnout used for this study has been validated by previous studies showing that single-item questions pertaining to emotional exhaustion and depersonalization derived from Maslach’s Burnout Inventory (MBI) Scale is a reliable measure, the question specifically asked in this study pertained to emotional exhaustion which excluded the construct of depersonalization (West et al., 2012). The use of these single-item questions has been tested in comparison to the full MBI scale, both in cross-sectional and longitudinal data of healthcare workers, and found that the single-item measures performed consistently with models that used the full MBI

scale (West et al., 2012). This may be a more efficient method of measuring burnout efficiently among healthcare workers where a full MBI scale can be time consuming. The 55% response rate of the respondents is low and may pose as a limitation in regards to reflecting the demographics of the workers in the setting of the study. Nevertheless, examining the demographics of the study mirrors the general characteristics of the workforce in hospitals among nurses and PCAs that are predominantly womxn, white, and have more nurses than PCAs per unit. However, our findings may not be generalizable beyond healthcare workers who work in hospital settings.

A strength of our study is that it includes a broader sample of healthcare workers in understanding the associations of burnout and job and family demands as well as the moderating effect of workplace flexibility compared to previous studies on burnout that examined healthcare workers independently (Leineweber et al., 2014; Wang et al., 2012). In addition, our study also showed that the JD-R model should consider including the construct of family demands in understanding the broader influence of job resources on the experiences of healthcare

workers. Scholars have proposed personal resources to moderate job demands, instead, the study found that personal resources mediated job resources and workplace engagement (Xanthopoulou, Bakker, Demerouti, & Schaufeli, 2007). Our study builds on the potential expansion of the model to not only consider family resources but also how job resources can moderate family demands. Finally, our framing of job and family demands allowed a more in-depth understanding of the topic. Following the Job Demands-Control model (Karasek, 1979) to construct the characterization of job demands is helpful in reflecting the complex conditions in which healthcare workers operate in healthcare settings. In addition, the additive approach to familial demands of relationship status and number of children, compared to testing for these variables separately, is able to capture a more accurate understanding of familial structures at home that may cause pressure or facilitation.

6. Conclusions

This study suggests that workplace flexibility may have an influence in mitigating the negative effects of burnout among healthcare workers who are experiencing high demand and low control in the workplace. Stratified samples showed that high strained healthcare workers with perceived low workplace flexibility is associated with higher odds of burnout. In addition, workplace flexibility moderated the relationship between childless married healthcare workers and likelihood of burnout compared to other familial structures.

Implications for this study denote that while larger structural changes in the workplace may take time and can be costly to lessen poor health outcomes such as burnout among healthcare workers, healthcare administrators and unit nurse managers can mitigate burnout by improving the efficacy and accessibility of workplace flexibility. This can include incorporating flexibility into jobs when possible, even when a full job redesign to reduce job strain is unfeasible among high strained workers. Researchers should consider the importance of measuring the causes of burnout beyond factors in the workplace but also the familial experiences of participants. Moreover, considering the varying demands of hospital units might also identify potential disparities in burnout among nurses and PCAs. The study also demonstrates that the current JD-R model should consider including family demands and resources as potential constructs to encompass a more accurate depiction of the stressors and resources that healthcare workers experience. Implementing equitable workplace flexibility policies that regulates workplace flexibility in accordance with the worker's demands in their job and familial spheres can possibly lower burnout which can reduce healthcare expenditures, improve the health and well-being of workers, and secure the quality of care that patients receive.

Author statement

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Declaration of competing interest

None.

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