

Tenderness and Steadiness: Relating Job and Interpersonal Demands and Resources With Burnout and Physical Symptoms of Stress in Canadian Physicians¹

RAYMOND T. LEE² AND
BRENDA L. LOVELL

*Department of Business Administration
University of Manitoba
Manitoba, Winnipeg, Canada*

CÉLESTE M. BROTHERIDGE

*Université du Québec à Montréal
Montréal, Québec, Canada*

This study examined the extent to which job and interpersonal demands and resources are associated with burnout and physical symptoms of stress among Canadian physicians. Using the job demands-resources (JD-R) model, we predicted that demands would be more strongly related to emotional exhaustion and physical symptoms, whereas resources would be more strongly related to personal accomplishment and decreased depersonalization. The findings reveal that communication skills and emotional labor contributed to the explained variances beyond workload and work-life conflict (as job demands), as well as autonomy, predictability, and understanding (as job resources). The predictors were differentially associated with the outcome variables in a manner that is consistent with the JD-R model. Implications for physician well-being and improved patient outcomes are discussed.

Physician well-being has generated a great deal of interest and concern since the 1980s. In Canada, the antecedents and outcomes of physician burnout (Lloyd, Streiner, & Shannon, 1994; Richardsen & Burke, 1991) and its prevalence (Boudreau, Grieco, Cahoon, Robertson, & Wedel, 2006; Elit, Trim, Mand-Bains, Sussman, & Grunfeld, 2004; Grunfeld et al., 2000) have garnered increasing attention. In their 2002 survey of physicians from Alberta, Canada, Boudreau et al. (2006) found that 48 to 56% of the respondents were in the advanced phases of burnout. In their 2003 survey of physicians across Canada (Boudreau et al., 2006), nearly 46% of the respondents were found to be in the advanced phases.

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²Correspondence concerning this article should be addressed to Raymond Lee, Department of Business Administration, I. H. Asper School of Business, University of Manitoba, Winnipeg, Manitoba, Canada R3T 5V4. E-mail: raylee@cc.umanitoba.ca

The prevalence rate of physician burnout in Canada (Boudreau et al., 2006) has implications for their physical health (Maslach, 2001). Maslach made an argument that burnout causes physical stress and illness, with physical symptoms most strongly associated with the emotional exhaustion dimension of burnout (Lee & Ashforth, 1990). This linkage demonstrates the importance of including physical symptoms of stress as a relevant outcome of work-related stressors in this study. Our study considered the following stressors: uncertainty in medical practice; managing patients' fears, embarrassments, and suffering (Frankel, 1995); and coping with their own affective reactions (Coulehan, 1995; Gerrity, DeVellis, & Earp, 1990; Wallace & Lemaire, 2007).

Research and anecdotal evidence have suggested that further investigation is needed to understand not just the job stressors (Maslach, 2001), but also the interpersonal stressors that lead to burnout and diminished physical health (Leiter & Maslach, 1988). This is especially important in the case of physicians, who have not been as extensively researched as other healthcare professionals (Schaufeli, 2007). Thus, building on existing theory and research findings (Cordes & Dougherty, 1993; Lee & Ashforth, 1996), we identify job and interpersonal determinants of burnout among physicians from diverse specialties.

Models of Stress and Burnout

Since the early research on burnout, a number of definitions and theories have been proposed (see Cordes & Dougherty, 1993). In the present study, we use Maslach and Jackson's (1986) definition that characterizes *burnout*, first and foremost, by *emotional exhaustion*. As their emotional resources become depleted, healthcare professionals (e.g., physicians) feel unable to give of themselves, which leads to cynical attitudes and detached feelings toward patients, referred to as *depersonalization*. The last aspect of burnout is the tendency toward *negative self-appraisal*, especially in the competencies required to work with others. Burned-out individuals feel unhappy about themselves and are dissatisfied with their level of personal accomplishment.

Based on this tripartite definition, various models of the major determinants of burnout have been proposed. Cherniss (1980) proposed a comprehensive model that considers factors in both the individual and the workplace. At the individual level, predictability, understanding, and control over work events are crucial for bolstering self-efficacy and promoting well-being (McCue, 1982; Tetrick & LaRocco, 1987). At the workplace level, high patient volumes, as well as time and resource constraints, are critical factors. These workplace stressors impact not only job performance, but also affect

one's ability to meet obligations outside of work (i.e., work–life conflict), which, in turn, may undermine well-being (Wallace & Lemaire, 2007).

Golembiewski, Munzenrider, and Stevenson (1986) suggested that burnout develops in phases that vary in configuration and intensity. According to their model, burnout begins and progresses from depersonalization as a way of expressing detached concern, something that may be necessary when interacting with patients (Lief & Fox, 1963). Taken to the extreme, however, depersonalization and cynicism undermine performance, particularly when patients react negatively. This may lead to a diminished sense of personal accomplishment and self-efficacy (Schaufeli, van Dierendonck, & van Gorp, 1996). The combination of cynicism and reduced self-efficacy then leads to emotional strain.

Golembiewski et al. (1986) classified their respondents into one of eight groups based on high–low combinations of scores on Maslach and Jackson's (1986) three burnout dimensions. The results indicated that the groups differed significantly in their perceptions of job characteristics and levels of satisfaction with various aspects of work. Burke and Deszca (1986) found that diminished emotional and physical well-being was associated with advanced stages of burnout among police officers. More recently, in applying this phase model to physicians, Boudreau et al. (2006) found that a significant number of their study participants were in the advanced stages of burnout.

Leiter and Maslach (1988) proposed an alternative model in which burnout begins with emotional exhaustion, rather than depersonalization. According to their model, role-related stressors (i.e., role overload, role conflict, role ambiguity, lack of control), as well as stressors from interpersonal contacts with patients with significant problems, are most strongly associated with emotional exhaustion (see Leiter, 1993). These stressors collectively represent demands that tax the emotional and physical resources of workers (cf. Demerouti, Bakker, Nachreiner, & Schaufeli, 2000). In contrast, resources such as social support and skill utilization are most strongly associated with personal accomplishment (Leiter, 1993). In support of Leiter and Maslach's model, job and interpersonal demands and resources were found to be associated differentially with the three burnout dimensions (Lee & Ashforth, 1996; see Cordes & Dougherty, 1993).

Job Demands–Resources Model

This dovetails with propositions made by Demerouti et al. (2000) that are grounded in the job demands–resources (JD-R) model. According to this model, burnout stems from two processes: (a) the effort required to meet demands; and (b) the resources that facilitate goal attainment (Bakker &

Demerouti, 2007). Specifically, demands are related to emotional exhaustion, whereas inadequate resources are related to disengagement from work. Demerouti and colleagues (Bakker, Demerouti, Taris, Schaufeli, & Schreurs, 2003; Demerouti et al., 2000) found support for this model. In particular, Demerouti et al. showed that energy depletion was driven by high demands and predicted emotional exhaustion, whereas the erosion of motivation was driven by a lack of resources and predicted depersonalization. Schaufeli and Bakker (2004) found that resources were related to engagement (as the opposite of depersonalization), whereas both demands and inadequate resources increased burnout. In healthcare settings, demands include high patient volumes, intense patient interactions, role conflict, and ambiguity. Resources include support from patients and a sense of autonomy (Schaufeli, 2007). Stressors such as heavy workload and time constraints have been found to correlate higher with burnout than have difficult patient relations (Smith & Zimny, 1988).

In the case of physicians, burnout develops from emotional overload, lack of patient reciprocity, and emotional contagion (Schaufeli, 2007). When the effort put into relationships with patients exceeds what is received in return, an imbalance occurs, which leads to emotional exhaustion (Schaufeli et al., 1996; Smets, Visser, Oort, Schaufeli, & De Haes, 2004). *Emotional contagion* develops when physicians perceive the symptoms of burnout in their colleagues and subconsciously take on these symptoms or when they cognitively “tune in” to the emotions of colleagues and patients, especially while expressing empathetic concern (McKay & Morgan, 1998; Miller, Birkholt, Scott, & Stage, 1995).

Although the JD-R model applies to burnout, it can also be extended to physical symptoms of stress (Bakker & Demerouti, 2007; Burke & Deszca, 1986). As noted previously, Maslach (2001) called for more studies that link burnout with mental and physical symptoms of stress and illness (e.g., Lee & Ashforth, 1990). If stressors cause such mental and physical symptoms, as they do burnout, then the JD-R framework can offer insight into how demands and resources act as determinants of these symptoms. As noted earlier, Maslach’s review indicated that the physical health outcomes were associated most closely with the emotional exhaustion dimension of burnout, with both being indicative of energy depletion as a result of excessive job and interpersonal demands. In contrast, depersonalization and diminished accomplishment, the other two burnout dimensions, are indicative of disengagement from one’s work role.

Hence, the JD-R model (Bakker & Demerouti, 2007; Demerouti et al., 2000) serves to inform our hypotheses regarding the effects of job and interpersonal demands and resources. The rationale for our hypotheses will be discussed, and the predicted linkages are shown graphically in Figure 1.

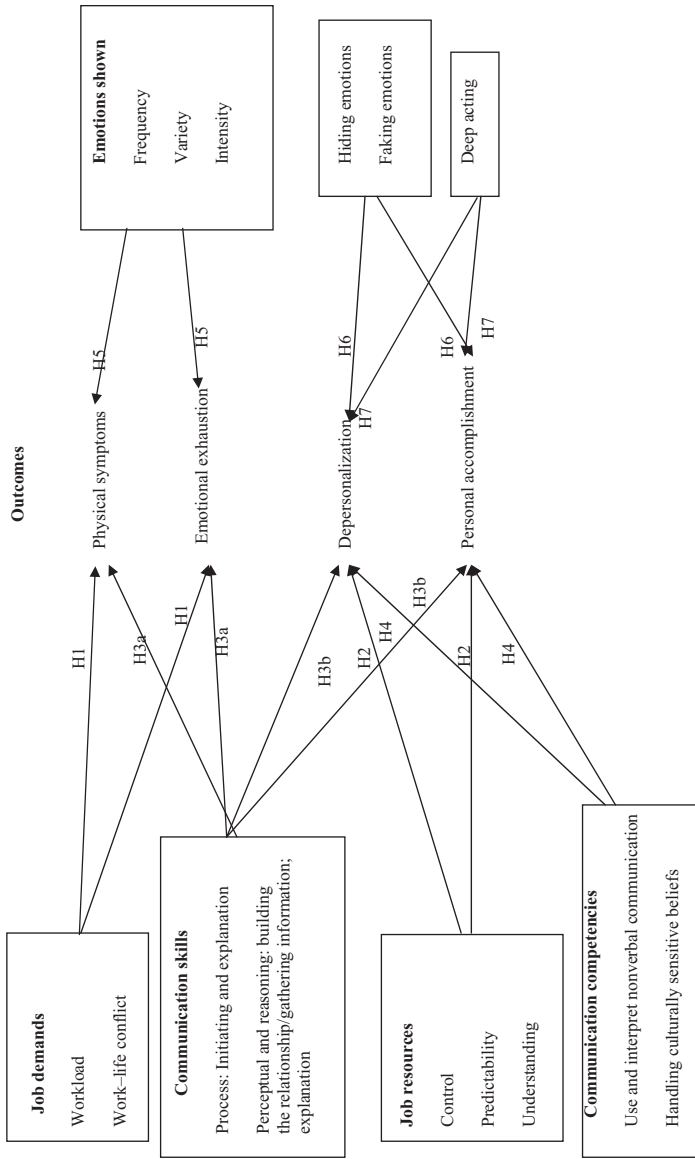


Figure 1. Model of the hypothesized relationships.

Job Demands and Resources

Among job demands, a heavy workload has been shown to be a robust correlate of emotional exhaustion (Lee & Ashforth, 1996), especially among healthcare providers (Miller, Ellis, Zook, & Lyles, 1990; see Schaufeli, 2007). Among U.K. physicians, workload and work–life conflict were the strongest predictors of job stress and decreased well-being (Ramirez, Graham, Richards, Cull, & Gregory, 1996; Wallace & Lemaire, 2007). Also among U.K. physicians, poor management and inadequate resources contributed to job stress, whereas autonomy helped to mitigate such negative effects (Ramirez et al., 1995). Among U.S. physicians, collegial support and control over workplace and administrative issues were negatively associated with job stress, whereas time pressures were positively associated with stress (Williams et al., 2002). Greater resources and autonomy decreased stress levels and increased job satisfaction.

Physicians face uncertainty as a result of incomplete or ambiguous information and must cope with the accompanying anxieties (McCue, 1982). Decreased opportunities to understand and predict work events deepen burnout (Cherniss, 1980), whereas opportunities to understand, predict, and control such events lessen the negative impact of stress (Tetrick & LaRocco, 1987). Based on previous research, we posit the following:

Hypothesis 1. Workload and work–life conflict, as job demands, will be positively associated with emotional exhaustion and physical symptoms.

Hypothesis 2. Autonomy, understanding, and predictability, as job resources, will be negatively associated with depersonalization and positively associated with personal accomplishment.

Interpersonal Demands and Resources

Patient communications. To date, a handful of studies have examined how patient communications explain burnout and stress in healthcare professionals. In a study of service providers at a U.S. psychiatric hospital, Miller, Stiff, and Ellis (1988) found that showing empathetic concern was associated with communication responsiveness, which, in turn, was negatively associated with depersonalization and diminished personal accomplishment. Ramirez et al. (1995) found that oncologists who felt inadequately trained in communication skills experienced greater depersonalization and diminished personal accomplishment than did those who felt the training to be adequate.

