Published in final edited form as:
J Occup Health Psychol. 2009 January ; 14(1): 84–95. doi:10.1037/a0013822.

Turnover intention and emotional exhaustion "at the top": Adapting the job demands-resources model to leaders of addiction treatment organizations

Hannah K. Knudsen,
Department of Behavioral Science, University of Kentucky

Lori J. Ducharme, and
Institute for Behavioral Research, University of Georgia

Paul M. Roman
Institute for Behavioral Research and Department of Sociology, University of Georgia

Abstract

Compared to the large literature on subordinate employees, there are few studies of emotional exhaustion and turnover intention for organizational leaders. There is little research that has extended the job demands-resources (JD-R) model of emotional exhaustion to leaders. In this study, we adapted the JD-R framework in order to analyze data collected from a sample of 410 leaders of addiction treatment organizations. We considered whether two job demands (performance demands and centralization) and two job resources (innovation in decision-making and long-range strategic planning) were associated with emotional exhaustion and turnover intention. We also examined whether emotional exhaustion fully or partially mediated the associations between the job-related measures and turnover intention. The results supported the partially mediated model. Both job demands were positively associated with emotional exhaustion, while the association for long-range strategic planning was negative. Emotional exhaustion was positively associated with turnover intention. Centralization and innovation in decision-making were also directly associated with turnover intention. Future research should continue to examine this theoretical framework among leaders of other types of organizations using more refined measures of demands and resources.

Keywords

turnover intention; emotional exhaustion; leadership; job demands; job resources

Across a rich cross-disciplinary research literature, many studies have considered the antecedents of turnover for subordinate employees (DeConinck & Stilwell, 2004). Much less attention has been given to the antecedents of turnover for individuals in positions of organizational leadership, even though the negative consequences of leader turnover may be particularly significant (Hambrick, Finkelstein, & Mooney, 2005). The costs of employee turnover are significant for organizations (Alexander, Bloom, & Nuchols, 1994), particularly in terms of search, recruitment, and training costs (Bannister & Griffeth, 1986). Recruiting for leadership positions presumably draws from a smaller pool of qualified applicants, which may increase the costs of successfully identifying a new leader. Leader turnover may generate turmoil among employees, creating multiple uncertainties about the future of the organization.

Correspondence concerning this article should be addressed to Hannah K. Knudsen, University of Kentucky, Department of Behavioral Science, 109 College of Medicine Office Building, Lexington, KY, 40536-0086.

Given that leaders spend considerable time engaging with the external environment (Wilson & Stranahan, 2000), turnover by upper-level managers may jeopardize resource acquisition and may alter or eliminate inter-organizational relationships (Staw, 1980).

It is perhaps because of these potential costs that the early literature on managerial turnover focused on its consequences rather than its antecedents (Harrison, Torres, & Kukalis, 1988). Classic studies of managerial succession largely drew on archival measures of organization-level variables, such as size, organizational demography, and performance (Grusky, 1961; Harrison et al., 1988; Salancik, Staw, & Pondy, 1980; Wagner, Pfeffer, & O'Reilly, 1984). These archival data did not allow for analyses of whether aspects of work, such as job demands and resources, were related to turnover in managerial occupations.

A further challenge is that modeling the associations between job-related variables and actual turnover requires longitudinal data, so cross-sectional research designs generally rely on turnover intention (Steel, 2002). Meta-analytic work by Griffeth et al. (2000) identifies turnover intention as a key predictor of actual turnover, with an effect size considerably larger than other job characteristics, rendering it a useful proxy for turnover. Although studies linking turnover intention and actual turnover in managerial samples are rare, data reported by Mitchel (1981) supported this association. Despite repeated calls for additional research on the antecedents of managerial turnover (Hambrick et al., 2005; Lee & Ashforth, 1993; Mitchel, 1981), most research remains focused on intention to quit among rank and file staff. While there are a few more recent studies examining turnover intention among managers (Herrbach, Mignonac, & Gatignon, 2004; Rosin & Korabik, 1995), these studies have not considered turnover intention in terms of its associations with emotional exhaustion, job demands, and job resources.

In order to address this gap in the literature, this research examines turnover intention and emotional exhaustion among upper-level managers, drawing on large samples of addiction treatment organizations. Specifically, we extend the job demands-resources (JD-R) theoretical framework to the leaders of addiction treatment organizations. We explore the types of job demands and resources that may be relevant in this organizational and occupational context. Our approach focuses on the role of emotional exhaustion as "a mediating state" (Halbesleben & Buckley, 2004, p. 863), in which we assess whether job demands and resources are associated with emotional exhaustion and examine the role of emotional exhaustion in linking these job-related factors with turnover intention.

Emotional Exhaustion and the Job Demands-Resources Model

Emotional exhaustion is a key dimension in the formulation of employee burnout developed by Maslach and colleagues (Maslach & Jackson, 1981; 1986) which remains the dominant approach in the research literature (Halbesleben & Demerouti, 2005; Kristensen, Borritz, Villadsen, & Christensen, 2005; Melamed, Shirom, Toker, Berliner, & Shapira, 2006). We focus on emotional exhaustion, or the degree to which one's emotional resources have been expended (Maslach & Jackson, 1981), for multiple reasons. First, several researchers have argued that emotional exhaustion is the most significant dimension of burnout (Cropanzano, Rupp, & Byrne, 2003; Maslach, Schaufeli, & Leiter, 2001; Schaufeli & Taris, 2005). Second, there is some evidence from longitudinal studies that emotional exhaustion precedes the development of the other dimensions of burnout (Toppinen-Tanner, Kalimo, & Mutanen, 2002). Emotional exhaustion also has negative implications for health (Cherniss, 1980; Melamed et al., 2006) and has been linked to poor job performance (Cropanzano et al., 2003; Taris, 2006; Wright & Cropanzano, 1998). A further and notably potent finding is that individual-level emotional exhaustion may spread to other members of the organization (Bakker, Schaufeli, Sixma, & Bosveld, 2001; Halbesleben & Buckley, 2004) .

Early research on emotional exhaustion focused on human service occupations, but the concept has been extended to other occupations with substantial social interaction demands (Cordes & Dougherty, 1993; Demerouti, Bakker, Nachreiner, and Schaufeli, 2001; Halbesleben & Demerouti, 2005; Halbesleben & Buckley, 2004; Lee & Ashforth, 1996; Maslach et al., 2001). In addition to the broadening scope of occupations studied, theoretical approaches to the study of emotional exhaustion have been developed and tested. One approach to theorizing the correlates of emotional exhaustion is the job demands-resources (JD-R) model, which was formulated by Demerouti et al. (2001). In the JD-R framework, aspects of work can largely be sorted into job demands and job resources (Bakker, Demerouti, de Boer, & Schaufeli, 2003; Halbesleben & Buckley, 2004). Demerouti et al. (2001) argue that job demands are the aspects of work that require significant effort by the individuals, including physical, cognitive, or emotional effort requirements made by the occupation and by the organization. Job resources are aspects of work that can mitigate job demands, facilitate the achievement of work-related goals, or provide opportunities for personal growth (Demerouti et al., 2001). According to the model, job demands are hypothesized to be more salient than job resources in predicting exhaustion (Demerouti et al., 2001), although empirical tests of the model suggest that job resources are still relevant (Bakker, Demerouti, & Verbeke, 2004; Janssen, Schaufeli, & Houkes, 1999; Schaufeli & Bakker, 2004). This prediction of stronger associations for job demands relative to job resources is consistent with other meta-analyses (Lee & Ashforth, 1996; Podsakoff, LePine, & LePine, 2007) .

Our approach, while drawing conceptually on the JD-R model, departs from previous research by examining two specific demands and two resources. Some of the empirical examinations of this model have treated demands and resources as aggregate measures that combine multiple types of demands and resources into these two variables (Bakker et al., 2004; Demerouti et al., 2001; Schaufeli & Bakker, 2004). In part, this aggregation of demands and resources is intended to avoid likely differences in the relevance of specific demands and resources by occupation (Demerouti et al., 2001). However, we consider specific job-related variables because the literature on the relevant job demands and resources for leaders of organizations is particularly sparse (Hambrick et al., 2005).

Job Demands and Resources for Organizational Leaders

Given the generally small literature on job demands and resources for organizational leaders, it is challenging to identify the relevant job-related factors for this occupation. In the few studies of mid-level managers, there has been support for the basic premise that job demands, such as role ambiguity, role conflict, and a lack of autonomy, are positively associated with emotional exhaustion (Cordes, Dougherty, & Blum, 1997; Lee & Ashforth, 1993; Mirvis, Graney, & Kilpatrick, 1999). These results are consistent with other studies indicating associations between negative working conditions and attitudinal outcomes, such as job dissatisfaction, in managerial samples (Volkwein & Zhou, 2003; DeConinck & Stilwell, 2004).

The existing literature offers less direction in conceptualizing the relevant demands and resources for those at the top of the organizational hierarchy. The overarching theme of most previous research is that mismanagement is the root of stress reactions for subordinate employees, to the extent that jobs are poorly designed (e.g. low autonomy, high work overload; Bakker, Demerouti, & Euwema, 2005) and that employees are treated unjustly (Cohen-Charash & Spector, 2002; Kelloway, Sivanthan, Francis, & Barling, 2005). While such arguments find empirical support for employees in subordinate positions, managers in the upper levels of organizations likely face unique demands and resources due to the nature of their work, which is “qualitatively different from work at other organizational levels” (Hambrick et al., 2005, p. 474).

We consider two types of job demands and two types of resources as potential correlates of emotional exhaustion for leaders of addiction treatment organizations. First, leaders are ultimately responsible for the organization's performance, and particularly in healthcare organizations, upper-level managers must constantly seek resources in an ever-changing environment (Wilson & Stranahan, 2000). Hambrick et al. (2005) argue that there is variability in the intensity of performance demands faced by upper-level managers. In addiction treatment organizations, demands for above-average organizational performance may vary depending on the stakeholders to whom they are accountable. For example, some treatment facilities are operated as for-profit entities, while others are non-profit organizations operated within hospitals or as standalone facilities (Roman, Ducharme, & Knudsen, 2006), suggesting that demands may vary between organizations.

A second job demand that leaders in addiction treatment organizations may face is the degree to which the organization relies on a centralized, hierarchical structure for decision-making (Hage & Aiken, 1967). There is a long tradition of considering the implications of power and control for employee mental health that dates back to the 1970s (Ouchi & Johnson, 1978). Ample evidence has documented that employee participation in decision-making (i.e. lower centralization) is associated with lower emotional exhaustion, greater job satisfaction, and lower turnover intention (Allen, Shore, & Griffeth, 2003; Bakker et al., 2005; Kim, 2002; Lee & Ashforth, 1996). The association between centralization and the well-being of leaders has been understudied. Although hierarchies of authority have long been thought to yield efficiencies for organizations (Grusky, 1961), centralization means that leaders must make a greater number of day-to-day decisions which may simply create quantitative overload for the leader. We propose the following hypothesis about these two job demands:

> *Hypothesis 1*. Performance demands and centralization are positively associated with emotional exhaustion

Two job resources that may be beneficial for managers are the extent to which the organizational context supports innovation in decision-making and emphasizes long-term strategic planning. Research focused on subordinate employees often highlights the importance of job autonomy for employee well-being (Bakker et al., 2005; Karasek & Theorell, 1990; Lee & Ashforth, 1996). While managers at the top of the organizational hierarchy likely have more personal autonomy than subordinate employees, organizational contexts may vary in how much latitude that managers have to make innovative or risky strategic decisions (Hambrick et al., 2005). An organizational context that supports innovation in decision-making by managers may be analogous to the construct of autonomy for subordinate employees, in that greater support for innovation in decision-making means that managers have greater flexibility when they make key decisions. Such support may be a resource in performing their work as organizational leaders and attaining key organizational goals. When there is not strong organizational support for innovation in decision-making, managers may feel that their choices are constrained by entrenched organizational norms and pressures from external constituents (Khandwalla, 1977). It may be beneficial, in terms of lower emotional exhaustion, for managers to perceive that the organization supports this type of strategic flexibility and autonomy.

Strategic planning refers to the set of tools and processes that may be used to help organizations reach their goals, including both short and long-term objectives (Bryson, 2004). Such activities may be difficult in organizations operating in highly turbulent environments (Grant, 2003). However, greater emphasis on long-range strategic planning within the organization may reduce stress for upper managers by increasing their sense of control over the organizational performance. Lee and Ashforth's (1996) meta-analysis of the burnout literature noted a negative association between engagement in long-term strategic planning efforts (which they referred to as task orientation) and emotional exhaustion. Thus, we propose:

Hypothesis 2. Organizational support for innovation in decision-making and long-term strategic planning are negatively associated with leader emotional exhaustion.

In addition to adapting the job demands-resources framework to managerial emotional exhaustion, we also consider the role that exhaustion plays between demands/rewards and turnover intention. There is ample evidence suggesting that emotional exhaustion is positively associated with turnover intention among rank and file employees (Blankertz & Robinson, 1997; Cropanzano et al., 2003; Lee & Ashforth, 1996). In a sample of managers, Lee and Ashforth (1993) reported a positive association between these measures. There are multiple theoretical perspectives that can be invoked to explain this relationship. Some argue that individuals engage in withdrawal behaviors (of which turnover intention is an example) as a coping method to reduce the psychological costs of emotional exhaustion (Jex, 1998; Schaufeli & Bakker, 2004). Social exchange theorists argue that withdrawal behaviors reflect a response to perceived imbalances in the exchange relationship between an employee and his or her employing organization (Cropanzano et al., 2003; Cropanzano, Goldman, & Benson, 2005). Either explanation would suggest the following hypothesis:

Hypothesis 3. Emotional exhaustion is positively associated with turnover intention.

An important empirical question is whether exhaustion mediates the relationships between job demands/resources and turnover intention for organizational leaders. Numerous studies show how other attitudinal dimensions mediate to varying degrees the relationships between job stressors and turnover intention (Griffeth et al., 2000). Given the limited research on turnover intention among organizational leaders, it is unclear whether a model of full mediation or partial mediation will better fit the data. In a fully mediated model, associations between the job-related variables and turnover intention would be completely explained by their associations with emotional exhaustion. In a partially mediated model, there would be empirical evidence of both direct associations between the job measures and turnover intention as well as indirect associations via emotional exhaustion. Thus, in addition to examining the three hypotheses, we consider as a research question whether there is stronger support for emotional exhaustion functioning as a full or as a partial mediator of the relationships between job demands/resources and turnover intention.

Method

Participants and procedures

From late 2002 to early 2004, face-to-face interviews were conducted with the top administrators of 363 publicly funded and 403 privately funded substance abuse treatment organizations as part of the National Treatment Center Study (NTCS). A two-stage sampling process generated nationally representative samples of these two sectors, first by randomly sampling US counties and then randomly selecting agencies within the sampled counties. About 80% of sampled public facilities and 88% of private facilities participated in these interviews. The primary objective of the face-to-face interviews was to collect organization-level data on the delivery of substance abuse treatment services in these settings.

At the conclusion of the interview, these participants were invited to participate in additional data collection via mailed questionnaires, which are the main source of data for this research. One questionnaire was distributed per organization. Administrators were asked to provide informed consent and return the questionnaire, for which they received a US$40 honorarium. Of the 766 administrators, 499 respondents returned a questionnaire, yielding a participation rate of 65.1%. This rate of response is higher than the average response rate of 32% reported in a recent meta-analysis of studies of top-level managers (Cycyota & Harrison, 2006).

Measures

The questionnaire covered a range of background, organizational, and job-level variables. For this analysis, we consider two job demands, two job resources, emotional exhaustion, and turnover intention. Items for the job demands and resources are presented in the Appendix. The first job demand was performance demands (α = .78), which was measured using four items adapted from Khandwalla (1977). The second job demand was centralization (α = .84), as measured by four items adapted from Hage and Aiken (1967). Respondents were asked about two job resources. The first job resource was organizational support for innovation in decision-making (α = .78) using three items that were adapted from Covin and Slevin (1989). The second job resource was long-range strategic planning (α = .82), which was measured by five items adapted from Khandwalla (1977). For each of these constructs, responses ranged from 1 to 7 with greater values indicating stronger endorsement of the construct.

Nine items, developed by Maslach and Jackson (1986), measured the mediating variable of emotional exhaustion (α = .93). The Likert response categories for these items ranged from 1 (not at all true) to 7 (definitely true).

The endogenous variable in the model was turnover intention (α = .88), as measured by three items adapted from Walsh, Ashford, & Hill (1985). Respondents rated their agreement with these statements using a Likert response format that ranged from 1 (strongly disagree) to 7 (strongly agree).

The analysis includes six control variables measuring the socio-demographic characteristics of the respondent. These control variables were: age in years, gender (1 = female, 0 = male), racial/ethnic minority status (1 = racial/ethnic minority, 0 = white), educational attainment (1 = master's level degree or higher, 0 = less than master's level degree), tenure at the center in years, and earnings. The measure of earnings originally consisted of nine categories (less than $30,000, $30,000–$40,000, $40,001–$50,000, $50,001–$60,000, $60,001–$70,000, $70,001–$80,000, $80,001–$90,000, $90,000–$100,000, and greater than $100,000). Each category was recoded to its midpoint, and Parker and Fenwick's (1983) method for estimating the value of the final open-ended category was used for analytic purposes. The resulting earnings measure is expressed in thousands of dollars.

Data Analysis

Our analyses are based on the 410 leaders who provided complete data on these measures, representing 53.5% of the original pool of 766 potential respondents. We examined two issues related to non-response bias using Stata 10.0 (College Station, TX) to perform these analyses and to calculate descriptive statistics for the sample. Although we have no data on the characteristics of non-respondents, we estimated a logistic regression model of receiving a completed questionnaire (1 = received questionnaire, 0 = no questionnaire received) on a set of basic organizational characteristics. We examined whether there were significant differences in the likelihood of receiving the questionnaire by the center's funding type (public vs. private), government ownership, profit status, accreditation status, center age, and center size in total employees. None of these variables were significantly associated with the probability of receiving the questionnaire. To examine potential bias due to item non-response, we compared respondents with complete data to those who were excluded due to missing data. For each variable, we used chi-square tests or t-tests, depending on the level of measurement. There were no significant differences between these two groups.

The relationships between the variables were estimated using Mplus version 4.21, a structural equation modeling software package (Muthen & Muthen, 2004). This software allows for the

estimation of a measurement model and a structural model of hypothesized relationships. Some residual errors within constructs were allowed to correlate in order to improve model fit. The confirmatory factor results (not shown) indicated that all items loaded on their factors with loadings greater than .50. Using these unobserved latent measures, structural models of the hypothesized relationships between latent variables were estimated. Mplus produces measures of overall model fit, generates estimates of the hypothesized associations (unstandardized and standardized coefficients, standard errors, and t-tests), calculates total effects, and provides measures of the proportion of variance explained.

Our approach to evaluating emotional exhaustion as a mediator drew on the technique articulated by Baron and Kenny (1986). They argue that tests of mediation first require significant associations between the exogenous variables and the endogenous variable. To address this issue, we estimated a structural equation model of turnover intention that included only direct associations for job demands and resources. Once direct relationships are established, then structural equation models could be estimated to examine whether full or partial mediation better fit the data. Full mediation would be indicated for a given demand or resource if three conditions were met. First, there would a significant relationship between the job-related variable and emotional exhaustion. Second, there would be a significant association between emotional exhaustion and turnover intention. Finally, there would not be a significant association between that variable and turnover intention, once the indirect path via emotional exhaustion was specified. Partial mediation would be indicated if the first two conditions were met, but if there was still a remaining significant association between the variable and turnover intention. We estimated three structural equation models of turnover intention: a fully mediated model, a partially mediated model that included direct and indirect paths, and a trimmed partially mediated model that only included significant associations from the partially mediated model. All three models controlled for the socio-demographic variables on emotional exhaustion and turnover intention.

Results

Descriptive Statistics

This sample of 410 substance abuse treatment center administrators revealed low levels of emotional exhaustion and turnover intention, as seen in Table 1. When examined as additive indices that ranged from 1 to 7, the mean for emotional exhaustion was 2.39 (SD = 1.20), while the mean for turnover intention was 1.98 (SD = 1.50). The average age was about 49.69 years (SD = 8.20). Approximately half of the sample was female (47.3%) and 85.1% of the sample was white. The majority held at least a master's level degree (67.8%). The average administrator had worked for 9.61 years at the center (SD = 7.19) and earned nearly $60,000 per year (M = 59.63, SD = 20.85).

Preliminary Structural Equation Model of Turnover Intention

Prior to estimating the models of turnover intention that included emotional exhaustion as a mediator, it was necessary to establish whether there were direct associations between turnover intention and the measures of job demands and resources. In this preliminary analysis, we estimated a structural equation model of turnover intention on the four job-related variables and the control variables. This analysis indicated that the performance demands ($\beta = .185$, $p<.05$) and centralization ($\beta = .185$, $p<.001$) were positively associated with turnover intention, while the associations for innovation in decision-making ($\beta = -.141$, $p<.05$) and long-range strategic planning ($\beta = -.219$, $p<.01$) were negative. This model of the direct associations between the job demands/resources and turnover intention fit the data well (RMSEA = .045, SRMR = .040, CFI = .948, TLI = .932). About 16.1% of the variance in turnover intention was explained by the model.

Structural Equation Models of Turnover Intention

Three structural equation models were estimated and compared for model fit. The first model treated emotional exhaustion as a full mediator of the associations between the job demands and resources variables and turnover intention. This initial model of full mediation fit the data well (RMSEA = .042, SRMR = .046, CFI = .946, TLI = .937, BIC = 47931.563; Hu & Bentler, 1999). In the second model, emotional exhaustion was hypothesized to partially mediate the associations between the job-related variables and turnover intention; that is to say, the model was specified to include direct associations between the job-related measures and turnover intentions as well as indirect associations via emotional exhaustion. Although the difference was modest, the fit statistics for the partially mediated model were better than the fully mediated model (RMSEA = .041, SRMR = .044, CFI = .949, TLI = .940, BIC = 47933.875). Finally, the trimmed model eliminated the nonsignificant latent variable paths from the partially mediated model, which further improved model fit as seen in the small decrease in the BIC (RMSEA = .041, SRMR = .044, CFI = .949, TLI = .940, BIC = 47919.141). This trimmed model of partial mediation explained 14.5% of the variance in emotional exhaustion and 26.2% of the variance in turnover intention.

This final trimmed model of partial mediation, which appears in Figure 1, allows for the evaluation of our hypotheses. Hypothesis 1 received support. The job demands of performance demands ($\beta = .221$, $p<.01$) and centralization ($\beta = .151$, $p<.01$) were both significantly associated with emotional exhaustion. Hypothesis 2 was only partially supported. The job resource of long-range strategic planning was negatively associated with emotional exhaustion ($\beta = -.377$, $p<.001$), but the association for organizational support for innovation in decision-making was not significant. Consistent with the literature on emotional exhaustion and turnover intention, these data provided strong support for Hypothesis 3. Greater emotional exhaustion was associated with greater turnover intention in this sample of leaders of addiction treatment organizations ($\beta = .349$, $p<.001$).

The nature of the associations between the job demands/resources and turnover intention was complex. The measure of performance demands was only associated with turnover intention indirectly (indirect $\beta = .077$, $p<.05$), indicating that exhaustion completely mediated the association found in the preliminary analysis. However, centralization was both directly ($\beta = .142$, $p<.01$) and indirectly ($\beta = .053$, $p<.01$) associated with turnover intention, yielding a total effect of .195 ($p<.001$). For the job resource of innovation in decision-making, only the direct association on turnover intention was significant ($\beta = -.145$, $p<.05$); emotional exhaustion did not mediate this relationship. In contrast, the job resource of long-range strategic planning was only indirectly associated with turnover intention (indirect $\beta = -.132$, $p<.001$); emotional exhaustion completely mediated the association between long-range strategic planning and turnover intention.

Of the control variables, there were few significant associations. The only control variable associated with emotional exhaustion was age, while educational attainment and tenure were related to turnover intention. Older leaders reported significantly less emotional exhaustion than younger administrators ($\beta = -.109$, $p<.05$). Turnover intention was significantly greater for leaders with a master's level degree or higher when compared to leaders with less than a master's level degree ($\beta = .385$, $p<.001$). In addition, there was a negative association between tenure and turnover intention ($\beta = -.145$, $p<.01$).

Discussion

This research, using data from large samples of leaders of addiction treatment organizations, adapted the job demands-resources (JD-R) framework to this understudied occupation. In contrast to other research that has used aggregate measures of demands and resources, this

research considered whether two job demands and two job resources were associated with emotional exhaustion. These data suggest that performance demands and centralization are positively associated with emotional exhaustion, while long-term strategic planning is negatively associated with emotional exhaustion. Although the original JD-R model suggests that demands are more important than resources in predicting exhaustion (Demerouti et al., 2001), our findings are less clear. On the one hand, both demands were significant, while only one resource was associated with exhaustion. However, the magnitude of the association for the resource of long-term strategic planning was considerably greater than the two job demand coefficients. Additionally, the measure of innovation in decision-making was not significantly associated with emotional exhaustion, suggesting that it may not represent a job resource with regard to this dimension of burnout. It may be the case that organizational support for innovation in decision-making intersects with leaders' personalities, such that it may be perceived by some leaders as a resource and by others as a demand. Further consideration of these variables in samples of other types of organizational leaders is clearly necessary in order to establish whether these findings generalize to other organizational contexts.

In addition, this research examined the relationships between these job-related variables and turnover intention as well as whether emotional exhaustion mediated these associations. Consistent with studies of rank-and-file employees and earlier work on managers (Lee & Ashforth, 1993), there was a positive association between emotional exhaustion and turnover intention. The types of relationships between turnover intention and the measures of job demands and resources took varying forms. Of the two job demands, the association between performance demands and turnover intention was completely mediated by emotional exhaustion. In contrast, centralization was both directly associated with turnover intention and indirectly related through its association with emotional exhaustion. The two job resources also differed in how they were related to turnover intention. For the measure of innovation in decision-making, only the direct path was significant, while long-range strategic planning's association with turnover intention was completely mediated by emotional exhaustion. Thus, there is some evidence that job demands and resources are related to turnover intention, but it is also clear that other processes are at work.

The finding regarding the job demand of centralization was particularly provocative. A long tradition of research involving employees in subordinate positions has repeatedly found that employees benefit from de-centralized decision-making (House, 1981; Karasek & Theorell, 1990). Little attention had been paid to whether centralized decision-making is associated with the well-being of managers. Administrators in addiction treatment organizations characterized by more centralized decision-making structures reported greater emotional exhaustion and greater turnover intention, suggesting that greater involvement of rank-and-file employees in decision-making may also have implications for the emotional well-being and retention of leaders.

There are several limitations that must be noted. First, the cross-sectional research design limits the ability to establish causality. Longitudinal research using samples of subordinate employees has suggested that models of regular causation, in which job characteristics are hypothesized to precede employee well-being, tend to fit better than models of reverse or reciprocal causation (De Jonge et al., 2001; Ter Doest & De Jonge, 2006), lending some credence to how we organized our model. However, a longitudinal design is clearly needed to address the issue of causality.

Second, these results are from upper-level managers in one type of healthcare organization. As such, it is unclear if these results generalize to managers in other types of healthcare organizations or other industries. Replication in other samples is necessary to further understand these associations. In particular, the examination of these hypotheses using data

from a nationally representative sample of organizational leaders would be particularly valuable.

Another limitation of the study design was the reliance on the emotional exhaustion items from the MBI, an instrument which have been critiqued in recent years (Demerouti et al., 2001; Halbesleben & Buckley, 2004; Halbesleben & Demerouti, 2005). In particular, the wording of all of the items in the same direction may lead to biased responses. New scales measuring exhaustion, such as the Copenhagen Burnout Inventory (Kristensen et al., 2005) and the Oldenburg Burnout Inventory (Halbesleben & Demerouti, 2005), have recently been validated in English-speaking samples. Given the timing of our data collection, we were unable to use these new measures. Future research should continue to examine the measurement of emotional exhaustion.

An additional issue related to measurement is the set of job demands and resources that were included in this research. Some might argue that these are simply measures of organizational context rather than measures of jobs. In part, it is difficult to conceptualize which demands and resources should be measured since there is a limited literature on the occupation of organizational leaders (Hambrick et al., 2005). The original job demands-resources model largely reflects dimensions of the mismanagement of subordinate employees (e.g. supervisors who are unsupportive, make unreasonable workload demands, or do not give employees enough control over their own work). Such domains of mismanagement are less applicable for those “at the top” of the organization, limiting the feasibility of applying the original measures used in the JD-R model to this occupation. Our approach was to consider elements of demands and resources within the context of addiction treatment organizations that we hypothesized would shape the experiences of leaders’ jobs. Our rationale was that these jobs are embedded within organizations which make varying demands and offer varying resources to those who hold these positions. We recognize that we are stretching the paradigm of the JD-R model in our attempt to adapt it to organizational leaders. The measures used had some limitations, which may explain why the construct of innovation in decision-making was not associated with emotional exhaustion. While the results were promising in terms of being mostly consistent with the fundamental logic of the JD-R model, there is a need for additional thought about what other demands and resources are salient for leaders and how best to measure those constructs.

Future research on leaders’ emotional exhaustion and turnover intention might also consider the intersection of individual-level factors and job-related factors within organizational contexts. For example, there is an emerging literature on how aspects of personality, such as neuroticism (Goddard, Patton, & Creed, 2004; Zellars, Perrewe, & Hochwarter, 2000), extraversion (Zellars, Hochwarter, Perrewe, Hoffman, & Ford, 2004), and self-esteem (Janssen, Schaufeli, & Houkes, 1999) explain additional variance in models of emotional exhaustion, although some have argued that personality factors do not equal the magnitude of work factors in explaining exhaustion (Melamed et al., 2006; Shirom, 2005). Personality characteristics may also represent important moderators (Toppinen-Tanner et al., 2002). In addition, the fit between individual-level factors, such as work-related preferences, and the characteristics of the work environment may also contribute to emotional exhaustion (Halbesleben & Buckley, 2004; Maslach et al., 2001). We were unable to examine personality or work-related preferences in our research. More research that considers both job-level and individual-level factors is needed.

Finally, all data were self-reported and collected from a single respondent which certainly raises the issue of common method variance (Spector, 2006). Future research might utilize a multi-method design to test whether these relationships hold if the measures of job demands and resources are reported by others in the organization. Given the relatively small literature on emotional exhaustion and turnover intention in organizational leaders, a cross-sectional

design using self-reported data was a reasonable choice for exploring a set of novel hypotheses (Theorell & Hasselhorn, 2005). However, the current findings should be interpreted with caution.

These results suggest several directions for future research on emotional exhaustion and turnover intention for organizational leaders. These data from leaders of addiction treatment organizations indicate that job demands and resources are associated with turnover intention through direct and indirect relationships. Although this research provided some support for adapting the job demands- resources model to exhaustion and turnover intention in organizational leaders, future research is needed to address the substantive issues and methodological limitations of the current study.

References

Alexander JA, Bloom JR, Nuchols BA. Nursing turnover and hospital efficiency: An organization-level analysis. Industrial Relations 1994;33:505–520.

Allen DG, Shore LM, Griffeth RW. The role of perceived organizational support and supportive human resource practices in the turnover process. Journal of Management 2003;29:99–118.

Bakker AB, Demerouti E, de Boer E, Schaufeli WB. Job demands and job resources as predictors of absence duration and frequency. Journal of Vocational Behavior 2003;62:341–356.

Bakker AB, Demerouti E, Verbeke W. Using the job demands-resources model to predict burnout and performance. Human Resource Management 2004;43:83–104.

Bakker AB, Demerouti E, Euwema MC. Job resources buffer the impact of job demands on burnout. Journal of Occupational Health Psychology 2005;10:170–180. [PubMed: 15826226]

Bakker AB, Schaufeli W, Sixma HJ, Bosveld W. Burnout contagion among general practitioners. Journal of Social and Clinical Psychology 2001;20:82–98.

Bannister BD, Griffeth RW. Applying a causal analytic framework to the Mobley, Horner, and Hollingsworth (1978) turnover model: A useful reexamination. Journal of Management 1986;12:433–443.

Baron RM, Kenny DA. The moderator-mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations. Journal of Personality and Social Psychology 1986;51:1173–1182. [PubMed: 3806354]

Blankertz LE, Robinson SE. Turnover intentions of community mental health workers in psychosocial rehabilitation services. Community Mental Health Journal 1997;33:517–529. [PubMed: 9435998]

Bryson, JM. Strategic planning for public and nonprofit organizations: A guide to strengthening and sustaining organizational achievement. San Francisco, CA: Jossey-Bass; 2004.

Cherniss, C. Professional burnout in human service organizations. New York: Praeger; 1980.

Cohen-Charash Y, Spector PE. The role of justice in organizations: A meta-analysis. Organizational Behavior and Human Decision Processes 2002;86:278–321.

Cordes CL, Dougherty TW. A review and integration of research on job burnout. Academy of Management Review 1993;18:621–656.

Cordes CL, Dougherty TW, Blum M. Patterns of burnout among managers and professionals: A comparison of models. Journal of Organizational Behavior 1997;18:685–701.

Covin JG, Slevin DP. Strategic management of small firms in hostile and benign environments. Strategic Management Journal 1989;10:75–87.

Cropanzano, R.; Goldman, BM.; Benson, L. Organizational justice. In: Barling, J.; Kelloway, EK.; Frone, MR., editors. Handbook of Work Stress. Thousand Oaks, CA: Sage; 2005. p. 63-87.

Cropanzano R, Rupp DE, Byrne ZS. The relationship of emotional exhaustion to work attitudes, job performance, and organizational citizenship behaviors. Journal of Applied Psychology 2003;88:160–169. [PubMed: 12675403]

Cycyota CS, Harrison DA. What (not) to expect when surveying executives: A meta-analysis of top manager response rates and techniques over time. Organizational Research Methods 2006;9:133–160.

DeConinck JB, Stilwell CD. Incorporating organizational justice, role states, pay satisfaction and supervisor satisfaction in a model of turnover intentions. Journal of Business Research 2004;57:225–231.

De Jonge J, Dormann C, Janssen PPM, Dollard ME, Landeweerd JA, Nijhuis EJN. Testing reciprocal relationships between job characteristics and psychological well-being: A cross-lagged structural equation model. Journal of Occupational and Organizational Psychology 2001;75:33–58.

Demerouti E, Bakker AB, Nachreiner F, Schaufeli WB. The job demands-resources model of burnout. Journal of Applied Psychology 2001;86:499–512. [PubMed: 11419809]

Goddard R, Patton W, Creed P. The importance and place of neuroticism in predicting burnout in employment service case managers. Journal of Applied Social Psychology 2004;34:282–296.

Grant RM. Strategic planning in a turbulent environment: Evidence from the oil majors. Strategic Management Journal 2003;24:491–517.

Griffeth RW, Hom PW, Gaertner S. A meta-analysis of antecedents and correlates of employee turnover: Update, moderator tests, and research implications for the next millennium. Journal of Management 2000;26:463–488.

Grusky O. Corporate size, bureaucratization, and managerial succession. American Journal of Sociology 1961;67:261–269.

Hage J, Aiken M. Program change and organizational properties: A comparative analysis. American Journal of Sociology 1967;72:503–519.

Halbesleben JRB, Buckley MR. Burnout in organizational life. Journal of Management 2004;30:859–879.

Halbesleben JRB, Demerouti E. The construct validity of an alternative measure of burnout: Investigating the English translation of the Oldenburg Burnout Inventory. Work & Stress 2005;19:208–220.

Hambrick DC, Finkelstein S, Mooney AC. Executive job demands: New insights for explaining strategic decisions and leader behaviors. Academy of Management Review 2005;30:472–491.

Harrison JR, Torres DL, Kukalis S. The changing of the guard: Turnover and structural change in top-management positions. Administrative Science Quarterly 1988;33:211–232.

Herrbach O, Mignonac K, Gatignon AL. Exploring the role of perceived external prestige on managers' turnover intentions. International Journal of Human Resource Management 2004;15:1390–1407.

House, JS. Work stress and social support. London: Addison-Wesley; 1981.

Hu L, Bentler PM. Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. Structural Equation Modeling 1999;6:1–55.

Janssen PPM, Schaufeli WB, Houkes I. Work-related and individual determinants of the three burnout dimensions. Work & Stress 1999;13:74–86.

Jex, SM. Stress and job performance: Theory, research, and implications for managerial practice. Thousand Oaks, CA: Sage; 1998.

Karasek, R.; Theorell, T. Healthy work: Stress, productivity and the reconstruction of working life. New York: Basic Books; 1990.

Kelloway, EK.; Sivanthan, N.; Francis, L.; Barling, J. Poor leadership. In: Barling, J.; Kelloway, EK.; Frone, MR., editors. Handbook of work stress. Thousand Oaks, CA: Sage; 2005. p. 89-112.

Khandwalla, PN. The design of organizations. New York: Harcourt, Brace, Jovanovich; 1977.

Kim S. Participative management and job satisfaction: Lessons for management leadership. Public Administration Review 2002;62:231–241.

Kristensen TS, Borritz M, Villadsen E, Christensen KB. The Copenhagen Burnout Inventory: A new tool for the assessment of burnout. Work & Stress 2005;19:192–207.

Lee RT, Ashforth BE. A further examination of managerial burnout: Toward an integrated model. Journal of Organizational Behavior 1993;14:3–20.

Lee RT, Ashforth BE. A meta-analytic examination of the correlates of the three dimensions of job burnout. Journal of Applied Psychology 1996;81:123–133. [PubMed: 8603909]

Maslach C, Jackson SE. The measurement of experienced burnout. Journal of Occupational Behavior 1981;2:99–113.

Maslach, C.; Jackson, SE. Maslach burnout inventory manual. Vol. 2nd ed. Palo Alto, CA: Consulting Psychologists Press; 1986.

Maslach C, Schaufeli WB, Leiter MP. Job burnout. Annual Review of Psychology 2001;52:397–422.

Melamed S, Shirom A, Toker S, Berliner S, Shapira I. Burnout and the risk of cardiovascular disease: Evidence, possible causal paths, and promising research directions. Psychological Bulletin 2006;132:327–353. [PubMed: 16719565]

Mirvis D, Graney MJ, Kilpatrick AO. Trends in burnout and related measures of organizational stress among leaders of Department of Veterans Affairs medical centers. Journal of Healthcare Management 1999;44:353–365. [PubMed: 10621139]

Mitchel JO. The effect of intentions, tenure, personal, and organizational variables on managerial turnover. Academy of Management Journal 1981;24:742–751.

Muthen, LK.; Muthen, BO. Mplus user's guide. Vol. 3rd ed. Los Angeles: Muthen & Muthen; 2004.

Ouchi WG, Johnson JB. Types of organizational control and their relationship to emotional well-being. Administrative Science Quarterly 1978;23:293–317.

Parker RN, Fenwick R. The Pareto curve and its utility for open-ended income distributions in survey research. Social Forces 1983;61:872–885.

Podsakoff NP, LePine JA, LePine MA. Differential challenge stressor-hindrance stressor relationships with job attitudes, turnover intentions, turnover, and withdrawal behavior: A meta-analysis. Journal of Applied Psychology 2007;92:438–454. [PubMed: 17371090]

Roman PM, Ducharme LJ, Knudsen HK. Patterns of organization and management in private and public substance abuse treatment programs. Journal of Substance Abuse Treatment 2006;31:235–243. [PubMed: 16996386]

Salancik GR, Staw BM, Pondy LR. Administrator turnover as a response to unmanaged organizational interdependence. Academy of Management Journal 1980;23:422–437.

Schaufeli WB, Bakker AB. Job demands, job resources, and their relationship with burnout and engagement: A multi-sample study. Journal of Organizational Behavior 2004;25:293–315.

Schaufeli WB, Taris TW. The conceptualization and measurement of burnout: Common grounds and worlds apart. Work & Stress 2005;19:256–262.

Shirom A. Reflections on the study of burnout. Work & Stress 2005;19:263–270.

Spector PE. Method variance in organizational research: Truth or urban legend? Organizational Research Methods 2006;9:221–232.

Staw BM. The consequences of turnover. Journal of Occupational Behavior 1980;1:253–273.

Steel RP. Turnover theory at the empirical interface: Problems of fit and function. Academy of Management Review 2002;27:346–360.

Taris TW. Is there a relationship between burnout and objective performance? Acritical review of 16 studies. Work & Stress 2006;20:316–334.

Ter Doest L, De Jonge J. Testing causal models of job characteristics and employee well-being: A replication study using cross-lagged structural equation modeling. Journal of Occupational and Organizational Psychology 2006;79:499–507.

Theorell T, Hasselhorn HM. On cross-sectional questionnaire studies of relationships between psychosocial conditions at work and health—are they reliable? International Archives of Occupational and Environmental Health 2005;78:517–522. [PubMed: 15995878]

Toppinen-Tanner S, Kalimo R, Mutanen P. The process of burnout in white-collar and blue-collar jobs: Eight year prospective study of exhaustion. Journal of Organizational Behavior 2002;23:555–570.

Volkwein JF, Zhou Y. Testing a model of administrative job satisfaction. Research in Higher Education 2003;44:149–171.

Wagner WG, Pfeffer J, O'Reilly CA. Organizational demography and turnover in top-management groups. Administrative Science Quarterly 1984;29:74–92.

Walsh JP, Ashford SJ, Hill TE. Feedback obstruction: The influence of the information environment on employee turnover intentions. Human Relations 1985;38:23–36.

Wilson CN, Stranahan H. Organizational characteristics associated with hospital CEO turnover. Journal of Healthcare Management 2000;45:395–404. [PubMed: 11187360]

Wright TA, Cropanzano R. Emotional exhaustion as a predictor of job performance and voluntary turnover. Journal of Applied Psychology 1998;83:486–493. [PubMed: 9648526]

Zellars KL, Hichwarter WA, Perrewe PL, Hoffman N, Ford EW. Experiencing job burnout: The roles of positive and negative traits and states. Journal of Applied Social Psychology 2004;34:887–911.

Zellars KL, Perrewe PL, Hochwarter WA. Burnout in health care: The role of the five factors of personality. Journal of Applied Social Psychology 2000;30:1570–1598.

Acknowledgments

The authors gratefully acknowledge the research support of the National Institute on Drug Abuse (Grant Nos. R01DA14482 and R01DA13110).

Appendix

Appendix

Measurement of Constructs

Performance Demands

How important are the following goals to this center's strategic decisions or commitments of a long-term nature?

1. Generating high, above average revenues
2. Achieving or maintaining below-average costs of operation
3. Achieving or maintaining a high, above average rate of growth
4. Retaining or securing high, above average liquidity and financial strength

Centralization

How true is each of the following statements about working in this treatment center?

1. There can be little action taken here until a supervisor approves a decision
2. Even small matters have to be referred to someone higher up for approval
3. Employees have to ask their supervisors before doing almost anything
4. Any decisions employees make must have their boss's approval

Innovation in Decision-Making

Each of the following items consists of a pair of statements representing the two extremes of different methods of managing a treatment center. In each item, a score of 1 indicates that your center is best described by the statement on the left; a score of 7 indicates that your center is best described by the statement on the right. For each item, please circle the number that best represents the management methods used at this treatment center.

1. Managers at this center have a strong proclivity for low-risk projects.	1 2 3 4 5 6 7	Managers at this center have a strong proclivity for high-risk projects.
2. Managers at this center believe that, it's best to achieve the center's objectives gradually via careful, incremental behavior.	1 2 3 4 5 6 7	Managers at this center believe that, bold, wide-ranging acts are necessary to achieve the center's objectives.
3. When confronted with decision-making situations, this center typically adopts a cautious posture in order to minimize the probability of making costly decisions.	1 2 3 4 5 6 7	When confronted with decision-making situations, this center typically adopts a bold, aggressive posture in order to maximize the probability of exploiting potential opportunities.

Long-Range Strategic Planning

How important are each of the following activities in this center's strategic planning?

1. Anticipating where patients will be coming from in the long-term
2. Monitoring changes in the prevalence, type, and distribution of substance abuse problems in the market area
3. Using computer-based techniques in long-range planning relative to patient flow
4. Market research
5. Long-term financial planning for this center

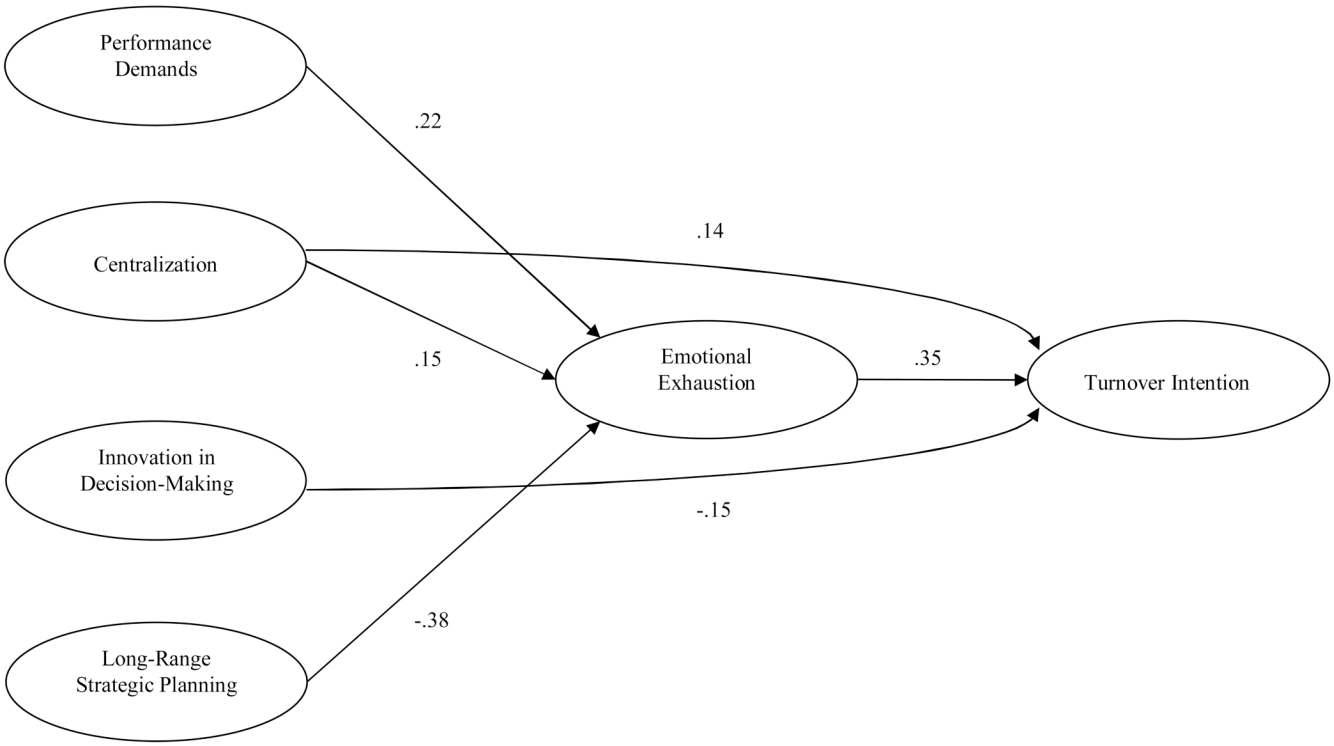

Fig. 1.

Significant paths in trimmed model of emotional exhaustion and turnover intention with maximum likelihood estimates (standardized, $p < .05$, two-tailed). Note. