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Job satisfaction and the psychosocial work environment: Does the relationship vary by hospital patient care workers' age?

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ABSTRACT

Increasing job satisfaction of healthcare workers is important for workers themselves, their employers, and their patients. This study draws on a sample of 1,409 patient care workers across two hospitals in the United States to explore the moderating effect of age in associations between job satisfaction and individual-workplace psychosocial exposures. Psychosocial work factors analyzed include job flexibility, job demands, decision latitude, break practices, and meal breaks. Contrary to mainstream management discourse, our findings suggest that most situational determinants of job satisfaction may not vary significantly by age. Findings can be used to inform occupational social work practice and future directions for managing employee behavioral health.

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Age; employee assistance; healthcare; job characteristics; job satisfaction

As workplaces become more age diverse than ever before, human resources departments are grappling directly with the profound interpersonal and organizational implications that accompany these demographic shifts (James, McKechnie, & Swanberg, 2011; Loeppke et al., 2013; Reisch & Gorin, 2001). Ultimately, multigenerational workplaces raise questions of how human service administrators and practitioners in occupational settings can deliver programs and services that optimize individual employee outcomes while also creating opportunities for productive aging and supporting the well-being of workers of all ages (Bass & Caro, 1996; Morrow-Howell, Hinterlong, & Sherraden, 2001).

There is no shortage of research examining associations between age and job satisfaction of patient healthcare workers, most finding a positive

association between age and job satisfaction; older healthcare workers are more satisfied with their job than younger workers (Ingersoll, Olsan, Drew-Cates, DeVinney, & Davies, 2002; Ng & Feldman, 2010). Another body of research points to psychosocial work factors that contribute to job satisfaction among patient care workers of all ages. Previous studies within healthcare literature have found that nurses' job satisfaction is correlated with perceptions of work–family conflict (Cahill, James, & Pitt-Catsoupes, 2015; Lu, Barriball, Zhang, & While, 2012), degree of psychological and structural empowerment (Cicolini, Comparcini, & Simonetti, 2014; Kowalski et al., 2010), and level of job demands (Harris & Daniels, 2005).

Despite what is known in the healthcare worker literature about age as a predictor of job satisfaction (Coburn & Hall, 2014; Keepnews, Brewer, Kovner, & Shin, 2010; Wilson & Gerber, 2008) and about the ways in which specific work factors contribute to job satisfaction (Kovner, Brewer, Wu, Cheng, & Suzuki, 2006; Lu et al., 2012; Zangaro & Soeken, 2007), less is known about the intersection of these literatures, particularly around the importance of individual work elements to healthcare workers of different ages.

Building on previous research, the goal of the present analysis is to examine associations between individual psychosocial work factors (henceforth referred to as “work factors”) and job satisfaction, and to discuss how the associations are moderated by age in a sample of hospital patient care workers (henceforth referred to as “healthcare workers”). Understanding these associations is critical for human resources departments to retain and maximize the potential of the multigenerational healthcare employee workforce.

Literature review

Job characteristics and satisfaction

Prior research has shown that improving healthcare workers' job satisfaction can lead to lower levels of staff turnover, reduced hospital costs, and higher levels of patient care (Coomber & Barriball, 2007; Laschinger, 2012; Purdy, Spence Laschinger, Finegan, Kerr, & Olivera, 2010). *Job satisfaction* is defined as “The degree of positive affect towards a job or its components” (Utriainen & Kyngäs, 2009, p. 1002). One of the more pragmatic approaches to increasing job satisfaction among healthcare workers is to identify the individual job characteristics that contribute to overall satisfaction.

Herzberg's (1966) motivation-hygiene theory has long been used to explain associations between work factors and overall job satisfaction. Similarly to Hackman and Oldham's (1976) job characteristics model,

Herzberg's theory is often cited in studies related to worker satisfaction and motivation. The motivation-hygiene theory suggests that certain facets of one's job (including responsibility, personal growth, achievement, advancement) provide motivation for workers, and that these factors are cultivated primarily through intrapersonal channels. At the same time, factors that are more structural in nature (such as organizational policies, management practices, working conditions) serve as "hygiene factors" and more often cause dissatisfaction. Herzberg's theory suggests that worker motivation and satisfaction will be enhanced to the extent that motivators are embedded in their work. The motivation-hygiene theory of work looks to situational (rather than dispositional) work factors as determinants of job satisfaction and motivation.

Indeed, multiple studies have found associations between a wide range of psychosocial workplace factors and job satisfaction among healthcare workers. Utriainen and Kyngäs's (2009) review suggests three main factors influencing nurses' job satisfaction: interpersonal relationships, patient care, and organization of nursing work (p. 1006). Shortly thereafter, Hayes, Bonner, and Pryor (2010) found in a meta-analysis that sources of nurses' job satisfaction can be grouped into three different domains: intrapersonal (within the nurse), interpersonal (between the nurse and colleagues or patients), and extrapersonal (external to the nurse).

Multiple studies point to the importance of job flexibility, or the extent to which workers can adjust their shift schedules, as a predictor of job satisfaction. Cahill et al. (2015) found that in a randomly assigned time and place management initiative with 9,000 healthcare employees, increases in job flexibility had a statistically significant impact on employees' expectations of remaining with the organization. Similarly, in a meta-analysis of 100 papers, Lu et al. (2012) found that job flexibility, or the extent to which workers can adjust their shift schedules, is a primary predictor of job satisfaction among hospital nurses.

The literature points to a similar relationship between decision latitude and job satisfaction. This construct refers to workers' opportunities to be creative at their job and to build and use professional and personal skills at the workplace. Dunn, Wilson, and Esterman (2005) and Karasek et al. (1998) found that higher levels of decision latitude are associated with increases in job satisfaction. Most recently, Iliopoulou and While's (2010) study of floor nurses in Greece confirmed previous research that workers' abilities to make decisions with a degree of autonomy is a driver of satisfaction. Psychological demands, the other dimension of Karasek and Theorell's (1992) demands-control-support model, has also been negatively associated with job satisfaction (Harris & Daniels, 2005).

Meal breaks contribute to job satisfaction by lessening fatigue, which indirectly leads to better physical and mental health of nurses and better outcomes for patients (Hurtado, Nelson, Hashimoto, & Sorensen, 2015; Witkoski & Dickson, 2010; and Rogers, Hwang, & Scott, 2004). Most specifically, Drach-Zahavy and Marzuq (2013) found that very short breaks between shifts contribute to more emotional exhaustion, which in turn impacts overall job satisfaction.

The preceding literature informs our first research question, which asks: “What is the association between working factors and overall job satisfaction of healthcare workers?” Stemming from theoretical contributions from Herzberg, Mausner, and Snyderman (2011) and aforementioned empirical contributions, we hypothesize that perceptions of motivators (including job flexibility, decision latitude, and break practices) will be positively associated with overall job satisfaction.

The modifying effect of age in the association between job satisfaction and work factors

Previous research in various industries has demonstrated that job satisfaction fluctuates across the life span (James et al., 2011; Pitt-Catsouphes & Matz-Costa, 2008, 2009). Some research has shown that youngest and oldest workers tend to report the highest levels of job satisfaction (Clark, Oswald, & Warr, 1996; Hochwarter et al., 2001) whereas other research has shown that older workers tend to report the most satisfaction with their work (Bernal, Snyder, & McDaniel, 1998; Ingersoll et al., 2002; Ng & Feldman, 2010). Nonetheless, within the healthcare worker literature, age has a demonstrably weaker relationship with overall job satisfaction (Blegen, 1993; Ruggiero, 2005; Utriainen & Kyngäs, 2009).

Although individual work factors and overall job satisfaction have been well studied among healthcare workers, less work has focused on the moderating role of age in this relationship. Research has shown that workers of different age and generational cohorts can have different preferences regarding job setup and benefits (Apostolidis & Polifroni, 2006; Bond, Galinsky, Pitt-Catsouphes, & Smyer, 2005; Harris, Bennett, Davey, & Ross, 2010). Several social science perspectives and theories explain possible reasons. The life-course perspective suggests that sequencing and timing of life events is crucial and that, applying this notion to work, people will experience peaks and valleys in job satisfaction at different points in their lives (Alwin, 2012; Elder & Giele, 2009; Mayer, 2009). Building on the life-course perspective, James et al. (2011) leverage earlier work about life-span approaches to job satisfaction in arguing that age-specific norms and expectations emerge within organizations. These norms and expectations

are formed through multiple conceptualizations of age that can be chronological/legal, functional, psychosocial, and/or organizational in nature. Combined, these conceptualizations acknowledge age-specific norms and expectations that play out in organizations and can shape workers' levels of satisfaction (Sterns & Miklos, 1995; Sterns, Sterns, & Hollis, 1996).

In the present study, the life-course perspective and life-span approach to job satisfaction are applied in response to the question, "Does healthcare worker job satisfaction vary by age?" To apply these perspectives to this question is to acknowledge that timing and sequencing of experiences, including professional ones, is important, and that there are multiple conceptualizations of age, therefore we hypothesize that healthcare worker job satisfaction will vary significantly by age.

