Burnout Among Primary Care Physicians: A Test of the Areas of Worklife Model

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EXE C U T I V E  S U M M A R Y
Examinations of the current state of the physician workforce, in the United States and globally, indicate a declining overall well-being, and specifically increasing levels of burnout. The consequences of these effects include early retirements or exits from the medical profession, difficulties improving the patient experience, and low levels of provider engagement with clinic-level and system-level initiatives. Such consequences affect physicians, healthcare organizations, and patients. While most research has focused on identifying burnout, cataloging its effects, and creating a case for attending to its impact, relatively few studies have focused on exploring the antecedents of burnout for physicians. The goal of this study was to test an etiological model, the Areas of Worklife Scale (AWS), for practicing primary care physicians.

Using the AWS and the Maslach Burnout Inventory, the study used a longitudinal survey research design method to query primary care physicians employed at a large integrated delivery system in the United States. Data collected successfully fit the AWS model for burnout among primary care physicians, supporting our theory that workplace drivers are responsible for burnout. Workload, control, and values congruence are the largest drivers of burnout for practicing primary care physicians. The AWS model provides key insights into the domains of work that cause stress and ultimately burnout for physicians, and these domains can guide physicians and managers to develop interventions to fight the rising incidence of burnout.

For more information about the concepts in this article, contact Dr. Gregory at gregory@tamhsu.edu.
INTRODUCTION
Examinations of the current state of the physician workforce, in the United States and globally, indicate a declining overall well-being (Wallace, Lemaire, & Ghali, 2009), specifically increasing levels of burnout (Shanafelt et al., 2012). The consequences of this trend are numerous, and include early retirements or exits from the medical profession (Williams et al., 2010), difficulties improving the patient experience (Linzer et al., 2009), and low levels of provider engagement with clinic-level and system-level initiatives (Scheurer, McKeen, Miller, & Wetterneck, 2009), affecting physicians, healthcare organizations, and patients. Most research has focused on identifying burnout, cataloging its effects, and creating a case for attending to its impact; relatively few studies, in contrast, have explored the antecedents of physician burnout. The objective of this research is to extend the study of physician burnout by testing an etiological model—the Areas of Worklife Scale (AWS) (Leiter & Maslach, 2004)—for practicing primary care physicians to better understand how this population experiences burnout. This model was developed as a general explanation of burnout and was previously untested among physicians. In addition to expanding the understanding of burnout, the model helps healthcare leaders identify which domains of physician work offer the greatest opportunities to arrest burnout.

Burnout is a specific stress reaction resulting from the relationship between an individual and his or her work, and is composed of three components: emotional exhaustion (EE), depersonalization (DEP), and self-efficacy (SE). These components are widely measured by the Maslach Burnout Inventory (MBI). EE is the state of depletion resulting from the conduct of one's work. DEP, often referred to as cynicism, is the withdrawal of oneself from personal interactions, or the dehumanization of those involved in one’s work. Reduced SE refers to feelings of minimal personal accomplishments or general feelings of futility with respect to one’s work (Maslach & Jackson, 1981; Maslach, Schaufeli, & Leiter, 2001).

These dimensions occur in sequence, build in duration and severity (Maslach et al., 2001), and can be explained theoretically by the Conservation of Resources (COR) theory (Hobfoll, 1989; Hobfoll & Freedy, 1993). COR states that individuals seek to acquire and maintain resources. Stress occurs when those resources are threatened or depleted. COR predicts that stress occurs in three situations: 1) when resources are lost or depleted; 2) when they are not sufficient to meet the demands of the workplace; and 3) when invested resources do not produce the intended result. While work does place demands on an individual's resources, it also gives an individual resources to help complete that work. The nature of an individual’s work and the associated demands and impact on the individual’s resources produce the work-related stress reaction known as burnout (Maslach & Leiter, 1997; Maslach et al., 2001). The nature of the workplace must be inspected to determine the aspects of the job that deplete or threaten an individual’s resources.
The fundamental relationship between an individual and the workplace can be assessed in terms of degrees of "fit." Fit, as in person–environment or person–job fit (Saks & Ashforth, 1997), is the mechanism that underlies the demands-and-resources relationship between individuals and their work. In cases when fit is high, the demands of the workplace are balanced against both the resources an individual brings to the workplace and the demands of the work itself, and there is a positive COR outcome. When fit is low, demands deplete resources, or resources from the work environment are insufficient to subsidize an individual's resources against the demands of the workplace. The AWS measures "fit" between an individual and his or her job in a 29-item scale (Maslach & Leiter, 1997).

This conceptual model is based both upon theory and upon findings from previous studies of burnout. The relationships presented in the tested model build on study findings that demonstrated that demands have a more direct impact on the EE dimension, which further mediates their relationship with the DEP and SE dimensions (Leiter, 1993). Resources from the workplace, or lack thereof, affect the latter two dimensions of burnout but show little effect on EE (Lee & Ashforth, 1996). According to a meta-analysis of the dimensions of job burnout, "emotional exhaustion as a form of strain is directly affected by [demands and resources] correlates, whereas depersonalization as a form of defensive coping and personal accomplishment as a form of self-evaluation are indirectly affected through emotional exhaustion" (Lee & Ashforth, 1996, p. 123). EE mediates the workload dimension of the AWS model from DEP and SE because EE represents the stress and overextension that can occur when resources are depleted (Leiter & Maslach, 2004). The Demands/Control theory lends support for "control" working through the other components of the AWS (Karasek & Theorell, 1992). When the values of the workplace and the worker are in congruence, a harmony that promotes engagement exists; when incongruence exists, distress and burnout result (Leiter & Maslach, 2004).

**Consequences of Burnout**

Burnout is estimated to affect 30% to 70% of all physicians, making it a significant issue in their work lives (Shanafelt, Sloan, & Habermann, 2003). The consequences of burnout are well documented and can have a serious impact, particularly on personal health. Evidence suggests that burnout can lead to poor employee physical health (Liljegren & Ekberg, 2009) and, for physicians, to adverse outcomes such as increased anxiety, depression, suicide (Allo, 2009; Balch & Shanafelt, 2010; Balch & Copeland, 2007; Center et al., 2003; Frank & Biola, 2000; Schernhammer, 2005), and substance abuse (Jenkins, 2009; Saadat, Lin, & Kain, 2010). In the first published descriptions of burnout, the pattern of individuals distancing themselves from their families was noted as an early and significant sign of the syndrome (Freudenberger, 1974). Recent work has confirmed that the long work hours, stressful case loads, and complex emotional problems
compound family dysfunction and increase friction at home (Myers, 2001).

Burnout and stress often are cited as the primary reasons why physicians choose to exit the profession, either by changing specialties or careers, exacerbating an already acute problem of primary care physician shortages in the United States (Blanchard et al., 2010). In fact, 49% of physicians are so dissatisfied they are considering cutting back on their patient care responsibilities or retiring prematurely (Ulwelling & Christensen, 2001). This reduction in work hours essentially equates to a further shortage of physicians. A recent report in the *Journal of the American Medical Association* suggests that decreasing weekly physician work hours by four is equivalent to losing approximately 36,000 physicians over the course of a decade (Staiger, Auerbach, & Buerhaus, 2010).

Research has begun to associate physician stress and burnout with adverse consequences for patients, including decreased access, a diminished patient experience, suboptimal outcomes, and increased errors in care. The MEMO study has offered conflicting evidence about the direct impact of burnout on care quality in primary care (Linzer et al., 2005). Linzer et al. (2009) found that work conditions were strongly associated with adverse physician reactions (e.g., burnout), though physician reactions were not found to be associated with poorer patient care. This inconsistent association between care quality and physician burnout implies that physicians may act as a “buffer between adverse work conditions and patient care” (Linzer et al., 2009, p. 34). In contrast, for surgeons, both the surgeons themselves and their patients believe that burnout in physicians does contribute to increased errors (Blendon et al., 2002), and this association between surgeon burnout and major medical errors has been demonstrated (Shanafelt et al., 2010). In addition, several studies have noted a decrease in care quality and an increase in unethical actions by residents in training when the prevalence and severity of burnout increase (Blanchard et al., 2010). These data appear to be contradictory and fail to show clear associations; more work is required to understand the clinical implications of provider burnout. Any strategy to reduce errors must focus on both error prevention and practitioner health (Campbell, 2010).