Although the ability to communicate understanding should lessen burnout, such a skill requires showing a positive regard toward patients. However, a lack of positive regard from patients toward the physician contributes to burnout (Schaufeli et al., 1996). This asymmetry adds to the pressure to listen actively, say the right things, and involve patients in the decision-making process (Silverman, Kurtz, & Draper, 2005).

For physicians, patient communications center on the medical interview (Silverman et al., 2005) that requires process skills (how to), as well as reasoning and perceptual skills (thinking and feeling). In JD-R terms (Demerouti et al., 2000), process skills require psychomotor, cognitive, and affective efforts, which together represent *interpersonal demands*. Reasoning and perceptual skills involve clinical reasoning and problem solving, which again require psychomotor, cognitive, and affective efforts that represent interpersonal demands. Possessing both sets of skills, however, also represents *interpersonal resources* that can be used to facilitate communications (Schaufeli, 2007).

Depending on workload and the ability to control work events, these skills may be perceived as either demands or resources (Wallace & Lemaire, 2007). Physicians with heavy patient volumes, time constraints, and limited autonomy may be more inclined to view these skills as demands, whereas those with the opportunity to apply such skills may view them as resources. Hence, two different predictions are suggested. As interpersonal demands, both skills contribute to emotional fatigue and stress; but as interpersonal resources, they contribute to greater engagement and a sense of self-efficacy. Thus, we posit two competing hypotheses:

Hypothesis 3a. Process skills, as well as reasoning and perceptual skills, will be positively associated with emotional exhaustion and physical symptoms.

Hypothesis 3b. Process skills, as well as reasoning and perceptual skills, will be negatively associated with depersonalization and will be positively associated with personal accomplishment.

Communications also require competent use of verbal and nonverbal means of expression, and handling culturally sensitive issues (Shapiro, Hollingshead, & Morrison, 2002). These competencies represent interpersonal resources that facilitate communications, and increase engagement with patients and self-motivation (Bakker & Demerouti, 2007; Schaufeli, 2007). Hence, we posit the following:

Hypothesis 4. Competencies in handling culturally sensitive beliefs and using and interpreting nonverbal communications

will be negatively associated with depersonalization and will be positively associated with personal accomplishment.

Emotional labor. During patient interactions, it is important to show the appropriate emotions and to express empathetic concern (Silverman et al., 2005). This requires the use of emotional labor (EL; Larson & Yao, 2005; Persaud, 2004; cf. Mann, 2005), whereby one must “induce or suppress feelings [through] observable facial and bodily displays” (Hochschild, 1983, pp. 6–7). EL can be enacted through *deep acting*, where displayed emotions are felt, or through *surface acting*, where displayed emotions are simulated and real feelings are suppressed (Hochschild, 1983).

Physicians may need to fake positive emotions as a means of eliciting desirable responses from patients (Mann, 2005; Persaud, 2004; Zapf, 2002). In contrast, physicians must suppress negative emotions, particularly in response to patients’ expressed feelings or behaviors during consultation and treatment. Hiding certain emotions protects both parties’ interests, particularly when negative feelings arise (Smets et al., 2004; Smith & Zimny, 1988). Smith and Zimny found that physicians reacted negatively when patients threatened their integrity and self-esteem or made unreasonable treatment demands. They felt obligated to mask undesirable feelings and to express only those that maintained the appearance of civility during patient discourse (see Silverman et al., 2005).

Given that frequent and intense interactions are believed to be associated with emotional exhaustion (Cordes & Dougherty, 1993), physicians who display a variety of emotions frequently and intensely are more susceptible to stress and fatigue. In Mann’s (2005) model of EL, emotion-inducing events (e.g., uncertainties in treatment, unreasonable patient demands, handling patient emotions) lead to either *emotional conflict*, where providers experience feelings contrary to patients’ expectations, or *emotional harmony*, where emotions are in accordance with expectations, but are experienced too intensely. Either emotional conflict or emotional harmony will trigger the suppression of unwanted or inappropriate emotions and will replace them with the expression of desirable ones. The negative consequences of EL stem from the inherent dissonance of surface acting (Hochschild, 1983; Zapf, 2002) and include diminished self-esteem and heightened cynicism (Ashforth & Humphrey, 1993).

The key is knowing when and how to express and feel certain emotions to facilitate therapeutic relations with patients (Miller et al., 1988, 1995; Silverman et al., 2005). Brotheridge and Lee (2002) found that surface acting was positively associated with depersonalization, whereas deep acting (i.e., the alignment of expressed and felt emotions) was negatively associated with depersonalization and was positively associated with

personal accomplishment. Although EL is interpersonally demanding (Schaufeli, 2007), surface and deep acting have differential effects on therapeutic relations with patients and, consequently, on burnout and stress. Hence, we posit the following:

Hypothesis 5. The frequency, intensity, and variety of emotions shown will be positively associated with emotional exhaustion and physical symptoms.

Hypothesis 6. Surface acting, in the form of faking unfeared emotions and hiding felt ones, will be positively associated with depersonalization and will be negatively associated with personal accomplishment.

Hypothesis 7. Deep acting will be negatively associated with depersonalization and will be positively associated with personal accomplishment.

Method

Procedure

Data for this research were collected in Fall 2006 in a Canadian prairie province. Questionnaires were distributed by the provincial medical association's bimonthly newsletter to its members and by a direct mail-out by the researchers to the work addresses obtained from the college of physicians and surgeons' public-access website. The questionnaire's cover letter stated that the purpose of the study was to examine how physicians interact and communicate with patients, and cope with the demands of medicine. Survey responses were mailed to the second author's university mailing address.

By the end of the data-collection period, 310 of the population of 2,218 physicians had responded. The 14.0% response rate is attributable to using the mail-out method and to the fact that the university health research ethics board did not grant permission to send follow-up reminders. Our response rate is comparable to those of other mail-out surveys to Canadian physicians. In a study sponsored by *Maclean's* magazine and *The Medical Post*, Hawaleshka (2003) reported a 15.9% response rate in a 2003 mail-out survey of 3,500 family physicians across Canada. Similarly, Boudreau et al. (2006) reported a response rate of 17.6% in their Alberta sample, even after three follow-up reminders were sent by mail and another was published in the members' monthly newsletter. These researchers noted that their response rate compared favorably with those found in two other physician survey studies conducted in that province.

Given our response rate, and following Boudreau et al.'s (2006) procedure, we compared the sample and the physician population in the province in terms of the proportional representation of gender, location, and specialty. Table 1 shows that the sample was 40% female, compared to 30% of the population; 80% urban, compared to 75% of the population; and 40% family medicine, compared to 51% of the population. For the remaining three most popular specialties (i.e., internal medicine, pediatric, and surgical disciplines), the differences ranged from 2% to 8%. To check for response bias based on institutional affiliation, we compared the two subsamples on the proportional representation of gender, location, and specialties and on the means of the study variables, with no significant differences found for any variable.

Study Participants

Of the 310 respondents, 32 returned questionnaires that were unusable for various reasons (e.g., no longer practiced in the province, retired, served as an administrator not involved in direct care, extensive missing responses). This left 278 usable questionnaires, of which 53% were from members of the provincial medical association and 47% were from members of the college of physicians and surgeons. Respondents' mean number of years in practice was 16.5 ($SD = 11.1$); the mean percentage of time spent in patient care was 68% ($SD = 24\%$); and the mean number of minutes spent per patient was 19.0 ($SD = 14.8$).

Respondents were classified by specialty using an inductive approach. The physicians provided 33 distinct job descriptions, which were grouped into 10 specialties, with reference to the categories used in Aasland, Olef, Falkum, Schweder, and Ursin (1997): family medicine ($n = 110$), internal medicine ($n = 51$), pediatric disciplines ($n = 30$), surgical disciplines ($n = 20$), residents ($n = 20$), psychiatry ($n = 19$), anesthesiology ($n = 10$), obstetrics/gynecology ($n = 9$), public health/administration ($n = 8$), and lab medicine ($n = 2$). Specialties with 10 or fewer members were merged, resulting in the following classifications: anesthesiology being grouped with internal medicine ($n = 61$); obstetrics/gynecology being grouped with surgical disciplines ($n = 29$); and public health/administration being grouped with lab medicine (labeled as "other specialties," $n = 10$). We asked two local physicians to review our classifications for face validity, and they found them to be satisfactory.

Measures

Burnout and physical symptoms of stress. The dimensions of emotional exhaustion (9 items), depersonalization (5 items), and personal accomplishment (8 items) were measured with the Maslach Burnout Inventory

Table 1

Comparisons Between Population and Sample

	Population (N = 2218)		Sample (n = 310; 14% of population)	
	Frequency	Percentage	Frequency	Percentage
Returned surveys				
Usable			279	90
Unusable			31	10
Institution				
College of Physicians and Surgeons of [province]			131	47
[Provincial] Medical Association			148	53
Location				
Urban	1663	75	222	80
Rural	555	25	54	20
Gender				
Male	1553	70	166	60
Female	665	30	112	40
Practice specialties				
Family medicine	1129	51	110	40
Others (combined)	1089	49	168	60
Internal medicine	217	10	51	18
Pediatrics	134	6	30	11
Surgical	112	5	20	7

Note. The population statistics are from the College of Physicians and Surgeons of [Province], as of April 1, 2006. The percentage is a proportion of the total within the category.

(Maslach & Jackson, 1986). Respondents rated how often each statement occurred during a typical week. The physical symptoms of stress were measured using Patchen's (1970) four-item physical symptoms scale. Respondents rated how often each of the following symptoms of stress was experienced in a typical week: headaches, upset stomach, gas or bloated feeling, and trouble getting to sleep.

Job demands and resources. To measure job demands and resources, we used Caplan, Cobb, French, Van Harrison, and Pinneau's (1975) nine-item workload scale. Respondents rated each activity using the question stem "On a typical day, how much time do you have for each activity," which was followed by such anchors as "workload," "amount of things that need to be done," and "number of patients."

We also used Caplan et al.'s four-item work-life conflict scale (e.g., "The days and hours you work interfere with the time you spend with your family or friends," "Your personal life off the job is disrupted by the demands of your job"). In addition, we used Tetrick and LaRocco's (1987) three-item understanding scale and three-item predictability of work events scale, as well as Beehr's (1976) four-item autonomy scale. For the work-life conflict, understanding, predictability, and autonomy items, respondents indicated the extent to which each statement had been experienced.

Because these measures have established psychometric properties, we performed a confirmatory factor analysis (CFA), with the items of each scale being constrained to load onto their separate factors. The fit with the model was not strong (i.e., the overall fit indexes were approximately .80, the root mean square error of approximation [RMSEA] was .08, and the factor loadings were .40 or higher). Nevertheless, the fit was considered to be adequate in showing that the variables were distinct from each other. The five factors were moderately interrelated, with the absolute values of the correlations ranging from .03 to .39 (mean $r = .22$). The uneven intercorrelations likely accounted for the degree of fit that was observed in the model.

Communications. We used Shapiro et al.'s (2002) Cross-Cultural Doctor-Patient Communication Needs Assessment to measure communication skills. In Part A, respondents rated their competency levels in dealing with various sociocultural issues. A principal components analysis (PCA) with varimax rotation yielded two interpretable factors with items loading .40 or higher: (a) using and interpreting nonverbal communications (5 items); and (b) handling culturally sensitive beliefs (3 items).

In Part B, respondents indicated how often each of 21 behaviors was used to facilitate communications, followed by how useful each was for improving communications. Using PCA with varimax rotation, two interpretable factors with items loading .40 or higher were found for process skills: (a) initiation of the session (6 items); and (b) explanation (6 items). Using PCA

with varimax rotation, two interpretable factors with items loading .40 or higher were also found for reasoning and perceptual skills: (a) building the relationship and information gathering (10 items); and (b) explanation (5 items). The absolute values of the correlations among the six derived scales ranged from .14 to .68 (mean $r = .39$).

Emotional labor. We used the revised version of Brotheridge and Lee's (2003) Emotional Labour Scale (ELS; Lee & Brotheridge, 2006) to measure six scales (3 items each). Respondents were presented with the stem "On a typical day, how frequently do you perform such behavior?" and were asked to indicate *emotions shown*, *intensity of emotions shown*, and *variety of emotions shown*, as well as the enactment of *faking* (i.e., "Showing emotions that I don't feel"), *hiding* (i.e., "Hide my true feelings about a situation"), and *deep acting* (i.e., "Try to actually experience the emotions that I must show"). An additional item from the ELS regarding the mean number of minutes spent per patient was not included in the regression analyses but was used for descriptive purposes.

Because the ELS had established psychometric properties (see the validation findings of Brotheridge & Lee, 2003), we performed a CFA, with the items of each scale being constrained to load onto their separate factors. The data strongly fit the model (i.e., overall indexes were .90 or higher, RMSEA was .06, and factor loadings were .40 or higher), with the six factors moderately interrelated. The absolute values of the correlations among the six scales ranged from .00 to .57 (mean $r = .24$).

Estimates of scale reliability were calculated with Cronbach's alphas and are shown in Table 2. With two exceptions, all of the measures had alphas of .70 or higher.

Analyses

We used hierarchical regressions to test the hypotheses. For each of the four outcomes, the job demands and resources were entered in Step 1. Our major interest was determining whether the interpersonal demands and resources of communication and EL, entered in Step 2, would explain burnout and physical symptoms over and above the Step 1 predictors. The R^2 and beta weights of the full models were interpreted.

Results

Table 2 shows the descriptive statistics and correlations among all variables. The means for emotional exhaustion and depersonalization were

Table 2
Means, Reliability Estimates, and Correlations Among Study Variables

Variable	M	SD	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	
1. Emotional exhaustion	2.44	0.72	.91																					
2. Depersonalization	1.82	0.58	.50	.73																				
3. Personal accomplishment	3.74	0.39	-.38	-.41	.72																			
4. Physical symptoms	1.62	0.61	.47	.23	-.36	.59																		
5. Workload	3.22	0.57	.22	.13	.01	.07	.71																	
6. Work-life conflict	3.17	1.03	.54	.34	-.18	.31	.33	.86																
7. Understanding	3.21	0.78	-.16	-.22	.27	-.09	.13	-.05	.68															
8. Predictability	3.07	1.03	-.34	-.22	.15	-.21	-.34	-.39	-.03	.84														
9. Autonomy	3.51	0.86	-.28	-.28	.30	-.24	-.14	-.31	.31	.17	.83													
10. Building rel./gathering info.	4.44	0.48	-.07	-.15	.29	-.01	.06	-.09	.15	-.07	.05	.86												
11. Explaining	4.09	0.68	-.06	-.10	.28	-.04	.09	-.05	.16	-.15	.04	.68	.82											
12. Process explanation	3.95	0.66	-.09	-.16	.28	-.03	.03	-.15	.11	-.04	.03	.46	.61	.76										
13. Process initiating	4.51	0.45	-.09	-.23	.30	.03	.07	-.10	.12	-.12	.03	.59	.38	.56	.78									
14. Handling sensitive beliefs	3.15	0.83	-.10	-.10	.28	-.06	.03	-.08	.18	.11	.00	.14	.32	.38	.16	.78								
15. Using nonverbal communication	3.43	0.61	-.11	-.12	.30	-.13	.07	-.17	.16	.06	.00	.14	.25	.39	.23	.53	.81							
16. Frequency of emotions	3.51	0.74	.19	.07	.12	.08	.10	.20	.14	-.07	-.12	.24	.28	.33	.21	.14	.05	.69						
17. Intensity of emotions	2.33	0.87	.14	.10	-.01	.21	.14	.19	.01	-.24	-.08	.11	.10	.15	.09	.09	.03	.28	.95					
18. Variety of emotions	2.93	1.02	.12	-.07	.12	.09	.15	.08	.14	-.06	.08	.18	.19	.24	.21	.21	.13	.44	.38	.95				
19. Deep acting	2.49	1.04	.02	.09	.05	.14	.11	.07	.10	-.07	-.08	.03	.11	.20	.12	.19	.15	.30	.18	.32	.87			
20. Faking emotions	1.91	0.83	.33	.46	-.27	.25	.10	.29	-.20	-.04	-.32	-.10	-.04	.02	-.10	.07	-.04	.24	.14	.12	.29	.77		
21. Hiding emotions	2.86	0.73	.40	.40	-.25	.22	.13	.34	-.12	-.14	-.25	-.08	-.01	-.03	-.09	-.01	-.13	.21	.05	.00	.04	.57	.71	

Note. $N = 278$. Cronbach's alphas appear on the main diagonal. $rs \cong$ absolute value of .12, $p < .05$; $rs \cong$ absolute value of .16, $p < .01$. Building rel./gathering info. = building relationship/gathering information.

below the scale midpoint of 3. The mean for personal accomplishment was above the midpoint. The respondents thus experienced moderate levels of burnout.

For physical symptoms, the mean was more than 1 point below the midpoint, suggesting that respondents experienced low to moderate symptoms of stress. Despite the low to moderate means, the four outcomes had sufficiently large variances to overcome any range restrictions that could have attenuated the effects of the predictors. In addition to the burnout dimensions being interrelated, physical symptoms were significantly associated with all three dimensions, especially emotional exhaustion ($r = .47, p < .001$).

Table 3 shows the incremental and total explained variance of the regression equations. Across all four outcomes, the job demands and resources as a block were significant predictors at Step 1, with the explained variance ranging from .11 to .35. Communication skills and EL as a block were all significant predictors at Step 2, with the incremental explained variance ranging from .08 to .25. The total explained variance was significant, ranging from .23 to .43.

Table 3 shows the beta weights with all predictors entered for the four outcomes. Given the number of predictors considered, we checked the regressions for whether (a) any beta weight was significant while its corresponding zero-order correlation was not, suggesting a situation of classical suppression; or (b) any of the beta weights and their corresponding zero-order correlations were both significant, but opposite in signs, suggesting a situation of net suppression (Cohen & Cohen, 1983). Classical suppression occurred in the relationship between the frequency of emotions and physical symptoms. However, with the absence of net suppression, multicollinearity was not an issue in the interpretation of the regression weights across the four outcomes.

Hypothesis 1, predicting that demands would be positively related to emotional exhaustion and physical symptoms, received support. Workload and work–life conflict were positively associated with emotional exhaustion, and work–life conflict was positively associated with physical symptoms.

Hypothesis 2, predicting that resources would be negatively associated with depersonalization and positively associated with personal accomplishment, received support. Predictability was negatively associated with depersonalization and positively associated with personal accomplishment. As well, autonomy was positively associated with personal accomplishment. However, both understanding and predictability were negatively associated with emotional exhaustion, and autonomy was negatively associated with physical symptoms.

Hypothesis 3a, predicting that communication skills would be positively associated with emotional exhaustion and physical symptoms, was not

Table 3

Regression Results (β) for the Four Outcomes

Variable	Emotional exhaustion		Depersonalization		Personal accomplishment		Physical symptoms	
	Step 1	Step 2	Step 1	Step 2	Step 1	Step 2	Step 1	Step 2
Job demands and resources								
Workload	.10†	.11†	.04	.06	.08	.03	-.03	-.05
Work-life conflict	.48***	.38***	.25***	.10	-.13	.03	.26***	.19*
Predictability	-.10	-.13†	-.11	-.13†	.07	.13†	-.01	-.01
Autonomy	-.06	.00	-.11	-.02	.19*	.22***	-.17*	-.12†
Understanding	-.11†	-.11†	-.12	-.07	.12	.01	-.02	.01
Patient communications								
Process skills: Initiating the session		-.14†		-.23***		.21**		.02
Process skills: Explanation		.05		-.09		-.06		.05
Reasoning/perceptual skills: Explanation		-.12		-.01		.17†		-.21†
Reasoning/perceptual skills: Building rel./gathering info.		.08		-.05		.05		.13
Handling culturally sensitive beliefs		.01		.00		.12		-.09
Use and interpret nonverbal communication		.02		.09		.16*		.01
Emotional labor								
Frequency of showing emotions		.09		.00		.11		-.16†
Variety of emotions shown		.02		-.14*		-.07		.09
Intensity of emotions shown		-.02		.07		.08		.07
Hiding emotions		.19*		.08		-.08		.20*
Faking emotions		.08		.30***		-.17†		.11
Deep acting		-.07		.08		.01		.11
Total R ²	.35***	.43***	.16**	.39**	.11**	.36**	.12*	.23*
ΔR ²		.08*		.23**		.25**		.11*

Note. Building rel./gathering info. = building relationship/gathering information.
 †p < .10. *p < .05. **p < .01. ***p < .001.

supported. Contrary to prediction, the process skills of initiating the session were negatively associated with emotional exhaustion, and the reasoning and perceptual skills of explanation were negatively associated with physical symptoms.

Hypothesis 3b, predicting that communication skills would be negatively associated with depersonalization and positively associated with personal accomplishment, received support. Specifically, the process skills of initiating the session were negatively associated with depersonalization and positively associated with personal accomplishment. Reasoning and perceptual skills of explanation were also positively associated with personal accomplishment.

Hypothesis 4, predicting that possessing competencies in patient communications would be negatively associated with depersonalization and positively associated with personal accomplishment, received partial support. Specifically, using and interpreting nonverbal communications were positively associated with personal accomplishment.

Hypothesis 5, predicting that the frequency, variety, and intensity of emotions shown would be positively associated with emotional exhaustion and physical symptoms, was not supported. Instead, showing a variety of emotions was negatively associated with depersonalization. Contrary to prediction, showing frequent emotions was negatively associated with physical symptoms, but, as noted previously, this effect can be explained by classical suppression.

Hypothesis 6, predicting that faking and hiding of emotions would be positively associated with depersonalization and negatively associated with personal accomplishment, received partial support. Specifically, faking was positively associated with depersonalization and negatively associated with personal accomplishment. However, hiding was positively associated with both emotional exhaustion and physical symptoms. Finally, Hypothesis 7, predicting that deep acting would be negatively associated with depersonalization and positively associated with personal accomplishment, was not supported.

Discussion

Our study has made two major contributions: We showed that (a) interpersonal demands and resources explained burnout and stress over and above job demands and resources; and (b) the relationships were partially supportive of the JD-R model (Bakker & Demerouti, 2007; Demerouti et al., 2000), as applied to physicians (Schaufeli, 2007). Our findings extend the JD-R framework in showing how interpersonal demands and resources were linked to physical symptoms of stress, which, in turn, were associated with

burnout (Maslach, 2001; cf. Lee & Ashforth, 1990). Finally, consistent with Williams and colleagues (Williams et al., 2002; Williams, McMurray, Baier-Manwell, Schwartz, & Linzer, 2007), our study has implications for physician well-being, as well as the delivery of quality patient care.

Interpretation of Findings

Our findings lend some support for the dual-process theory in that demands relate to emotional exhaustion, and resources relate to depersonalization and personal accomplishment, supporting earlier studies (Bakker et al., 2003; Demerouti et al., 2000). They are also consistent with Schaufeli and Bakker's (2004) observation that demands and resources are mutually reinforcing, where demands tap into resources, and, conversely, resources are tools used to meet demands. This was evident in how the interpersonal resources of process skills and reasoning and perceptual skills, along with competencies to manage sociocultural issues, were associated with the interpersonal demands of EL (see Table 2). Our findings also reveal that both job and interpersonal demands and resources predicted emotional exhaustion and physical symptoms, which fit with Schaufeli and Bakker's findings.

Regarding job demands, workload was a predictor of emotional exhaustion, consistent with the JD-R model and with Lee and Ashforth's (1996) meta-analysis findings. Also, in support of the JD-R model, work-life conflict was a strong predictor of emotional exhaustion and physical symptoms, suggesting that well-being was adversely affected when juggling multiple roles (Wallace & Lemaire, 2007; Williams et al., 2002). Our findings support Mesmer-Magnus and Viswesvaran's (2005) meta-analytic review, which found that job requirements that impeded performance in the family domain negatively influenced health outcomes.

As for resources, a sense of autonomy was positively associated with personal accomplishment, consistent with Lee and Ashforth's (1996) findings, and negatively associated with physical symptoms. Predictability was positively associated with personal accomplishment, and negatively associated with emotional exhaustion and depersonalization. Thus, the uncertainties inherent in medicine that contributed to burnout (Cherniss, 1980; Gerrity et al., 1990; McCue, 1982) were offset by opportunities to predict and control work events (Bakker & Demerouti, 2007; Tetrick & LaRocco, 1987).

Regarding communications, using and interpreting nonverbal communications bolstered self-efficacy. As an important aspect of patient communications, physicians are often required to be understanding and responsive to sociocultural sensibilities and needs (Lutz & White, 1986; Shapiro et al., 2002). In our study, the process skills for developing rapport served as a

resource, given that their use lessened emotional fatigue and disengagement while bolstering self-efficacy. Believing that skills in providing explanations to patients to be helpful was another resource that lessened physical symptoms while bolstering self-efficacy, suggesting respondents' willingness to use such skills (Leiter, 1993).

The quality of patient interactions was also influenced by the extent to which physicians expressed certain emotions and suppressed others. EL, in turn, affected physicians' well-being. Hiding emotions increased levels of emotional exhaustion and physical symptoms. Indeed, consistent with the JD-R explanation, this suppression was an avoidance strategy designed to reduce emotional demands. Further, the greater frequency of hiding ($M = 2.86$), relative to faking ($M = 1.91$) and deep acting ($M = 2.49$), suggests that emotional suppression required the most effort to prevent "leakage" in facial expressions and body language (Lutz & White, 1986; Wijesinghe, 2001), as well as to reconcile the conflict inherent in deliberative dissonance acting (Mann, 2005; Zapf, 2002). Faking, the least frequently used dimension of EL in our study, encouraged unhealthy detachment (Coulehan, 1995), which also diminished personal efficacy.

In contrast, respondents who showed a variety of emotions had decreased levels of depersonalization, which would have encouraged favorable patient responses and reciprocity (Miller et al., 1995; Smets et al., 2004). Expressing the appropriate positive (e.g., empathetic concern) and negative (e.g., disappointment) emotions may have also facilitated adherence to treatment plans (Frankel, 1995; Larson & Yao, 2005) and improved patient outcomes (Williams et al., 2007). The frequent expression of emotions reduced physical symptoms, suggesting a beneficial impact on physicians (Mann, 2005). Showing heartfelt emotions, in the form of deep acting, was unrelated to any of the outcomes, since deliberate dissonance acting did not occur (Zapf, 2002; cf. Mann, 2005).

Limitations and Implications

The limitation of low response rate, although typical among physicians when responding to mail-in surveys (Boudreau et al., 2006; Hawaleshka, 2003), was partly a result of the inability to conduct follow-up reminders. Nevertheless, we demonstrated sample representativeness to the population on gender, practice location, and specialties. We also did not ask about the respondents' age and spousal situation, although both may have been associated with burnout and stress (Cordes & Dougherty, 1993; Schaufeli, 2007).