The multiple roles workers may employ and the impact role conflict can have on job satisfaction. Role theory (Jackson, 1998; Sarbin & Allen, 1954) suggests that people take on different roles according to socially defined categories such as parent, supervisor, professor, and so on. The extent to which work-family role conflicts arise may vary based on age (Bianchi & Milkie, 2010). Given what is known about age-related markers in roles and role conflict in relation to job satisfaction, the next research question is, "Are certain working factors associated with job satisfaction differently by different age groups?" Applying role theory to this question, we hypothesize that associations between work factors and overall job satisfaction will vary by age in significance and magnitude.

The study

Methods

Data are drawn from a 2014 survey of hospital patient care workers that are part of the Boston Hospital Workers Health Study (BHWHS). BHWHS is a longitudinal cohort study of patient care workers at two Boston academic medical centers. The overall goal of BHWHS is to understand associations between workplace policies and programs, worker health and safety, and enterprise outcomes. More information about BHWHS is available elsewhere (Sabbath et al., 2018).

In 2014, investigators sent surveys to 1,968 BHWHS participants that had previously been randomly sampled for a similar survey in 2012 (eligibility criteria for being sampled: working in one of the BHWHS study units under direction of a nurse manager; having direct patient care responsibilities; working at least 20 hours per week; not on extended leave of >12 weeks). Overall, 73% of participants ($n = 1,440$) responded to at least 50% of the survey and were eligible for inclusion in our analysis. Survey respondents included registered nurses (RNs), clinical nurse specialists, and

patient care associates (PCAs). Surveys were included in the analysis if participants completed questions about age and job satisfaction; final analytic $n = 1,409$.

Measurements

Job satisfaction

The dependent variable in the study, job satisfaction, was measured with a single item measure of, “All in all, how satisfied would you say you are with your job?” (Lu, While, & Barriball, 2005; Mangione & Quinn, 1975; Quinn & Sheppard, 1974). Possible responses were *not at all satisfied*, *not very satisfied*, *somewhat satisfied*, *quite satisfied*, or *extremely satisfied*. Given the small percentage of employees who reported being *not at all satisfied* (.1%) or *not very satisfied* (3.4%), we combined the latter two categories for analyses. Assessing job satisfaction with a single-item measure of job satisfaction is a well-validated approach. Scores on single-item measures of job satisfaction are correlated with scores on multi-item measures of the same construct (Quinn & Sheppard, 1974). More generally, single-item measures of work-related constructs have proven to be both reliable and valid (Sabbath, Goldberg, Wu, & Descatha, 2012; Wanous, Reichers, & Hudy, 1997).

Psychosocial work factors

The independent variables in the study are psychosocial work factors. These working factors were chosen as independent variables because of their documented associations with job satisfaction (Blegen, 1993; Hayes et al., 2010). The first factor is job flexibility (Thomas & Ganster, 1995). Workers were asked about the level of choice they have in several areas, such as when they take vacations and days off, when they can take off a few hours, and when they begin and end each day (seven items total). Items were summed and converted to a score of 1 (*lowest flexibility*) to 5 (*highest flexibility*).

The second condition, break practices, refers to general practices around work break-taking practices on workers’ units (Thomas & Ganster, 1995). Workers were asked the extent to which they agreed with three items, such as whether workers cover for each other on breaks. The break practices variable combines these questions in a score ranging from 1 (*worst practices*) to 5 (*best practices*). The meal breaks variable refers to the number of breaks that workers actually take. Workers were asked how often within the last year they left their unit for their meal break and how often they

Table 1. Descriptive characteristics of sample.

Variable		<i>n</i> (%)
Age cohort (<i>n</i> = 1407)	Younger than age 30 years	337 (24)
	31–40	374 (26.6)
	41–50	310 (22)
	51 or over	386 (27.4)
Gender (<i>n</i> = 1407)	Male	91 (6.5)
	Female	1316 (93.5)
Race/ethnicity (<i>n</i> = 1407)	Hispanic	55 (3.9)
	Non-Hispanic White	1130 (80.3)
	Non-Hispanic Black	109 (7.7)
	Mixed race or other	113 (8.0)
Job title (<i>n</i> = 1403)	Nurse (including clinical nurse specialist and staff nurses)	1213 (86.5)
	Patient care associate	103 (7.3)
	Other	87 (6.2)
Job hours per week (<i>n</i> = 1405)	29 or fewer hours	292 (20.8)
	30–34 hours	146 (10.4)
	35–39 hours	603 (42.9)
	40+ hours	364 (25.9)
Job satisfaction (<i>n</i> = 1407)	1 (<i>Not at all satisfied or not too satisfied</i>)	50 (3.5)
	2 (<i>Somewhat satisfied</i>)	404 (28.7)
	3 (<i>Very satisfied</i>)	740 (52.6)
	4 (<i>Extremely satisfied</i>)	213 (15.1)
Number of bullying behaviors experienced at work (<i>n</i> = 1375)	Experienced 0 bullying behaviors	701 (51)
	Experienced 1 bullying behavior	313 (22.8)
	Experienced 2 bullying behaviors	192 (14)
	Experienced 3 bullying behaviors	169 (12.3)
Work condition characteristics	Range	<i>M</i> (<i>SD</i>)
Job flexibility (<i>n</i> = 1401)	1–5	2.51 (.73)
Break practices (<i>n</i> = 1392)	1–5	4.04 (.84)
Work breaks for meals (<i>n</i> = 1389)	1–5	2.93 (1.06)
Job demands (<i>n</i> = 1362)	16.50–48.00	35.34 (4.99)
Decision latitude (<i>n</i> = 1368)	31.50–94.50	73.05 (9.18)