**ANTECEDENTS OF BURNOUT**

Researchers have investigated the antecedents and early warning signs of burnout and found that work culture and work conditions were the greatest contributors to disaffection and burnout among physicians (Linzer et al., 2009). Before the advent of large medical systems, physicians primarily cared for patients in a single office setting, allowing a high level of practitioner control over the environment. Newer delivery models result in greatly reduced control by physicians, and this lack of control is a prime contributor to physician disengagement and dissatisfaction (Cole & Carlin, 2009; Cossman & Street, 2009). The ensuing burnout not only has an impact on physician satisfaction, but it also may lead to diminished patient satisfaction, increased medical errors, and an increased prevalence of personal and organizational malpractice.
litigation (Balch & Shanafelt, 2010; Jones et al., 1988). When physicians perceive disconnects among organizational values, work conditions, and underlying fundamentals of patient care, the result is dissatisfaction and increased turnover (Blanchard et al., 2010).

The AWS was developed to examine the dimensions of an individual’s work (Leiter & Maslach, 2004; Maslach & Leiter, 2008). Six key dimensions were recognized that represent the “demands and resource predictors” of the workplace indicated by Lee and Ashforth (1996, p. 123). As depicted in Figure 1, the six aspects of worklife that contribute to burnout are workload, control, community, fairness, rewards, and values (Maslach & Leiter, 2008).

Three separate stress theories describe the effect of these dimensions on burnout, specifically the element of EE. First, the Job Demands/Resources theory (Bakker & Demerouti, 2007) describes the impact of workload on an individual’s level of EE. Workload demands that exceed an individual’s resources result in depleted resources, thus causing stress and burnout. The rewards dimension reflects the resources (i.e., monetary value, social well-being, and self-esteem) provided by or lacking from the effort people put toward their work (Leiter, Gascón, & Martínez-Jarreta, 2010). The workplace offers many opportunities for relationships and social support, which are key resources that can be either supported or threatened by the workplace, thus contributing to overall levels of burnout (Leiter et al., 2010). Second, the Demands/Control theory (Karasek & Theorell, 1992) of stress describes the role of control and autonomy over one’s work in relation to stress, and is represented by the dimension of control. In addition, the fairness present in an individual’s workplace and the resulting justice provide a sense of control over the environment (Leiter et al., 2010). Lastly, the Person-Environment Fit theory (Saks & Ashforth, 1997) is helpful to describe the degree of value congruence between an individual and the organization or workplace. A situation in which there is a mismatch among values is likely to produce significant stress reactions and thus lead to burnout.

This study is an opportunity to develop and test the theory for burnout in the primary care setting; specifically, it will determine the applicability of the AWS model in measuring burnout for primary care physicians. The following hypothesis is offered:

$H1$: The hypothesized model of Areas of Worklife components driving the Maslach Burnout Inventory dimensions, depicted in Figure 1, fits data for physicians in the clinical practice setting.

RESEARCH METHODS

A longitudinal survey research design was employed to test the AWS model for physicians. The study was conducted in the ambulatory care division of a large integrated delivery system (IDS) in the United States in 2011. The physicians studied were all employed primary care physicians practicing within wholly owned clinics of the IDS. The findings of this study are only generalizable to similar populations in similar settings. A three-wave data collection effort surveyed physicians to assess their level of
FIGURE 1
The Areas of Worklife Scale and the Maslach Burnout Inventory Causal Model


Control: The active participation in workplace decisions
Workload: When job demands exceed the worker’s capacity and there is insufficient time or resources to recover
Rewards: The financial, institutional, or social rewards that place greater value on work
Community: The overall quality of social interaction at work, including conflict resolution, mutual support, closeness, and the capacity to work as a team
Fairness: The extent to which decisions are perceived as being fair and equitable; the outcome is less important than the equity itself
Values: Whether a conflict exists between the personal values that physicians bring to their work and the expression of organizational values
Emotional Exhaustion: The state of depletion resulting from the conduct of one’s work
Cynicism: The withdrawal of oneself from personal interactions, or the dehumanization of those involved in one’s work
Self-Efficacy: The level of personal accomplishments or general feelings of futility with respect to one’s work

 Sources. Maslach and Jackson (1981); Maslach, Schaufeli, and Leiter (2001).
perceived burnout and its reported antecedents. Physicians were invited, via email, to complete an electronically delivered online survey containing the full MBI and the AWS and important covariates. The survey was conducted at baseline and repeated twice more, at 3 and 6 months following the baseline assessment.