Several other issues should be addressed in future studies. First, research should assess the specific emotions expressed by physicians that may have

influenced patients' receptivity, independent of what was communicated (Silverman et al., 2005). Second, assessing patients' perspective of the physician-patient relationship (e.g., Frankel, 1995) would overcome the method bias of single-source data. Third, the use of objective measures (e.g., compliance behaviors) would expand the test of the JD-R model (Bakker & Demerouti, 2007) and shed light on the behavioral and health consequences of burnout (Cordes & Dougherty, 1993; Maslach, 2001). Last, causal inference could not be drawn, given our cross-sectional design (Taris, Le Blanc, Schaufeli, & Schreurs, 2005). For example, EL was treated as a burnout antecedent, but the sequence of detachment to faking is also plausible (Mann, 2005).

Our findings have health human resource implications. First, the management of emotions during interactions with patients of diverse sociocultural backgrounds deserves concerted attention (Shapiro et al., 2002). Such self-regulation also reduces the likelihood of unhealthy detachment from overly demanding or noncompliant patients (Frankel, 1995; McCue, 1982; Smith & Zimny, 1988). The key is knowing when and how to suppress negative feelings and to express positive ones (Mann, 2005; Zapf, 2002).

Second, training in verbal and nonverbal communication skills (Silverman et al., 2005) would strengthen the ability to show empathetic concern to patients of diverse backgrounds (Larson & Yao, 2005; Mann, 2005). Also necessary is training in handling culturally sensitive beliefs (Lutz & White, 1986; Shapiro et al., 2002; Wijesinghe, 2001). Method-acting exercises may help physicians vicariously experience their patients' feelings and motives (Hochschild, 1983; Larson & Yao, 2005) and facilitate appropriate responses. As Ramirez et al. (1995) noted, communication skills training not only reduces the risk of burnout, but also contributes to physicians' satisfaction with their practice, which, in turn, positively impacts patient outcomes.

The conflict between cognitions and emotions in modern medicine (Lief & Fox, 1963) reflects the broader tension between personality and culture (Lutz & White, 1986). Thomas Percival encouraged physicians to unite *steadiness*, the rational component of their practice, with *tenderness*, the affective component (Coulehan, 1995). Only then can healthcare professionals be re-energized and re-engaged in the care of patients.

References

- Aasland, O. G., Olef, M., Falkum, E., Schweder, T., & Ursin, H. (1997). Health complaints and job stress in Norwegian physicians: The use of an overlapping questionnaire design. *Social Science and Medicine*, 45, 1615-1629.

- Ashforth, B. E., & Humphrey, R. H. (1993). Emotional labor in service roles: The influence of identity. *Academy of Management Review, 18*, 88–115.
- Bakker, A. B., & Demerouti, E. (2007). The job-demands resources model: State of the art. *Journal of Managerial Psychology, 22*, 309–328.
- Bakker, A. B., Demerouti, E., Taris, T., Schaufeli, W. B., & Schreurs, P. J. G. (2003). A multi-group analysis of the job-demands resources model in four home care organizations. *International Journal of Stress Management, 10*, 16–38.
- Beehr, T. A. (1976). Perceived situational moderators of the relationship between subjective role ambiguity and role strain. *Journal of Applied Psychology, 61*, 41–47.
- Boudreau, R. A., Grieco, R. L., Cahoon, S. L., Robertson, R. C., & Wedel, R. J. (2006). The pandemic from within: Two surveys of physician burnout in Canada. *Canadian Journal of Community Mental Health, 25*, 71–88.
- Brotheridge, C. M., & Lee, R. T. (2002). Testing a conservation of resources model of the dynamics of emotional labour. *Journal of Occupational Health Psychology, 7*, 57–67.
- Brotheridge, C. M., & Lee, R. T. (2003). Development and validation of the Emotional Labour Scale. *Journal of Occupational and Organizational Psychology, 76*, 365–379.
- Burke, R. J., & Deszca, E. (1986). Correlates of psychological burnout phases among police officers. *Human Relations, 39*, 487–502.
- Caplan, R. D., Cobb, S., French, J. R. P., Jr., Van Harrison, R., & Pinneau, S. R. (1975). *Job demands and worker health* (U.S. Department of Health, Education, and Welfare, NIOSH Pub. No. 75-160). Washington, DC: U.S. Government Printing Office.
- Cherniss, C. (1980). *Professional burnout in human service organizations*. New York: Praeger.
- Cohen, J., & Cohen, P. (1983). *Applied multiple regression/correlation analysis for the behavioral sciences* (2nd ed.). Hillsdale, NJ: Lawrence Erlbaum.
- Cordes, C. L., & Dougherty, T. W. (1993). A review and an integration of research on job burnout. *Academy of Management Review, 18*, 621–656.
- Coulehan, J. L. (1995). Tenderness and steadiness: Emotions in medical practice. *Literature and Medicine, 14*, 222–236.
- Demerouti, E., Bakker, A. B., Nachreiner, F., & Schaufeli, W. B. (2000). A model of burnout and life satisfaction among nurses. *Journal of Advanced Nursing, 32*, 454–464.
- Elit, A., Trim, K., Mand-Bains, I. H., Sussman, J., & Grunfeld, E. (2004). Job satisfaction, stress, and burnout among gynaecologic oncologists. *Gynecologic Oncology, 94*, 134–139.

- Frankel, R. M. (1995). Emotions and the physician–patient relationship. *Motivation and Emotion, 19*, 163–172.
- Gerrity, M. S., DeVellis, R. F., & Earp, J. A. (1990). Physicians' reactions to uncertainty in patient care: A new measure and new insights. *Medical Care, 28*, 724–736.
- Golembiewski, R. T., Munzenrider, R. F., & Stevenson, J. G. (1986). *Stress in organizations: Toward a phase model of burnout*. New York: Praeger.
- Grunfeld, E., Whelan, T. J., Zitzelsberger, L., Willan, A. R., Montesanto, B., & Evans, W. K. (2000). Cancer care workers in Ontario: Prevalence of burnout, job stress, and job satisfaction. *Canadian Medical Association Journal, 163*, 166–169.
- Hawaleshka, D. (2003, December 8). The doctor is in . . . pain. *Maclean's, 116*(49), 38–40, 42.
- Hochschild, A. R. (1983). *The managed heart: Commercialization of human feeling*. Berkeley, CA: University of California Press.
- Larson, E. H., & Yao, X. (2005). Clinical empathy as emotional labor in the patient–physician relationship. *Journal of the American Medical Association, 293*, 1100–1106.
- Lee, R. T., & Ashforth, B. E. (1990). On the meaning of Maslach's three dimensions of burnout. *Journal of Applied Psychology, 75*, 743–747.
- Lee, R. T., & Ashforth, B. E. (1996). A meta-analytic examination of the correlates of the three dimensions of job burnout. *Journal of Applied Psychology, 81*, 123–133.
- Lee, R. T., & Brotheridge, C. M. (2006, August). Validation and extension of the Emotional Labor Scale: Evidence from day-care workers. Paper presented at the International Conference on Emotions and Work–Life, Atlanta, GA.
- Leiter, M. P. (1993). Burnout as a developmental process: Consideration of models. In W. Schaufeli, C. Maslach, & T. Marek (Eds.), *Professional burnout: Recent developments in theory and research* (pp. 237–250). Washington, DC: Taylor & Francis.
- Leiter, M. P., & Maslach, C. (1988). The impact of interpersonal environment on burnout and organizational commitment. *Journal of Organizational Behavior, 9*, 297–308.
- Lief, H. I., & Fox, R. C. (1963). Training for “detached concern” in medical students. In H. I. Lief, V. F. Lief, & N. R. Lief (Eds.), *The psychological basis of medical practice* (pp. 12–35). New York: Harper & Row.
- Lloyd, S., Streiner, D., & Shannon, S. (1994). Burnout, depression, life, and job satisfaction among Canadian emergency physicians. *Journal of Emergency Medicine, 12*, 559–565.
- Lutz, C., & White, G. M. (1986). The anthropology of emotions. *Annual Review of Sociology, 15*, 405–436.

- Mann, S. (2005). A health-care model of emotional labour: An evaluation of the literature and development of a model. *Journal of Health Organization and Management, 19*, 304–317.
- Maslach, C. (2001). What have we learned about burnout and health? *Psychology and Health, 16*, 607–611.
- Maslach, C., & Jackson, S. E. (1986). *Maslach Burnout Inventory: Manual* (2nd ed.). Palo Alto, CA: Consulting Psychologists Press.
- McCue, J. D. (1982). The effects of stress on physicians and their medical practice. *New England Journal of Medicine, 306*, 458–463.
- McKay, D., & Morgan, D. (1998, August). *Depressed interactions: A meta-analysis*. Paper presented at the 106th annual conference of the American Psychological Association, San Francisco, CA.
- Mesmer-Magnus, J. R., & Viswesvaran, C. (2005). Convergence between measures of work-to-family and family-to-work conflict: A meta-analytic examination. *Journal of Vocational Behavior, 67*, 215–232.
- Miller, K., Birkholt, M., Scott, C., & Stage, C. (1995). Empathy and burnout in human service work. *Communication Research, 22*, 123–147.
- Miller, K. I., Ellis, B. H., Zook, E. G., & Lyles, J. S. (1990). An integrated model of communication, stress, and burnout in the workplace. *Communication Research, 17*, 300–326.
- Miller, K. I., Stiff, J. B., & Ellis, R. H. (1988). Communication and empathy as precursors to burnout among human service workers. *Communication Monographs, 55*, 250–265.
- Patchen, M. (1970). *Participation, achievement, and involvement on the job*. Englewood Cliffs, NJ: Prentice Hall.
- Persaud, R. (2004). Faking it: The emotional labour of medicine. *British Medical Journal Career Focus, 329*, 87.
- Ramirez, A. J., Graham, J., Richards, M. A., Cull, A., & Gregory, W. M. (1996). Mental health of hospital consultants: The effects of stress and satisfaction at work. *Lancet, 347*, 724–728.
- Ramirez, A. J., Graham, J., Richards, M. A., Cull, A., Gregory, W. M., Leaning, M. S., et al. (1995). Burnout and psychiatric disorder among cancer clinicians. *British Journal of Cancer, 71*, 1263–1269.
- Richardsen, A. M., & Burke, R. J. (1991). Occupational stress and job satisfaction among physicians: Sex differences. *Social Science and Medicine, 33*, 1179–1187.
- Schaufeli, W. B. (2007). Burnout in health care. In P. Carayon (Ed.), *Handbook of human factors and ergonomics in health care and patient safety* (pp. 217–232). Mahwah, NJ: Lawrence Erlbaum.
- Schaufeli, W. B., & Bakker, A. B. (2004). Job demands, job resources, and their relationship with burnout and engagement: A multi-sample study. *Journal of Organizational Behavior, 25*, 293–315.

- Schaufeli, W. B., van Dierendonck, D., & van Gorp, K. (1996). Burnout and reciprocity: Towards a dual-level social exchange model. *Work and Stress, 10*, 225–237.
- Shapiro, J., Hollingshead, J., & Morrison, E. (2002). Primary care resident, faculty, and patient views of barriers to cultural competence, and the skills needed to overcome them. *Medical Education, 36*, 749–759.
- Silverman, J., Kurtz, S., & Draper, J. (2005). *Skills for communicating with patients* (2nd ed.). Oxon, UK: Radcliffe.
- Smets, E. M. A., Visser, M. R. M., Oort, F., Schaufeli, W. B., & De Haes, H. C. J. M. (2004). Perceived inequity: Does it explain burnout among medical specialists? *Journal of Applied Social Psychology, 34*, 1900–1918.
- Smith, R. C., & Zimny, G. H. (1988). Physicians' emotional reactions to patients. *Psychosomatics, 29*, 392–397.
- Taris, T., Le Blanc, P. M., Schaufeli, W. B., & Schreurs, P. J. G. (2005). Are there causal relationships between the dimensions of the Maslach Burnout Inventory? A review and two longitudinal tests. *Work and Stress, 19*, 238–256.
- Tetrick, L. E., & LaRocco, J. M. (1987). Understanding, prediction, and control as moderators of the relationship between perceived stress, satisfaction, and psychological well-being. *Journal of Applied Psychology, 72*, 538–543.
- Wallace, J. E., & Lemaire, J. (2007). On physician well-being: You'll get by with a little help from your friends. *Social Science and Medicine, 64*, 2565–2577.
- Wijesinghe, G. (2001, December). Taking cultural difference into account in the delivery of emotional labour in the tourism and hospitality industry. *Proceedings of the Australia and New Zealand Academy of Management Research Conference*, Auckland, NZ.
- Williams, E. S., Konrad, T. R., Linzer, M., McMurray, J., Pathman, D. E., Gerrity, M., et al. (2002). Physician, practice, and patient characteristics related to primary care physician physical and mental health: Results from the Physician Work–Life Study. *Health Services Research, 37*, 121–143.
- Williams, E. S., McMurray, J., Baier-Manwell, L., Schwartz, M. D., & Linzer, M. (2007). Effect of workplace stress on patient outcomes. In P. Carayon (Ed.), *Handbook of human factors and ergonomics in health care and patient safety* (pp. 181–197). Mahwah, NJ: Lawrence Erlbaum.
- Zapf, D. (2002). Emotion work and psychological well-being: A review of the literature and some conceptual considerations. *Human Resource Management Review, 12*, 237–268.

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