took their full break. The meal break variable is the average score of these questions, with scores ranging from 1 (lowest) to 5 (highest).

Job demands refers to workers' reports of factors such as level of skill, amount of time allotted to get their job done, and the extent to which they report conflicting demands in their workplace (Karasek & Theorell, 1992). Scores for job demands ranged from 12 (lowest score) to 48 (highest score). Finally, decision latitude, a measure of worker empowerment, task variety, and worker empowerment combines questions related to skill discretion (five questions) and decision authority (three questions) (Karasek et al., 1998). Scores range from 1 (lowest score) to 5 (highest score) and the overall scale ranging from 24 to 96.

Moderating and control variables

The primary demographic variable of interest in this study is age. Age effects were analyzed as a main effect and for their modifying role in the

Table 2. Comparing main study variables across age cohorts.

Study Variable	Under age 30 years <i>M (SD)</i>	31–40 years old <i>M (SD)</i>	41–50 years old <i>M (SD)</i>	51 years and older <i>M (SD)</i>	<i>F</i> test	<i>p</i> -value
Job flexibility (range: 1–5)	2.52 (.72)	2.59 (.69)	2.37 (.69)	2.54 (.77)	5.45	.00
Break practices (range: 1–5)	4.08 (.82)	3.96 (.90)	4.07 (.82)	4.06 (.82)	1.63	.18
Work breaks for meals (range: 1–5)	2.86 (1.09)	2.88 (1.05)	2.95 (1.08)	3.02 (1.04)	1.68	.17
Job demands (range: 16.5–48)	36.19 (4.51)	35.69 (4.69)	34.98 (4.94)	34.51 (5.58)	7.74	.00
Decision latitude (range: 31.5–48)	74.66 (8.24)	71.96 (8.76)	73.08 (9.53)	72.66 (9.91)	5.41	.00
Job satisfaction (range: 1–4)	2.79 (.69)	2.68 (.69)	2.82 (.74)	2.88 (.78)	4.75	.00

Note. Values represent mean scores of main study variables, stratified by age cohort.

association between job satisfaction and individual work factors. Workers' ages were categorized into four groups: Younger than age 30 years, 31 to 40 years, 41 to 50 years, and 51 years and older.

Our age categories used a life-span approach (James et al., 2011; Sterns & Miklos, 1995; Sterns et al., 1996). We adapted James et al.'s (2011) age categories to capture the career-related developmental stages, including emerging professionals ages 30 and younger (Arnett, 2007; Robbins & Wilner, 2011), early-career professionals ages 31 to 40 years (Pogson, Cober, Doverspike, & Rogers, 2003), midcareer professionals ages 41 to 50 (Sterns & Huyck, 2001), and near-retirement professionals ages 51 years and older (James & Wink, 2007; Lachman, 2001; Sterns & Huyck, 2001). These four groups are relatively similar in size in the sample.

Other demographic variables were gender (man/woman), race (non-Hispanic White, non-Hispanic black, Hispanic, mixed race/other), job title (staff nurse, patient care associate, other), and job hours per week (29 or fewer hours, 30–34 hours, 35–39 hours, or 40+ hours).

Statistical analyses

We used ordered logistic regression to model the moderating role of age in the association between job satisfaction and work factors. Ordered logistic regression was employed because job satisfaction was measured as an ordinal variable (Gordon, 2015; Hurtado et al., 2017). The results of the ordered logistic analysis demonstrate the log odds of a worker having a higher level of job satisfaction with a one-unit increase of a selected working condition. Weights were applied to the analyses to account for sampling design.

Table 3. Ordered logistic regression models for odds ratios (95% confidence intervals) of higher job satisfaction associated with work factors and demographic variables.

