

# Making Sense of Work Life: A Structural Model of Burnout

MICHAEL P. LEITER<sup>1</sup>

*Centre for Organizational Research  
and Development  
Acadia University  
Wolfville, Canada*

SANTIAGO GASCÓN AND  
BEGOÑA MARTÍNEZ-JARRETA  
*School of Occupational Medicine  
University of Zaragoza  
Zaragoza, Spain*

Hospital-based nurses ( $N = 832$ ) and doctors ( $N = 603$ ) in northern and eastern Spain completed a survey of job burnout, areas of work life, and management issues. Analysis of the results provides support for a mediation model of burnout that depicts employees' energy, involvement, and efficacy as intermediary experiences between their experiences of work life and their evaluations of organizational change. The key element of this model is its focus on employees' capacity to influence their work environments toward greater conformity with their core values. The model considers 3 aspects of that capacity: decision-making participation, organizational justice, and supervisory relationships. The analysis supports this model and emphasizes a central role for first-line supervisors in employees' experiences of work life.

The research questions of this study are threefold. First, the study evaluates a structural equation model in which the three aspects of burnout—exhaustion, cynicism, and efficacy—mediate the relationship of the work environment with employees' evaluation of organizational change. Second, it examines a mediation model that proposes a structured approach to work life that depicts employees' sense of control as a pivotal quality influencing their perspective on other aspects of work life while value congruence provides an integrative function, summarizing their overall evaluation of work life. Third, the research considers three perspectives on employees' capacity to shape their work lives: decision-making authority, access to fair procedures, and relationships with supervisors.

## The Research Model

The Maslach Burnout Inventory–General Scale (MBI-GS) defines a three-factor model of burnout as a combination of exhaustion, cynicism, and reduced efficacy. In the mid-1990s, Maslach and Leiter (1997) proposed work

<sup>1</sup>Correspondence concerning this article should be addressed to Michael P. Leiter, Centre for Organizational Research and Development, Acadia University, Wolfville, NS, Canada B4P 2J2. E-mail: michael.leiter@acadiau.ca

engagement as the opposite of burnout. According to Maslach and Leiter, “energy, involvement, and efficacy—these are the direct opposites of the three dimensions of burnout” (p. 24). Their approach placed burnout and work engagement on opposite ends of a three-factor continuum of psychological relationships with work. This approach reflected both the emerging focus of positive psychology (Luthans, 2002; Seligman & Csikszentmihalyi, 2000), and the interest of research participants in building positive capabilities in addition to addressing problems (e.g., burnout).

This reformulation permits defining the underlying qualities of burnout in positive terms, avoiding awkward phrasing. For example, a low score on the MBI-GS exhaustion subscale may be more accurately described as reflecting possessing energy, rather than lacking exhaustion: Energy is the quality that is exhausted in extreme negative scores on this subscale.

From this perspective, the three-factor model of burnout defines psychological relationships with work as three qualities of experience: energy, involvement, and efficacy (see Figure 1). The exhaustion subscale assesses respondents’ energy in terms of its absence. It also directly assesses respondents’ inability to regenerate energy when away from work (Enzmann, Schaufeli, & Janssen, 1998; Maslach, Jackson, & Leiter, 1996). For some researchers (e.g., Shirom, 2003), exhaustion is the defining quality of burnout.

The involvement dimension is defined as a specific inability to care about service recipients (i.e., depersonalization) or to be absorbed in work activities (i.e., cynicism). In contrast with the energy dimension’s internal focus on subjective well-being, the involvement dimension has an external focus on a person’s capacity to invest energy, attention, or emotion in a person, object, or activity. The interdependency between the two dimensions leads to the proposition that chronic exhaustion prompts people to withdraw their attentional and emotional investment in others. Secondarily, the lack of this sort of external involvement is so uninspiring that prolonged cynicism helps to perpetuate chronic exhaustion.

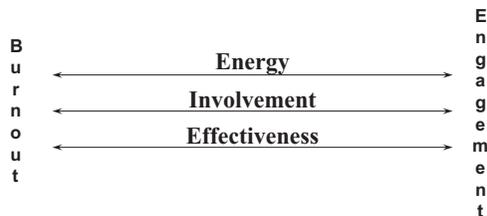


Figure 1. Continuum of burnout to engagement.

The third dimension, efficacy, describes employees' self-evaluations. Following the same process by which mastery experiences build domain-specific self-efficacy (Bandura, 1982), the experience of chronic exhaustion and cynicism erodes employees' confidence. The full burnout syndrome encompasses exhaustion, cynicism, and inefficacy.

More recently, Schaufeli and colleagues (Bakker & Schaufeli, 2004; Schaufeli, Salanova, González-Romá, & Bakker, 2002) developed the Utrecht Work Engagement Scale (UWES) as an alternative to using positive scores on the MBI-GS as an operationalization of work engagement. Its three dimensions—vigor, dedication, and absorption—provide a positive complement to burnout without being its exact opposite, as in Maslach and Leiter's (1997) construct. They build on a perspective that positive states are not the opposite of negative psychological states; the two may coexist. Although the UWES and the positive end of the MBI-GS provide different measures, both approaches share the view that the burnout syndrome is a psychological state that exists in contrast to a positive psychological state of work engagement. The exact nature of this relationship goes beyond the scope of this research.