Physician burnout was measured using the complete 22-question Maslach Burnout Inventory (Maslach & Jackson, 1981). The dimensions of work were assessed using the AWS, previously discussed. To assess the fit of the model and make an appropriate causal inference, data for AWS at baseline were used to predict MBI measures at Time 1, 3 months after the baseline assessment. This longitudinal design ensured that the hypothesized AWS variables temporally preceded the MBI outcomes and avoided common methods bias arising from both independent and dependent variables sourced from the same survey instrument. Physicians surveyed were practicing in eight separate clinics, indicating a potential correlation of responses within clinics, which was accounted for in the analysis by testing for clinic-level effects in repeated-measures analysis of variance (ANOVA). This is an important methodological choice, as much organizational research indicates the strong influence of the workgroup on individuals' perceptions and opinions of their immediate workplace (Bliese, Chan, & Ployhart, 2007; Van Mierlo, Vermunt, & Rutte, 2009).

The model was tested using structural equation modeling (SEM) following the procedures employed by Leiter and Maslach (2004). While there are several estimation methods available to test this model, SEM was chosen in order to compare model fit statistics with those reported in the literature. In addition, using a similar model allows us to evaluate the fit of the model in the primary care practice context. It also lets us determine the applicability of AWS for use as a causal discussion in this setting and for potentially informing improvements to physician worklife that could reduce burnout. SEM provides several estimation methods; we employed the standard maximum likelihood method. In this method, SEM requires a normality assumption, a considerable limitation (Preacher, Rucker, & Hayes, 2007). To correct for this limitation, the standard errors were bootstrapped using the Stata 12 SEM module.

**Findings**

The final sample size for the study was 153 unique physicians: 97 at baseline, 91 at the 3-month follow-up, and 56 at the final 6-month follow-up assessment. The final data set included 244 total responses, representing an average of 1.6 answers per unique physician. The survey was administered by the IDS via SurveyMonkey and delivered electronically via the organization's corporate email system to potential respondents. The organization gave potential respondents time during the work day to complete the survey. It was electronically available for completion over a 2-week period, and two follow-up emails were sent to potential respondents as a reminder. The average time to complete the survey was 11 minutes, with no statistically significant difference in time
to completion (p > .05) over the three data collection waves.

Overall response rates varied across each wave of data collection and were 65.5%, 54.9%, and 58.4%, respectively, for the baseline, 3-month, and 6-month assessments. These response rates are similar to and higher than those reported in the literature for physicians, which indicates a median physician response rate of 54.6% (Asch, Jedrziewski, & Christakis, 1997).

**Validity and Reliability of Key Measures**

All six dimensions of the AWS and all three dimensions of the MBI demonstrate a high level of internal reliability construct fit, with Cronbach’s alphas ranging from 0.72 to 0.88, in excess of the established threshold of 0.70. These values were consistent with the established literature on the validity of both instruments (Leiter et al., 2010; Leiter & Maslach, 2004; Leiter & Spence Laschinger, 2006). Results of the confirmatory factor analysis suggest the validity of the AWS and MBI measures, as expected based on empirical findings in the literature (Leiter et al., 2010; Maslach & Leiter, 2008). The model’s root mean square error of approximation (RMSEA) was 0.08, at the high end of the range of acceptability (0.05–0.08), although the 90% confidence interval lower bound is 0.00, another indication of goodness of fit for the model. Additionally, there were no significant modification indices, indicating no paths that would offer an improvement to the specified model for both the AWS and MBI measures.

Key study variables include the six dimensions of AWS (workload, control, community, fairness, rewards, and values) and the three components of burnout (EE, DEP, and SE), along with clinic and time. The AWS uses a five-point Likert scale, and all negatively worded items are reverse-scored (i.e., 5 = 1). To assess any potential differences among key study variables, by either clinic groups at baseline, ANOVAs were conducted for each of these variables. In only one case—fairness by clinic—was there a significant finding of differences at baseline (F = 2.60, p = 0.018).

Further, repeated-measures ANOVAs for each of the study variables were conducted to detect any significant differences in the means of the variables across clinic, time, and the interactions between these variables. This ANOVA analysis is detailed in Table 1. Only the AWS variable community demonstrated no differences across any of the proposed factor variables. Time was the most frequent significant difference, followed by clinic. Fairness was the only study variable to demonstrate a difference by any of the proposed interactions. The three burnout components—EE, DEP, and SE—showed significant variation by time only.

**Model Fit**

The hypothesis, modeled by Maslach and Leiter (2004) and presented and tested here using a primary care physician sample, was supported by the data. This conclusion is based on inspection of goodness-of-fit measures: RMSEA was 0.059; $\chi^2/df = 2.39 < 3$; CFI = 0.838; TLI = 0.830; 90% lower bound of RMSEA = 0.00. Together, these values indicate an acceptable fit of the
# Table 1

ANOVA of Key Study Variables

<table>
<thead>
<tr>
<th></th>
<th>Workload</th>
<th>Control</th>
<th>Community</th>
<th>Fairness</th>
<th>Rewards</th>
<th>Values</th>
<th>EE</th>
<th>DEP</th>
<th>SE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Time</td>
<td>n.s.</td>
<td>n.s.</td>
<td>n.s.</td>
<td>F = 4.42,</td>
<td>F = 6.66</td>
<td>F = 6.45</td>
<td>F = 3.30</td>
<td>F = 17.30</td>
<td>F = 36.13</td>
</tr>
<tr>
<td>(2 df)</td>
<td></td>
<td></td>
<td></td>
<td>p = .01</td>
<td>p = .00</td>
<td>p = .00</td>
<td>p = .04</td>
<td>p = .00</td>
<td>p = .00</td>
</tr>
<tr>
<td>Clinic</td>
<td>F = 2.65,</td>
<td>F = 2.61</td>
<td>n.s.</td>
<td>F = 4.79,</td>
<td>F = 2.07</td>
<td>F = 3.80</td>
<td>n.s.</td>
<td>n.s.</td>
<td>n.s.</td>
</tr>
<tr>
<td>(7 df)</td>
<td>p = .01</td>
<td>p = .01</td>
<td></td>
<td>p = .00</td>
<td>p = .05</td>
<td>p = .00</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Clinic* Time</td>
<td>n.s.</td>
<td>n.s.</td>
<td>n.s.</td>
<td>F = 4.72,</td>
<td>n.s.</td>
<td>n.s.</td>
<td>n.s.</td>
<td>n.s.</td>
<td>n.s.</td>
</tr>
<tr>
<td>(1 df)</td>
<td></td>
<td></td>
<td></td>
<td>p = .03</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: Total effects are not displayed when the estimated total effect is not statistically significant (n.s.). The total effect, when not statistically significant, is essentially indistinguishable from zero.

Note: EE = emotional exhaustion; DEP = depersonalization; SE = self-efficacy.
hypothesized model within the primary care physician context. Inspection of modification indices concluded that no significant additional paths exist that would improve the fit of the specified model. The results of this study are supported by like findings previously identified in the literature (Linzer et al., 2005; Linzer et al., 2002; Linzer et al., 2009; Williams et al., 2002; Williams, Manwell, Konrad, & Linzer, 2007). This model was tested for stability over time and by clinic assignment by comparing the specified model individually to a model with time and a model with clinic assignment. Using the difference in chi-square method (Yuan & Bentler, 2004), both revised models failed to demonstrate a statistically significant change in $\chi^2$ from the original model at the $p = .05$ significance level. Performing this analysis by clinic failed estimation due to small sample sizes within the clinic over time.

Direct and total effects were computed for the model and are displayed in Figure 2 and Table 2. Beginning with the direct effects, we find a similar pattern in significance and direction of effects as compared to the Leiter and Maslach (2004) model. The largest direct effects determined by this analysis were the AWS dimensions of workload and values, consistent with the original discussion of the model. Although results suggest the model fits the data, the direct path of reward's effect on values, which was supported in previous literature findings, was not supported by these data ($p = .380$).

Total effects followed the same pattern as previous studies and demonstrate the large total effect of control, mediated through workload, rewards, community, fairness, and, ultimately, values. This indicates the central role of control in the nature of the workplace and in the etiology of the three burnout components. The effect of rewards on each of the three dimensions of burnout was shown to be nonsignificant. The rationale for the rewards-to-EE path originally described by Leiter and Maslach (2004) was that when resources are expended to achieve a demand, and that effort fails to yield a reward (one possible outcome according to the COR theory), the expenditure of resources is depleting, resulting in stress reactions (e.g., EE). Their rationale was developed as a general worklife model applicable to all occupational classes. The model was originally tested among administrative employees in a university setting, a materially different occupational class than practicing physicians.

We posit three potential explanations for the lack of a significant finding between rewards and EE in this physician sample: (1) the relationship does not occur, (2) it does not result in a response, or (3) perhaps the model does not measure all rewards that physicians receive from their work. Inspection of the questions comprising the rewards dimension of the AWS strongly suggests a compensation-related concept of rewards, earlier referred to as extrinsic benefits or rewards. While physicians, and professionals in general, certainly must value compensation rewards, consideration of their professional status suggests there are other, more intrinsic rewards physicians seek from their occupation (Starr, 1982). The lack of specificity of the rewards dimension...
FIGURE 2
Direct Effects


Note. All negatively worded items are reverse-scored (i.e., 5 = 1). This means that for every unit that workload is rebalanced (i.e., improved, where demands are congruent with capacity), there is a 1.29-unit reduction in emotional exhaustion (EE). And for each unit increase in values congruence between physicians and the organization, there is a 0.61-unit reduction in EE.

The model specified by Leiter and Maslach (2004), with one curious difference: The nonsignificant direct path from rewards to EE leads to the lack of a total effect of rewards on DEP or SE. Rewards represent the external or extrinsic benefits accruing to physicians.

CONCLUSION
The AWS model for burnout focuses on workplace conditions as causes of burnout, which is consistent with the notion that burnout results from the relationship individuals have with their work. The data collected in this study fit the model first presented by Leiter and Maslach (2004), with one curious difference: The nonsignificant direct path from rewards to EE leads to the lack of a total effect of rewards on DEP or SE. Rewards represent the external or extrinsic benefits accruing to physicians.
TABLE 2
Model Total Effects

<table>
<thead>
<tr>
<th>MBI Dimension</th>
<th>AWS Dimension</th>
<th>Total Effect</th>
<th>p &gt; z</th>
</tr>
</thead>
<tbody>
<tr>
<td>Emotional Exhaustion</td>
<td>Workload</td>
<td>-1.29</td>
<td>.00</td>
</tr>
<tr>
<td></td>
<td>Control</td>
<td>-1.10</td>
<td>.00</td>
</tr>
<tr>
<td></td>
<td>Community</td>
<td>-0.11</td>
<td>.01</td>
</tr>
<tr>
<td></td>
<td>Fairness</td>
<td>-0.27</td>
<td>.00</td>
</tr>
<tr>
<td></td>
<td>Reward</td>
<td>n.s.</td>
<td>.38</td>
</tr>
<tr>
<td></td>
<td>Values</td>
<td>-0.61</td>
<td>.00</td>
</tr>
<tr>
<td>Depersonalization</td>
<td>Workload</td>
<td>-0.26</td>
<td>.00</td>
</tr>
<tr>
<td></td>
<td>Control</td>
<td>-0.31</td>
<td>.00</td>
</tr>
<tr>
<td></td>
<td>Community</td>
<td>-0.05</td>
<td>.01</td>
</tr>
<tr>
<td></td>
<td>Fairness</td>
<td>-0.13</td>
<td>.00</td>
</tr>
<tr>
<td></td>
<td>Reward</td>
<td>n.s.</td>
<td>.38</td>
</tr>
<tr>
<td></td>
<td>Values</td>
<td>-0.29</td>
<td>.00</td>
</tr>
<tr>
<td>Emotional Exhaustion</td>
<td>Workload</td>
<td>0.20</td>
<td>.00</td>
</tr>
<tr>
<td></td>
<td>Control</td>
<td>0.14</td>
<td>.00</td>
</tr>
<tr>
<td></td>
<td>Community</td>
<td>0.04</td>
<td>.01</td>
</tr>
<tr>
<td></td>
<td>Fairness</td>
<td>0.09</td>
<td>.00</td>
</tr>
<tr>
<td></td>
<td>Reward</td>
<td>n.s.</td>
<td>.38</td>
</tr>
<tr>
<td></td>
<td>Values</td>
<td>-0.20</td>
<td>.00</td>
</tr>
<tr>
<td>Emotional Exhaustion</td>
<td>Depersonalization</td>
<td>-0.04</td>
<td>.00</td>
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<td></td>
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</tbody>
</table>

Note. MBI = Maslach Burnout Inventory; AWS = Areas of Worklife Scale.

Note. Total effects are not displayed when the estimated total effect is not statistically significant (n.s.). The total effect, when not statistically significant, is essentially indistinguishable from zero.

in exchange for, or as a result of, their work. These rewards include financial, institutional, and social benefits (Leiter & Maslach, 2004). This lack of statistical significance suggests that among physicians, burnout is due to the actual nature of the work (e.g., workload, control), rather than the rewards of doing the work. This is important for managers to note for two reasons. First, physician burnout does not appear to be caused by changes to compensation amounts or to the compensation modality. Second, interventions to reduce burnout through physician-compensation changes alone are unlikely to be successful.

Only one previous study of the AWS-burnout relationship exists. This study employed a reduced model focused on the AWS constructs of control, workload, fairness, and values to determine the three burnout
components for nurses and physicians in Spain (Leiter et al., 2010). Results from this reduced model demonstrated a similar relationship among the four AWS variables that were included and the three components of burnout. The authors were able to separate models for nurses and physicians, thereby affording some comparison. Specifically, the results confirmed the important influence of control, as exogenous to the system, and its large total effects on the three burnout dimensions for physicians, as well as the large direct effect of workload on EE. While not a perfect comparison, the Leiter et al. (2010) findings support the conclusion that the AWS model is appropriate in a healthcare context, although the differences in model specification and the country/system-specific context differences are important caveats to this conclusion.

Suggestions for future research include replicating this study to test this model on physician populations that experience differing levels of control (e.g., independent physicians, specialists, surgeons). Given that the results of this study show the lack of a significant path between rewards and EE among practicing primary care physicians, gaining further insight into the generalizability of this finding would make both a theoretical and a practical contribution. Whatever the current reasons for burnout, or its historical rationale, its endemic situation among physicians is unsustainable and calls for further examination—for the good of the profession, the professionals, and the population.

For healthcare managers, this presents several important implications, including the following three: First, managers must recognize this phenomenon, catalog its impacts on physicians, and elevate awareness of the role that organizational changes may have on physician burnout. Raising awareness and including these issues in the calculus of managing physicians and practices are critical.

Second, healthcare managers seeking to improve physician engagement or reduce the level of burnout among practicing physicians can focus their intervention efforts in three primary areas: workload, values, and control. Increasing resources to match increases in workload will balance the demand and resources available to physicians to complete their work, thus neutralizing any increases in burnout. The litany of healthcare-delivery reform initiatives is certainly increasing the workload facing physicians and must be met with a proportionate increase in resources. Aligning and communicating organizational values with those of the physician workforce can reduce perceptions of disconnects between organizational goals and processes and the values inherent to the practice of medicine. Such disconnects create dissonance with physicians and increase their levels of burnout, most notably EE.

Lastly, managers need to be mindful of the tension that exists between integrating physicians into efficient organizational processes and the physicians’ need to maintain appropriate levels of control and autonomy over their practice of medicine. Managers need to create joint decision-making mechanisms involving both organizational and physician leaders to demonstrate the incorporation of multiple jurisdictions (the practice of management and the practice of
in order to respect the jurisdictions of medicine and the autonomy required by physicians to meet the varying demands of larger and more diverse patient panels. Organizational changes that infringe on workload, without offsetting changes to resources; misperceptions of congruence between organizational values and the values of the medical profession; and infringements on the control and autonomy of practice all will contribute to lower levels of engagement and higher overall levels of burnout.

One hopes that healthcare leaders will consider interventions focused on engaging physicians to help decrease burnout in various healthcare settings. Healthcare leaders should note the association between intentional organizational improvements and reductions in burnout, and thus should consider the impact of the workplace itself on the individual workers, in addition to focusing on the results or outcomes produced by the workplace. This is important in healthcare in general, but particularly so in primary care, where any number of process and quality improvements are under way to reduce costs and improve quality and the patient experience, but where the well-being of those engaged in the practice of medicine is rarely a priority.

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**PRACTITIONER APPLICATION**

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As leaders in healthcare, we are faced with an ever-growing number of issues that keep us up at night. A quick literature search reveals countless articles chronicling the ethical, operational, financial, and cultural challenges facing our industry today. For most of us, shortages in the availability of qualified medical professionals are one of the most critical issues to deal with in the short term.

The lack of qualified nurses, medical technologists, and other ancillary support personnel is well documented. While it is important not to diminish the effect of these shortages, their impact potentially could be dwarfed by the shortage of primary care physicians (PCPs). Reports vary regarding the size and scope of the shortage, but estimates indicate that the U.S. healthcare system will need an additional 52,000 PCPs by 2025 (Peterson et al., 2012). To put this number in perspective, we currently have approximately 209,000 actively practicing PCPs. These estimates are based on
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