Psychosocial Exposure	Demands OR (CI 95%) <i>p</i>	Decision-Latitude OR (CI 95%) <i>p</i>	Flexibility OR (CI 95%) <i>p</i>	Break Practices OR (CI 95%) <i>p</i>	Work Breaks OR (CI 95%) <i>p</i>
Model 1: Work factor only					
Work condition	.90 [.89, .92].00	1.09 [1.08, 1.12].00	1.52 [1.28, 1.79].00	1.47 [1.29, 1.67].00	1.29 [1.16, 1.43].00
Model 2: Work factor and age effects					
Work condition	.90 [.88, .93].00	1.10 [1.08, 1.12].00	1.55 [1.31, 1.84].00	1.47 [1.29, 1.67].00	1.28 [1.15, 1.42].00
Age	1.0	1.0	1.0	1.0	1.0
<30 (ref)					
31–40	.82 [.60, 1.11].19	.97 [.72, 1.31].85	.79 [.58, 1.07].12	.88 [.66, 1.18].39	.85 [.63, 1.38].27
41–50	.99 [.72, 1.38].98	1.19 [.86, 1.65].30	1.16 [.85, 1.59].35	1.14 [.83, 1.56].43	1.13 [.82, 1.54].46
>51	1.28 [.93, 1.76].13	1.59 [1.17, 2.19].00	1.32 [.97, 1.79].07	1.39 [1.02, 1.90].04	1.29 [.96, 1.77].09
Model 3: Work factor and all covariates					
Work condition	.90 [.89, .93].00	1.10 [1.09, 1.13].00	1.62 [1.37, 1.91].00	1.43 [1.26, 1.63].00	1.23 [1.09, 1.38].00
Age	1.0	1.0	1.0	1.0	1.0
<30 (ref)					
31–40	.85 [.62, 1.16].31	1.01 [.74, 1.39].93	.83 [.61, 1.13].24	.89 [.66, 1.22].49	.87 [.64, 1.18].39
41–50	1.06 [.75, 1.49].73	1.17 [.83, 1.64].37	1.25 [.89, 1.73].19	1.17 [.84, 1.63].36	1.18 [.85, 1.64].32
>51	1.29 [.93, 1.79].13	1.52 [1.09, 2.11].01	1.33 [.98, 1.82].07	1.36 [.99, 1.86].06	1.31 [.96, 1.79].09
Gender					
Men	1.33 [.87, 2.05].19	1.44 [.92, 2.26].11	1.29 [.97, 2.33].07	1.36 [.87, 2.12].18	1.33 [.85, 2.07].21
Women (ref)	1.0	1.0	1.0	1.0	1.0
Race					
Hispanic	1.32 [.72, 2.40].37	1.44 [.78, 2.68].25	1.51 [.79, 2.89].21	1.25 [.67, 2.32].48	1.39 [.77, 2.48].28
Black	.49 [.33, .75].00	.76 [.47, 1.22].26	.58 [.38, .89].01	.59 [.39, .89].01	.56 [.37, .85].01
Mixed race/other	.58 [.37, .89].01	.89 [.56, 1.39].61	.63 [.41, .98].04	.58 [.38, .90].02	.61 [.39, .94].03
White (ref)	1.0	1.0	1.0	1.0	1.0
Job title (QIrecode)					
Patient care associate	1.08 [.63, 1.88].77	3.24 [1.73, 6.04].00	1.57 [.86, 2.85].14	1.57 [.89, 2.75].12	1.34 [.75, 2.39].32
Other	1.44 [.82, 2.54].21	1.72 [1.01, 2.91].05	1.67 [.98, 2.85].06	1.74 [1.01, 2.99].05	1.64 [.95, 2.83].07
Nurse (ref)	1.0	1.0	1.0	1.0	1.0
Hours worked					
<30 hours (ref)	1.0	1.0	1.0	1.0	1.0
30–34 hours	.86 [.57, 1.29].47	1.02 [.66, 1.58].93	.91 [.61, 1.35].63	.97 [.64, 1.46].88	.89 [.59, 1.34].56
35–39 hours	1.14 [.84, 1.55].39	1.17 [.83, 1.64].37	1.25 [.89, 1.73].19	1.11 [.82, 1.49].49	1.11 [.82, 1.50].48
40 or more hours	1.48 [1.05, 2.09].03	1.52 [1.09, 2.11].01	1.33 [.98, 1.82].07	1.28 [.91, 1.79].16	1.27 [.90, 1.79].17
Model 4: Interaction of age and work factor					
Work condition	.95 [.90, .99].03	1.09 [1.05, 1.12].00	1.19 [.83, 1.71].34	1.01 [.79, 1.30].91	1.11 [.93, 1.33].25
Age	1.0	1.0	1.0	1.0	1.0
<30 (ref)					
31–40	1.75 [.16, 19.42].65	.42 [.02, 7.34].55	.60 [.17, 2.08].42	.15 [.78, 1.30].00	.51 [.22, 1.19].12
41–50	19.62 [1.58, 244.03].02	.60 [.03, 14.51].79	.45 [.12, 1.68].23	.13 [.03, .62].01	.69 [.26, 1.84].46
>51	11.18 [1.18, 109.12].04	.60 [.04, 10.38].73	.44 [.14, 1.42].17	.26 [.05, 1.26].09	.75 [.29, 1.87].53
Age * Work Factor interaction					
Younger than 30 (ref)	1.0	1.0	1.0	1.0	1.0
31–40	.98 [.92, 1.05].53	1.01 [.97, 1.05].57	1.13 [.69, 1.82].63	1.55 [1.14, 2.12].01	1.18 [.90, 1.53].23
41–50	.92 [.86, .99].02	1.01 [.97, 1.05].71	1.48 [.88, 2.50].14	1.69 [1.15, 2.48].01	1.69 [.86, 1.59].33
>51	.94 [.88, 1.00].06	1.01 [.98, 1.05].49	1.56 [.99, 2.47].06	1.51 [1.02, 2.22].04	1.19 [.91, 1.57].21