Although research has found consistent relationships of burnout with employees' experiences of their work lives, the theoretical basis of these associations remains largely unexplored. The job demands/resources (JD/R) model (Bakker, Demerouti, & Schaufeli, 2002) acknowledges the adverse impact of work overload and exhaustion. This straightforward relationship has been a fundamental part of job stress and burnout research, reflecting employees' finite capacity to apply energy to addressing work demands. The JD/R model proposes a positive contribution from work-based resources to employees' well-being and self-efficacy. Although research has confirmed these relationships generally, it has not determined links of specific resources with burnout and the relationships among various resources in employees' experience of their work lives.

A more detailed consideration of work-life areas emphasizes distinct resources (Leiter & Maslach, 2004, 2005; Maslach & Leiter, 1997). Consistent with the demand/control model of stress (Karasek & Theorell, 1990), the model includes a reference to employees' capacity to control their participation in work lives through professional autonomy and participation in workplace decisions. Rather than the interaction between demands and control proposed in Karasek and Theorell's (1990) model, the mediation model proposes a linear relationship in which part of the relationship of control with burnout is mediated through workload: The more control employees exert at work, the more they can shape work demands to manageable levels. Other aspects of the relationship of control with burnout are mediated through other workplace resources, reflecting employees' capacity to shape

their work lives through even modest decision-making authority. Finally, control may have direct relationships with burnout beyond these mediated relationships in that the experience of exerting control in itself may enhance employees' self-efficacy.

A second aspect of employees' capacity to shape their work experiences is their access to organizational justice. When fairly treated, employees have access to reasonable consideration when interacting with organizational procedures beyond their individual control. In contrast, in an unjust work setting, they perceive their legitimate concerns overruled by the larger system's indifference or the self-interest of powerful others. Together, control and fairness describe an employee's capacity to develop a responsive, supportive work life.

Relationships with supervisors define a third element of employees' capacity to shape their work lives. Immediate supervisors shape employees' work experiences through assigning tasks and providing resources. Beyond these functional interactions, the quality of employees' relationships with supervisors with its potential for either confirmation or denial has implications for their sense of well-being and self-efficacy (Laschinger & Finegan, 2005; Leiter & Harvie, 1998).

The mediation model integrates employees' experience of work life in their assessment of congruence of personal and organizational values. The approach works from a perspective of person-environment fit (Saks & Ashforth, 1997), with the scale assigning high scores to a positive match of employees with their work environments and low scores to a mismatch. Personal values may reflect individual experience or cultural background. They may, as well, reflect the systematic values and ethics of their professions. Regardless, personal values embody the aspirations and motives that employees bring to work. They define the decision rules through which employees exert control and evaluate the fairness of organizational procedures.

A central proposition of the mediation model is that people will conduct their interactions with their work environments in a way that furthers what is important to them. On the other side, through their experiences with people and procedures at work, employees develop a view of the organization's values. They develop a coherent perspective on organizational values as they guide decisions that shape day-to-day work life beyond formal statements of mission and vision. A central proposition of the mediation model is that employees' evaluations of congruence of personal and organizational values play a major role in whether they will experience burnout or a more positive relationship with work life.

The mediation model gives a central position to value congruence, mediating much of the relationships of work life with burnout. This positioning

reflects the proposition that people react to workplace experiences with reflection. Rather than being buffeted by demand pressures toward exhaustion and cynicism, and resource pressures toward efficacy, people evaluate the totality of their work experiences against their core values. From this perspective, people do not perceive the sum total of work life as a series of distinct experiences, but as an integrated whole reflecting organizational values that shape the social environment of work.

In summary, the mediation model emphasizes sensemaking (Weick, 1995) in work life. The experience of burnout is not simply exhaustion resulting from too much work. It reflects a crisis in which employees view the workplace to be at odds with their core values. This evaluation transforms fatigue associated with excessive work demands into the full syndrome of exhaustion, cynicism, and inefficacy. The capacity for directing activities at work is both a function of personal qualities (e.g., self-regulation; Lord & Kanfer, 2002) and environmental constraints that are generally conveyed through supervisory monitoring. In turn, the model depicts the core elements of employees' work-life experience (i.e., energy, involvement, and efficacy) as mediating the impact of the work setting on a variety of outcomes, including performance (Aiken, Clarke, Sloane, Sochalski, & Silber, 2002; Leiter, Harvie, & Frizzell, 1998), employee well-being (Leiter, 2005), and perception of change (Leiter & Shaughnessy, 2006).

Structural equation tests of the model have supported the mediation relationships that the model predicts among the constructs (Leiter & Maslach, 2004; Leiter & Shaughnessy, 2006). These studies have supported distinct contributions for control and fairness in predicting employees' evaluation of value congruence. They did not include an assessment of supervision.

Both personal and occupational factors shape employees' capacity to shape their work lives. Regarding personal qualities, individuals' social anxiety and their capacity to articulate arguments convincingly determine to some extent their potential impact on the social environment. Demographic characteristics—including age, culture, and gender—can influence interactions among people at work. The research reported here considers occupation specifically. The occupational groups in this study are physicians and nurses, which are the two largest service-provider occupations within hospital settings. Physicians are considered to be in a higher status profession than nurses, and exercise greater authority in hospital settings (Brundtland, 2000; Evans, 1997; Reed & Buddeberg-Fischer, 2001; Riska & Wegear, 1993).

### Hypothesized Model

Figure 2 displays the hypothesized model. In this model, control is the only exogenous variable. Its place as the sole exogenous variable at the base

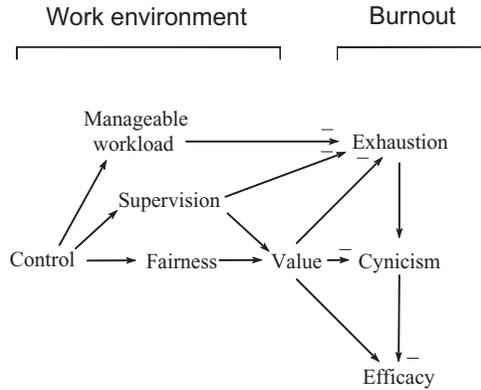


Figure 2. Hypothesized model.

of the model reflects the importance of employees' capacity to direct their work lives through autonomy, participation in decision making, and self-regulation. The capacity to participate in consequential decisions at work increases employees' options for action and enhances the probability that they can influence the course of events.

Control has direct paths to workload, supervision, and fairness. These paths reflect control's pervasive influence on employees' experience of work life. Specifically, regarding workload, control indicates that employees have some prerogatives about the amount, timing, or nature of their assigned tasks. The path from control to supervision reflects the importance employees give to a sense of control when evaluating the quality of supervision. The path to fairness reflects the importance of control in experiencing inclusion in the workplace community, as evidenced through respect and just decisions.

Workload, supervision, and values have paths to exhaustion. The path from workload to exhaustion reflects the impact of job demands on employees' energy levels. The path from supervision reflects that positive relationships with supervisors are a resource that provides energy, while negative relationships are exhausting beyond their implications for workload. Both fairness and supervision have paths to values indicating the central role both justice and leadership play in employees' evaluations of organizational values. Their interactions with supervisors, especially those pertaining to consequential judgments, provide indicators of the organization's values as implemented in day-to-day work life. Value congruence is relevant to all three aspects of burnout: greater value congruence is an energizing resource that supports involvement and supports employees' evaluations of their efficacy (Leiter & Maslach, 2004; Maslach & Leiter, 1997). Fairness has a path

to values: A sense of fairness demonstrates employees' compatibility with the workplace. Exhaustion and values have paths to cynicism; cynicism and values have paths to efficacy. These relationships reflect a process model of burnout (Leiter, 1993).

In addition to examining the model's applicability to a specific healthcare setting, the study contrasts two professions: nursing and medicine. Nurses are by far the predominant professional group participating in surveys of health-care facilities. The somewhat smaller literature on burnout among physicians has identified both commonalities and distinctions in the ways in which doctors and nurses experience work life (Firth-Cozens, 2003; Hem et al., 2005; Priebe, Fakhoury, Hoffmann, & Powell, 2005; Tyssen & Vaglum, 2002).

The research reported here includes a sufficient number of doctors and nurses to permit a meaningful analysis. It is expected that nurses and doctors will differ in their assessments of some aspects of work-life experience and some areas of work life. In light of their different work structures, it is predicted that nurses will report a more negative evaluation of workload and exhaustion. Despite differences in the levels of these scores, it is expected that the model will be invariant across the two populations regarding factor coefficients and structural coefficients: The same structural model will apply to both doctors and nurses.

## Method

### *Participants*

Study participants included 874 nurses (187 men,<sup>2</sup> 687 women) and 603 physicians (337 men, 266 women) working in three hospitals in northern and eastern Spain. The hospitals varied in numbers of employees: 4500, 2500, and 550, respectively. They included inpatient services as well as outpatient primary health services.

The doctors' mean age was 43.4 years ( $SD = 8.3$ ). Most were married ( $n = 490$ ; 81.3%), and most had dependent children ( $n = 424$ ; 70.3%). In addition, most ( $n = 371$ ; 61.5%) were in permanent positions, with the remainder in temporary positions of varying contract length. Specialty areas included laboratory ( $n = 9$ ; 1.5%), internal medicine ( $n = 98$ ; 16.3%); surgery ( $n = 52$ ; 8.6%); emergency medicine ( $n = 66$ ; 10.9%); cardio ( $n = 26$ ; 4.3%); neurology

<sup>2</sup>The relatively large percentage of male nurses reflects a recently terminated policy in which medical students in Spain were awarded the status of a nurse after 4 years of medical school. They could work in this role for financial support during medical school. A relatively large number of medical students would leave the program to work permanently as nurses.

( $n = 23$ ; 3.8%); oncology ( $n = 15$ ; 2.5%); ophthalmology ( $n = 15$ ; 2.5%); otology ( $n = 16$ ; 2.7%); psychiatry ( $n = 32$ ; 5.3%); and gynecology ( $n = 30$ ; 5.0%), with the remainder in other specialties. Participants had worked in their profession for varying times: less than 2 years ( $n = 174$ ; 28%); 2 to 5 years ( $n = 91$ ; 15.1%); 5 to 10 years ( $n = 113$ ; 18.7%); 10 to 15 years ( $n = 129$ ; 21.4%); 15–20 years ( $n = 67$ ; 11.1%); and more than 20 years ( $n = 29$ ; 4.8%).

The nurses' mean age was 40.6 years ( $SD = 8.6$ ). Most ( $n = 463$ ; 53.0%) were in permanent positions, with the remainder in temporary positions of varying contract length. Most were married ( $n = 694$ ; 79.4%), and most had dependent children ( $n = 542$ ; 62.0%). Specialty areas included laboratory ( $n = 13$ ; 1.5%); internal medicine ( $n = 101$ ; 11.6%); surgery ( $n = 127$ ; 14.5%); emergency medicine ( $n = 98$ ; 11.2%); cardio ( $n = 88$ ; 10.1%); neurology ( $n = 30$ ; 3.4%); oncology ( $n = 33$ ; 3.8%); ophthalmology ( $n = 16$ ; 1.8%); otology ( $n = 5$ ; 0.8%); psychiatry ( $n = 49$ ; 5.6%); and gynecology ( $n = 71$ ; 8.1%), with the remainder in other specialties. Participants had worked in their professions for varying times: less than 2 years ( $n = 225$ ; 25.7%); 2 to 5 years ( $n = 186$ ; 21.3%); 5 to 10 years ( $n = 172$ ; 19.7%); 10 to 15 years ( $n = 149$ ; 17.0%); 15 to 20 years ( $n = 94$ ; 10.8%); or more than 20 years ( $n = 48$ ; 5.5%).

### *Procedure*

The research team conducted a series of meetings at the participating hospitals. They described the rationale, objectives, and procedures for the survey and invited attendees to complete the survey package. The researchers distributed brochures and posters describing the study to informed potential participants who could not attend the meetings. Participants completed the questionnaires over the following 2 weeks, depositing the completed questionnaire in a locked box at the work setting. Participation was anonymous. The researchers conducted sessions at the hospitals describing the research results.

### *Instruments*

*Burnout.* Burnout was measured using the Maslach Burnout Inventory–General Scale (MBI-GS; Schaufeli, Leiter, Maslach, & Jackson, 1996). The MBI-GS measures the three dimensions of burnout: exhaustion, cynicism, and inefficacy. The items are framed as statements of job-related feelings (e.g., “I feel burned out from my work,” “I feel confident that I am effective at getting things done”) and are rated on a 7-point scale ranging from 0 (*never*) to 6 (*daily*). Burnout is reflected in higher scores on exhaustion and

cynicism, and lower scores on efficacy; whereas the opposite pattern is consistent with greater work engagement. Developed from the original MBI (Maslach et al., 1996), which was designed for human service occupations, the MBI-GS is a 16-item measure that evaluates burnout among people in all occupations.

*Areas of work life.* The Areas of Work Life Scale (AWS; Leiter & Maslach, 2000, 2004) is comprised of 29 items that produce distinct scores for six areas of work life—manageable workload (6), control (3), reward (4), community (5), fairness (6), and values (5)—of which four areas (workload, control, fairness, and values) were used in the present study. The items are worded as statements of perceived congruence or incongruence between oneself and the job. Each subscale includes positively worded items of congruence (e.g., manageable workload: “I have enough time to do what’s important in my job”) and negatively worded items of incongruence (e.g., values: “Working here forces me to compromise my values”). Respondents indicate their degree of agreement with the statements on a 5-point scale ranging from 1 (*strongly disagree*) to 3 (*hard to decide*) to 5 (*strongly agree*). Negatively worded items are reverse-scored.

For each of the six subscales, the AWS measure defines congruence as a high score ( $> 3.00$ ), indicating a higher degree of perceived alignment between the workplace and the respondent’s preferences. Conversely, it defines incongruence as a low score ( $< 3.00$ ), indicating more perceived misalignment or misfit between the worker and the workplace. The AWS items were developed from a series of staff surveys conducted by the Centre for Organizational Research and Development (Leiter & Harvie, 1998; Maslach & Leiter, 1997) as a means of assessing the constructs underlying our analysis of the six areas of work life. The scale has yielded a consistent factor structure across samples (Leiter & Maslach, 2004).

*Supervision.* Supervision was assessed with a three-item scale (Leiter & Maslach, 2000) that refers to supervisors’ behavior: delegating authority, consulting with subordinates, and encouraging innovation. Respondents rated items on a 5-point scale ranging from 1 (*strongly disagree*) to 3 (*hard to decide*) to 5 (*strongly agree*). Following the statement “From my point of view, my immediate supervisor . . . ,” a sample item is, “consults widely with people working in the unit.” The scale had good internal consistency ( $\alpha = .814$ ).

## Results

Table 1 displays the alphas and correlations for the study variables for nurses, while Table 2 displays this information for physicians. The correlations are consistent with expectations (Leiter & Maslach, 2004): Exhaustion

Table 1

*Study Means and Correlations: Nurses*

Variable	<i>M</i>	<i>SD</i>	$\alpha$	1	2	3	4	5	6	7	8
1. Exhaustion	2.10	1.43	.90	—							
2. Cynicism	1.63	1.27	.85	.51	—						
3. Efficacy	3.84	1.07	.78	-.18	-.41	—					
4. Manageable workload	2.97	0.75	.75	-.47	-.35	.16	—				
5. Control	2.96	0.77	.65	-.21	-.24	.28	.31	—			
6. Fairness	2.50	0.64	.74	-.25	-.31	.15	.25	.37	—		
7. Values	2.95	0.67	.65	-.23	-.32	.20	.17	.35	.46	—	
8. Supervision	3.15	0.94	.84	-.20	-.33	.15	.16	.25	.37	.34	—
9. Perception of change	2.92	0.53	.81	-.28	-.43	.25	.28	.31	.30	.38	.43

Note.  $N = 874$ . All correlations significant at  $p < .01$ .

Table 2

*Study Means and Correlations: Physicians*

Variable	<i>M</i>	<i>SD</i>	$\alpha$	1	2	3	4	5	6	7	8
1. Exhaustion	2.15	1.44	.91	—							
2. Cynicism	1.81	1.35	.81	.61	—						
3. Efficacy	3.80	1.04	.78	-.32	-.42	—					
4. Manageable workload	2.87	0.76	.74	-.50	-.33	.13	—				
5. Control	2.95	0.82	.62	-.35	-.38	.34	.38	—			
6. Fairness	2.54	0.69	.74	-.23	-.30	.09	.26	.45	—		
7. Values	2.96	0.64	.72	-.35	-.45	.34	.19	.40	.45	—	
8. Supervision	3.07	0.94	.81	-.21	-.22	.15	.18	.28	.30	.31	—
9. Perception of change	2.83	0.53	.80	-.32	-.39	.19	.30	.23	.29	.39	.36

Note.  $N = 603$ . All correlations significant at  $p < .01$ .

was highly correlated with cynicism (nurses,  $r = .61, p < .01$ ; doctors,  $r = .51, p < .01$ ), and both were negatively correlated with professional efficacy. Exhaustion and cynicism were negatively correlated with the six areas of work life and the management areas. The strongest correlation with these constructs was that between manageable workload and exhaustion (nurses,  $r = .47, p < .01$ ; doctors,  $r = .50, p < .01$ ). All alpha levels were above .70, except for control for both groups and values for doctors. It was determined that two items (i.e., Control 1 and Values 2) encountered translation problems to be addressed in future surveys. Those items were eliminated from all further analyses reported here. The remaining two control items were correlated (doctors,  $r = .47, p < .001$ ; nurses,  $r = .41, p < .001$ ). The revised values scale had an alpha of .71 for both doctors and nurses.

### *Profession Contrasts*

A series of independent-sample  $t$  tests using a Bonferroni corrected criterion of .0044 to accommodate 11 contrasts found no significant differences between doctors and nurses on the study variables. The only contrasts that approached significance were for cynicism, in which nurses scored marginally lower,  $t(1475) = 2.68, p = .007$ ; and manageable workload, in which nurse scored marginally more positively,  $t(1475) = 2.27, p = .023$ . Overall, the contrasts of average responses suggest that the two professions experience the workplaces similarly.

### *Model Testing Strategy*

We used a structural equations analysis to evaluate the hypothesized model using EQS (EQuationS; Bentler & Chou, 1987). This analytical approach provides a distinct advantage over multiple regression analysis with burnout analysis in that it acknowledges the interrelated nature of the three-factor burnout construct. That is, the analysis evaluates the contribution of workplace predictors of each subscale of the MBI-GS in the context of its relationships with the other two subscales. This approach maintains burnout as an integrated, complex construct. It is acknowledged that despite the causal perspective suggested by structural equation diagrams (e.g., Figure 2), that the cross-sectional data presented here lack causal significance.

Whereas some items show a moderate kurtosis, the analysis used the robust analysis option of EQS, which corrects for multivariate kurtosis (Byrne, 1994). The following section reports the robust statistics for chi square (Satorra–Bentler scaled statistics; Satorra & Bentler, 1988),

Bentler–Bonett’s non-normed fit index (BBNFI), comparative fit index (CFI), and root mean square error of approximation (RMSEA). In all models, the first item of each factor is fixed to establish the factor’s scale.

The items for the various measures were combined to produce three indicators for each of the nine latent variables in the model by taking the means of item pairs. For example, the three indicators for the exhaustion latent variable were (1) the mean of MBI-1 and MBI-2; (2) the mean of MBI-3 and MBI-4; and (3) MBI-6 (exhaustion having five items could not be defined solely by pairs of items). The same procedure was used with other variables with more than three indicators. Because it had only three items, supervision used item scores with no modification.

Within the AWS (Leiter & Maslach, 2000, 2004), the items Control-1 and Values-2 had been eliminated from further analysis, as discussed previously. This procedure resulted in nine latent variables, with a total of 25 indicators yielding a better ratio of participants to degrees of freedom. Using fewer items has the advantage of focusing the analysis on the structural relationships among constructs. This approach is appropriate for this analysis of the structural equation underlying the hypothesized model. The independence model of the structural equation model had 300 degrees of freedom, with a 4 : 1 ratio of participants to degrees of freedom. The independence model for the multigroup analysis had 600 degrees of freedom.

### *Structural Equation Model*

A structural equation analysis of the hypothesized model produced results,  $\chi^2(198, N = 1477) = 722.43, p < .001$  (CFI = .953, RMSEA = .042), that met the RMSEA and CFI criteria for an excellent fit and a significant improvement over the independence model provided by EQS as a reference point,  $\chi^2(231, N = 1477) = 11407.51$ . Figure 3 displays the hypothesized model with structural coefficients. All paths were significant. The modification indexes suggest that the model would be improved by adding a direct path from supervision to exhaustion. A model with that change improved the fit significantly,  $\chi^2(196, N = 1477) = 697.67, p < .001$  (CFI = .955, RMSEA = .042), with a difference of chi square,  $\chi^2(1, N = 1477) = 24.76, p < .001$ .

To test the mediation role of the values in the model, the mediation model was contrasted with a direct effects model that includes direct paths from all workplace variables (i.e., workload, control, fairness, values, supervision) to each of the three burnout dimensions. The analysis maintained as well the path from exhaustion to cynicism and the path from cynicism to efficacy. The reference point for this model was the mediation model, with correlations

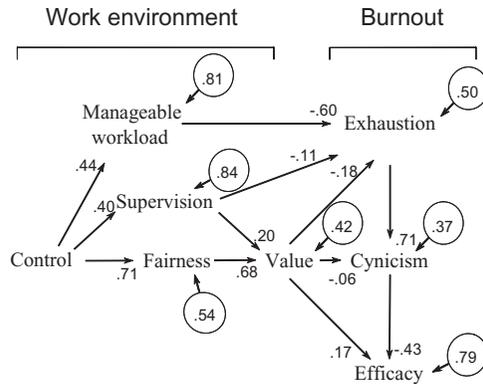


Figure 3. Modified model with coefficients.

freed corresponding to all of the additional paths in the direct effects model. This modification permits a direct comparison between the two models, as they have the same degrees of freedom. The criterion regarding the mediation role of values is the difference in explained variance for each of the three outcome variables: exhaustion, cynicism, and efficacy. The model fit for both models was the same,  $\chi^2(188, N = 1477) = 690.67, p < .001$  (CFI = .955, RMSEA = .045), which did not differ significantly from the modified model in light of the additional 8 degrees of freedom. The models differed modestly in the amount of explained variance (exhaustion: direct effects = .510; modified model = .508; cynicism: direct effects = .654; modified model = .629; efficacy: direct effects = .248; modified model = .198). The additional 5% in explained variance for efficacy was associated with a large coefficient for control in the direct effects model. Overall, this contrast confirms that values mediated most, but not all of the relationships of workplace variables with burnout.

A multigroup structural equation analysis applied the hypothesized model separately to doctors and to nurses, with all factor coefficients and structural coefficients constrained to equality, and provided an adequate fit for the complex model,  $\chi^2(461, N = 603) = 1309.73, p < .001$  (CFI = .927, RMSEA = .050). The largest modification index associated with an equality constraint was the path from exhaustion to cynicism,  $\chi^2(1, N = 603) = 8.99, p = .003$ . Freeing this constraint had only a trivial impact on the model, with the path coefficient for doctors at .78 and the corresponding path for nurses at .67. Although significantly different, both are relatively large coefficients and are consistent with expectations. The analysis confirms that the relationships among the model elements remained consistent across these two occupational groups.

## Discussion

The results support the hypothesized model of work life, including a distinct pattern of relationships of work life areas with burnout and mediation relationships. These results contribute to building a model of employees' experience of work life. A central finding of the study is confirming a pivotal role for control in a model of work life. It functioned well as the sole exogenous variable in the model, with direct or indirect connections to all other areas of work life and psychological relationships with work. The capacity to participate in decision making and to exercise self-determination in work has implications for the likelihood of experiencing a just work life or building a fulfilling relationship with immediate supervisors. The structural equation model provided support for hypothesized mediation relationships, while identifying a more central role for supervision than originally proposed. Together, the study demonstrates the applicability and some limitations of the mediation model of burnout to a distinct cultural context.

The structural equation analysis confirms important aspects of the hypothesized mediation model. First, control played a pivotal role in the model, as the only exogenous variable in the study with paths to workload, supervision, and fairness. This pattern supports the idea that control is central to employees' experience of their work life, with implications for instrumental aspects of their work experience: their workload, their relationship with immediate supervisors, and their access to organizational justice. This pattern of relationships represents a core construct of the model: Employees' experience of being in control of their work lives plays a defining role in their experience of work life.

Second, value congruence was significantly related to all three aspects of relationships with work. The path from values to cynicism was relatively small in the modified model, indicating that most of that relationship was mediated through exhaustion in light of the large zero-order correlation between the two constructs. They are clearly related, but much of that relationship is associated with the energetic process captured by exhaustion. Together, the analysis supports the core constructs of the model.

The test of mediation confirms a nearly total mediation for values regarding exhaustion and cynicism. This test exclusively considered the values process, as the direct path from workload to exhaustion was constant through all of the models. The larger difference in explained variance for efficacy suggests that aspects of work life distinct from value congruence are relevant to nurses' and doctors' sense of professional efficacy. It may be that successful experiences in providers' personal interactions with patients and

with colleagues make a distinct contribution to their sense of efficacy, regardless of values considerations.

A pivotal theoretical concept in the model is employees' capacity to shape work life. The importance accorded this capacity concerns two processes defined in the mediation model of burnout. One process is the path from work overload to exhaustion: Without sufficient resources to address work demands, people deplete their energy. The second process, and the primary focus of this study, concerns value congruence. When people are unable to shape their work environment to permit them to pursue what they value in their work, they experience a conflict. The level of congruence between organizational and personal values is reflected in the values component of the mediation model. The model explored in this study identifies three interdependent routes by which employees may shape their work environment to produce a work life more consistent with their values: decision-making authority, access to organizational justice, and supervisory relationships. While each of these components has implications beyond the specific issue of value congruence, together, they define important routes by which employees may exert influence.

Including supervision within the model, innovation beyond previous research (Leiter & Maslach, 2004; Leiter & Shaughnessy, 2006) brought the social environment into the model with a specific focus on the primary relationships with organizational authority. The path from supervision to exhaustion reflects supervisors' roles in allocating responsibilities beyond those encompassed in employees' evaluations of workload. The path to cynicism reflects the inspirational or transformational quality of leadership in that supervision was associated with involvement beyond its association with employees' energy levels. This direct relationship is especially noteworthy because exhaustion effectively mediates cynicism's relationships with other areas of work life. The path from supervision to values represents the vital role of supervisors in representing the organization's values to employees. In their statements and their actions, leaders convey to employees the organization's priorities regarding its grand vision, as well as its day-to-day resource allocations.

Nurses' scores on these variables have been compared to North American samples in a separate publication (Leiter, Gascón, & Martínez-Jarreta, 2007). This study found that North American nurses scored more negatively on exhaustion and cynicism and more positively on efficacy than did Spanish nurses. They also differed on all areas of work life, with North American nurses having a more negative evaluation of workload, but a more positive evaluation of all other areas of work life. These distinct patterns reflect the two processes in the conceptual model, with North American nurses demonstrating a positive process regarding value congruence and

a distressed process regarding energy, with Spanish nurses demonstrating the opposite process. These results are discussed in the context of cultural differences between the two regions and distinct professional issues regarding nursing.

The present study is limited by its reliance on self-report, cross-sectional data. The data do not permit examining the development of relationships among variables over time. They are also susceptible to response bias inherent in self-report questionnaires. The reduced item set in the structural equation models helps to reduce response biases implicit in correlated item errors, but other influences remain. The study is also limited by its reliance on a translation that requires further refinement. This initial test of the instrument and the conceptual model guiding its structure is encouraging, but more work is necessary.

Future research should include longitudinal research designs that can track specific individuals over time to examine developmental processes. Our research team is working with participating hospitals to identify institutional data related to employee health and quality of services to permit linking the questionnaire data with other information.

The limitations of the current study caution against immediate definitive applications, but do shed light on qualities of workplace experience. The results underscore the importance of value congruence, as well as workload when considering burnout. An exclusive focus on work overload would suggest that reducing work demands is a sufficient intervention to address burnout. The research model supported in this study suggests that such an approach would be incomplete without considering values issues as well. The pivotal roles of control and supervision in the model suggest that both leadership and employees' potential to demonstrate initiative in their work are areas worth exploring in designing workplace interventions to prevent burnout and build work engagement. More extensive research is needed to identify the potential impact of values-based interventions on employees' potential for experiencing burnout.

In conclusion, the present study supports a mediation model of employees' relationships with work. It confirms key mediation relationships reflecting a structured perspective on work settings and their relationships with employees' experiences of energy, involvement, and efficacy. Although acknowledging distinctions between doctors and nurses, the analysis supports the proposition that they share concerns about key areas of work life and the relationship of those areas to their personal experiences at work. Most importantly, the study supports a two-process model of burnout and work engagement in which value congruence functions in parallel with energetic processes associated with workload in how people experience their work lives.

## References

- Aiken, L. H., Clarke, S. P., Sloane, D. M., Sochalski, J., & Silber, J. H. (2002). Hospital nurse staffing and patient mortality, nurse burnout, and job satisfaction. *Journal of the American Medical Association*, *288*, 1987–1993.
- Bakker, A. B., Demerouti, E., & Schaufeli, W. B. (2002). Validation of the Maslach Burnout Inventory–General Survey: An Internet study. *Anxiety, Stress, and Coping: An International Journal*, *15*, 245–260.
- Bakker, A. B., & Schaufeli, W. B. (2004). Job demands, job resources, and their relationship with burnout and engagement: A multi-sample study. *Journal of Organizational Behavior*, *25*, 293–315.
- Bandura, A. (1982). Self-efficacy mechanisms in human agency. *American Psychologist*, *37*, 122–147.
- Bentler, P. M., & Chou, C. P. (1987). Practical issues in structural modeling. *Sociological Methods and Research*, *16*, 78–117.
- Brundtland, G. H. (2000). The woman physician in the year 2000. *Connections*, *55*, 3–4.
- Byrne, B. M. (1994). *Structural equation modeling with EQS and EQS/Windows: Basic concepts, applications, and programming*. Thousand Oaks, CA: Sage.
- Enzmann, D., Schaufeli, W. B., & Janssen, P. (1998). Dimensionality and validity of the burnout measure. *Journal of Occupational and Organizational Psychology*, *71*, 331–351.
- Evans, J. (1997). Men in nursing: Issues of gender segregation and hidden advantage. *Journal of Advanced Nursing*, *26*, 226–231.
- Firth-Cozens, J. (2003). Doctors, their well-being, and their stress. *British Medical Journal*, *326*, 671–672.
- Hem, E., Haldorsen, T., Aasland, O. G., Tyssen, R., Vaglum, P., & Ekeberg, O. (2005). Suicide rates according to education with a particular focus on physicians in Norway, 1960–2000. *Psychological Medicine*, *35*, 873–880.
- Karasek, R., & Theorell, T. (1990). *Stress, productivity, and the reconstruction of working life*. New York: Basic Books.
- Laschinger, H. K. S., & Finegan, J. (2005). Empowering nurses for work engagement and health in hospital settings. *Journal of Nursing Administration*, *35*, 439–449.
- 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. (2005). Perception of risk: An organizational model of burnout, stress symptoms, and occupational risk. *Anxiety, Stress, and Coping*, *18*, 131–144.

- Leiter, M. P., Gascón, S., & Martínez-Jarreta, B. (2007). Un modelo sobre el síndrome de quemarse por el trabajo (burnout) como un proceso doble: Su relevancia para enfermeras españolas y canadienses [A two-process model of burnout: Their relevance to Spanish and Canadian nurses]. *Informació Psicològica*, *91*, 95–109.
- Leiter, M. P., & Harvie, P. (1998). Conditions for staff acceptance of organizational change: Burnout as a mediating construct. *Anxiety, Stress, and Coping*, *11*, 1–25.
- Leiter, M. P., Harvie, P., & Frizzell, C. (1998). The correspondence of patient satisfaction and nurse burnout. *Social Science and Medicine*, *47*, 1611–1617.
- Leiter, M. P., & Maslach, C. (2000). *Preventing burnout and building engagement: A training package*. San Francisco: Jossey-Bass.
- Leiter, M. P., & Maslach, C. (2004). Areas of worklife: A structured approach to organizational predictors of job burnout. In P. Perrewé & D. C. Ganster (Eds.), *Research in occupational stress and well-being: Vol. 3. Emotional and physiological processes and positive intervention strategies* (pp. 91–134). Oxford, UK: JAI Press/Elsevier.
- Leiter, M. P., & Maslach, C. (2005). *Banishing burnout: Six strategies for improving your relationship with work*. San Francisco: Jossey-Bass.
- Leiter, M. P., & Shaughnessy, K. (2006). The areas of worklife model of burnout: Tests of mediation relationships. *Ergonomia: An International Journal*, *28*, 327–341.
- Lord, R. G., & Kanfer, R. (2002). Emotions in the workplace. In R. G. Lord, R. J. Klimoski, & R. Kanfer (Eds.), *Emotions in the workplace: Understanding the structure and role of emotions in organizational behavior* (pp. 5–19). New York: Pfeiffer.
- Luthans, F. (2002). The need for and meaning of positive organizational behavior. *Journal of Organizational Behavior*, *23*, 695–706.
- Maslach, C., Jackson, S. E., & Leiter, M. P. (1996). *Maslach Burnout Inventory manual* (3<sup>rd</sup> ed.). Palo Alto, CA: Consulting Psychologists Press.
- Maslach, C., & Leiter, M. P. (1997). *The truth about burnout*. San Francisco: Jossey-Bass.
- Priebe, S., Fakhoury, W. K. H., Hoffmann, K., & Powell, R. A. (2005). Morale and job perception of community mental health professionals in Berlin and London. *Social Psychiatry and Psychiatric Epidemiology*, *40*, 223–232.
- Reed, V., & Buddeberg-Fischer, B. (2001). Career obstacles for women in medicine: An overview. *Medical Education*, *35*, 139–147.
- Riska, E., & Wegear, K. (Eds.). (1993). *Gender, work and medicine: Women and the medical division of labor*. Newbury Park, CA: Sage.

- Saks, A. M., & Ashforth, B. E. (1997). A longitudinal investigation of the relationships between job information sources, applicant perceptions of fit, and work outcomes. *Personnel Psychology*, *50*, 395–426.
- Satorra, A., & Bentler, P. M. (1988). *Scaling corrections for chi-square statistics in covariance structure analysis* (UCLA Statistics Series 2). Los Angeles: University of California at Los Angeles, Department of Psychology.
- Schaufeli, W. B., Leiter, M. P., Maslach, C., & Jackson, S. E. (1996). The Maslach Burnout Inventory–General Survey. In C. Maslach, S. E. Jackson, & M. P. Leiter (Eds.), *MBI manual* (3<sup>rd</sup> ed.). Palo Alto, CA: Consulting Psychologists Press.
- Schaufeli, W. B., Salanova, M., González-Romá, V., & Bakker, A. B. (2002). The measurement of engagement and burnout: A confirmative analytic approach. *Journal of Happiness Studies*, *3*, 71–92.
- Seligman, M., & Csikszentmihalyi, M. (2000). Positive psychology: An introduction. *American Psychologist*, *55*, 5–14.
- Shirom, A. (2003). Job-related burnout: A review. In J. C. Quick & L. E. Tetrick (Eds.), *Handbook of occupational health psychology* (pp. 245–265). Washington, DC: American Psychological Association.
- Tyssen, R., & Vaglum, P. (2002). Mental health problems among young doctors: An updated review of prospective studies. *Harvard Review of Psychiatry*, *10*, 154–165.
- Weick, K. (1995). *Sensemaking in organizations*. Thousand Oaks, CA: Sage.