Note. OR: odds ratio; CI: confidence interval.

Results

Table 1 presents descriptive characteristics of the sample. The sample included primarily White female nurses who worked between 35 and 39 hours per week.

Table 2 presents mean levels of each of the main study variables by age group. We found statistically significant differences ($p < .01$) in job flexibility, job demands, and decision latitude among the four age cohorts. Levels of job satisfaction differ by age cohort ($p < .01$), with workers ages 51+ reporting the highest satisfaction, and workers ages 30 and younger reporting the lowest.

Table 3 presents regression analysis results. The first model contains the work condition only (each work condition is in a separate model). The second model contains the work condition and age. The third model contains the work condition along with all covariates in the model, including age, gender, race, job title, and hours worked per week. The fourth and final model contains the work condition, age, and the interaction between age and the work condition.

In the first model, we estimated the association between each working condition and level of job satisfaction. Our analysis revealed that with a one-unit increase in four out of five working factors of interest, there would be an increase (B ranged from 1.09 to 1.52, $p < .01$) in log odds of having a higher level of job satisfaction. The only exception was job demands, whereby a one-unit increase in job demands was associated with a decrease ($B = .90$, $p < .01$) in the log odds of having a higher level of job satisfaction. Thus, higher levels of job flexibility, decision latitude, break practices, and work breaks for meals are positively associated with job satisfaction ($p < .001$), and higher levels of job demands are negatively associated with job satisfaction ($p < .001$).

In the second model, we estimated the effects of age on job satisfaction, adjusting for each of the job characteristics. From this model, we were able to conclude that age was significantly associated with job satisfaction even after adjusting for job characteristics, and as a corollary, job characteristics were significantly associated with job satisfaction, even after adjusting for age.

In the third model, we modeled associations between each work factor on job satisfaction when adjusting for key demographic and occupational characteristics, including age, gender, race, job title, and hours worked. The associations between job satisfaction and working factors remained similar to the first and second models; all work factors remained significantly associated with job satisfaction at the ($p < .05$) level.

In the fourth and final model, we estimated the association between each working condition on job satisfaction when adding the interaction between

Table 4. Odds ratios (95% CI) of higher job satisfaction associated with work factors, age-stratified.

Work Factor	OR [CI 95%] <i>p</i> -value		OR [CI 95%] <i>p</i> -value		OR [CI 95%] <i>p</i> value		OR [CI 95%] <i>p</i> value	
	Younger than age 30 years		31- to 40-year-olds		41- to 50-year-olds		51 and older	
Demands	.93	[.88, .98] .01	.92	[.87, .96] .00	.87	[.82, .92] .00	.89	[.87, .94] .00
Decision latitude	1.09	[1.06, 1.14] .00	1.12	[1.09, 1.16] .00	1.11	[1.07, 1.14] .00	1.11	[1.09, 1.15] .00
Flexibility	1.32	[.89, 1.95] .17	1.39	[.99, 1.97] .05	1.86	[1.28, 2.70] .00	1.90	[1.44, 2.51] .00
Break practices	.99	[.75, 1.32] .97	1.63	[1.32, 2.00] .00	1.59	[1.16, 2.16] .00	1.49	[1.13, 1.97] .01
Work break	1.16	[.92, 1.47] .21	1.28	[1.02, 1.61] .04	1.17	[.89, 1.55] .26	1.33	[1.07, 1.65] .01

Note. OR: odds ratio; CI: confidence interval.

All models are adjusted for gender, race, job title, and hours worked.

age and work condition. The most notable finding from this model centered on break practices. Compared with the youngest workers, with a one-unit increase in break practices, workers ages 31 and older had an increase in the log odds of having higher job satisfaction ($B = 1.51-1.69, p < .05$). Compared with the youngest workers, 41- to 50-year-old workers had the highest increase in the log odds of having higher job satisfaction ($B = 1.69, p < .01$).

To more closely examine differences in drivers of job satisfaction for workers in different age groups, we stratified the third model by age groups. Table 4 presents age-stratified results from the third model, wherein all models are adjusted for gender, race, job title, and hours worked. These results demonstrate that, when taking occupational and sociodemographic variables into account, associations between decision-latitude/job demands and job satisfaction do not vary significantly by age. Other work factors, however, were differentially associated with job satisfaction by age group. For example, flexibility was more strongly associated with job satisfaction for workers ages 51 and over ($B = 1.90, p < .01$) compared with workers ages 30 and younger ($B = 1.32, p = .17$). There was a positive and linear association between job flexibility and job satisfaction by age cohort, with increases in both magnitude and significance with increasing age.

Break practices were significantly associated with satisfaction for all workers except for those ages 30 and younger. Meal breaks, however, were significantly associated with satisfaction only for workers ages 31 to 40 and 51 and older.

Discussion

The aim of this study was twofold: first to understand the extent to which individual work factors contribute to job satisfaction of healthcare workers, and second to explore how and if such associations are moderated by age. Our first hypothesis—based on Herzberg’s (1966; Herzberg et al., 2011) work on motivation-hygiene theory—posited that job flexibility, decision latitude, and break practices would be positively associated with overall job

satisfaction because they are motivational in nature. Hypothesis 1 was supported, in that decision latitude, flexibility, break practices, and work breaks were positively associated with job satisfaction. In terms of magnitude, flexibility and break practices were most strongly associated with job satisfaction. Findings were consistent with previous research, especially about job flexibility, which has been shown to improve job satisfaction for workers of different ages by improving work–life fit (Lu et al., 2012; Skinner, Elton, Auer, & Pocock, 2014).

Our second hypothesis—that, from a life-course perspective, healthcare worker job satisfaction would vary significantly by age—was also supported. There were significant differences ($p < .01$) in the mean level of job satisfaction across age cohorts, though no linear relationship was found between age and job satisfaction. Our findings were consistent with previous research pointing to older workers having higher levels of job satisfaction (Ingersoll et al., 2002; Ng & Feldman, 2010).

Where this study contributes most uniquely to the occupational well-being literature is in the analysis of age effects as modifiers in the association between job satisfaction and individual work factors. Notwithstanding the finding of age differences in associations between break practices and satisfaction, these analyses suggest that many drivers of work satisfaction do not vary by age. For instance, our findings confirmed previous research about the importance of job flexibility to healthcare workers of all ages.

Therefore, results from the study echo Deal (2007) in suggesting that, though the multigenerational workforce does require managers to think differently about different age workers, drivers of job satisfaction may not be meaningfully driven by age. The lack of statistically significant differences in the interaction between age effects and work factors on job satisfaction is compelling in and of itself, considering the recent focus on challenges of managing the multigenerational nursing workforce (Coburn & Hall, 2014; Keepnews et al., 2010).

The importance of break practices to workers of different ages

Previous research has demonstrated that many healthcare workers do not take regular breaks and that doing so is related to lowered job satisfaction (Hurtado et al., 2015; Khowaja, Merchant, & Hirani, 2005; Sveinsdottir, Biering, & Ramel, 2006). However, we have found little research pointing to the moderating role of age in the association between break-taking practices and overall job satisfaction. In our study, results about the modifying effect of age on the associations between work factors and job satisfaction was not statistically significant. However, the importance of break practices did vary by worker age. More specifically, we found that workers older

than age 31 who perceived break taking on their unit to be acceptable and encouraged had higher odds of reporting higher levels of job satisfaction compared with those age 30 and younger.

The first possible explanation for this finding is that, in accordance with role theory (Jackson, 1998; Sarbin & Allen, 1954), workers have competing personal and family demands outside of work that align with their given roles, and that these roles may coincide differently with the need for, and appreciation of, work breaks. Parenting age is occurring later in life, therefore, it is possible that beginning more often in their thirties, workers experience high levels of emotional exhaustion independent from and combined with their professional role (Dilworth, 2004). At the same time, as people live and work longer, older workers (women, specifically) are more likely than ever before to serve in caregiving roles for spouses or aging parents while continuing to work (James, Pitt-Catsouphes, Coplon, & Cohen, 2013). Workers may also be operating in sandwich caregiving roles, caring for children and aging parents, making work breaks important times to recover and/or communicate with care recipients or service providers (Gastfriend, James, & McNamara, 2012).

The other possible explanation for age-related differences in job satisfaction by break practices is more physiological in nature. By definition, a natural part of the aging process includes a gradual degradation of health and physical vitality (Goodpaster et al., 2006), though such decline may be less pronounced in a working population due to the healthy worker survivor effect (Applebaum, Malloy, & Eisen, 2007). Direct healthcare work is, in general, quite physically demanding and fatiguing (Sembajwe et al., 2013). Given that ability to perform these demanding tasks may change with age (Heiden, Weigl, Angerer, & Müller, 2013; Letvak, 2005; Santos et al., 2003), older healthcare workers may be more reliant on breaks to physically recover from exertion on the job, despite the fact that they may work with patients who do not require as much lifting and/or receive more assistance from other staff (Fitzgerald, 2007).

Strengths and limitations

This study offers multiple contributions to the fields of occupational health and human resource administration. Our study measures multiple psychosocial workplace exposures and is one of the first studies to explore the moderating effect of age on associations between job satisfaction and individual psychosocial work factors. Despite the study strengths, there are also several limitations of the study, including two potential confounders. First, our finding that older workers report the highest levels of satisfaction may be confounded by the healthy worker effect (Pearce, Checkoway, & Krichel,

2007; Shah, 2009), a process of self-selection in which older nurses who remain on hospital floors may have characteristics that set them apart from nurses who leave, including potentially higher starting levels of job satisfaction, knowledge of workplace injury-prevention strategies, and/or general health. A second potential confounder in this cross-sectional analysis may come in the form of a cohort effect, whereby nurses entering the workforce at different times have different starting levels of attitudes and beliefs about their work that persist over time.

The study has limitations. Historically, single-item measurements that use global approaches to job satisfaction have been criticized for being too vague. Unlike a facet approach to measuring job satisfaction (Lu et al., 2012) that parses out individual predictors leading to job satisfaction, global measures of job satisfaction focus on overall appraisal of job satisfaction (Staines & Quinn, 1979). However, single-item measures of unidimensional constructs have been shown to be reliable and valid (Sabbath et al., 2012; Wanous et al., 1997). In addition, findings from our sample may not be generalizable beyond hospital patient care workers. Finally, our survey measured the exposure (in this case, psychosocial factors) and the outcome (job satisfaction) in the same instrument, which has received criticism for common method bias, a type of measurement error that can produce false internal consistency in the data (Chang, Van Witteloostuijn, & Eden, 2010). However, this limitation is endemic to all studies of job satisfaction.

Recommendations and future directions

This study suggests multiple avenues for future research. Administrators would benefit from learning more about the effects of workers' competing roles on job satisfaction, especially if it were then possible to predict the implications of role strain across different age groups. Another area of research might include a greater emphasis on the modifying role of race and ethnicity in healthcare worker job satisfaction, particularly as it varies across age groups (Sabbath et al., 2017).

Our study supports multiple recommendations for human resource departments and, as an extension, Employee Assistance Programs (EAPs) and other occupational well-being professionals. Building on the life-course fit perspective of Moen, Kelly, Tranby, and Huang (2011), we support the strengthening and integration of workplace flexibility policies that contribute to employee empowerment and more empowered work environments for workers of different ages (Cicolini et al., 2014; Laschinger, Finegan, & Shamian, 2001; Spence Laschinger et al., 2009).

Based on our findings, we recommend that EAP professionals stress to managers the importance of encouraging their employees to take breaks for meals and regular rest breaks.

Human resources departments can reinforce these messages by working with floor supervisors to understand why floor staff do not take scheduled breaks and to create policies and messaging based on those findings. Administrators and managers might convene workers of different age cohorts in different occupational roles within their own hospitals in an ongoing advisory committee or research capacity to inform managerial practices (Belicki & Woolcott, 1996). We also suggest policy changes to support scheduling flexibility and work–life fit, with benefits for employee well-being and productivity (Fisher, Jabara, Poudrier, Williams, & Wallen, 2016; Geurts, Beckers, Taris, Kompier, & Smulders, 2009; Hauck, Quinn Griffin, & Fitzpatrick, 2011; Shain, 1996).

As the demographics of the health care workforce continue to evolve, it is more pertinent than ever to understand the evolving needs of workers of all ages and career stages. Therefore, improving job satisfaction of the age-diverse workforce must be treated as a research and practice priority.

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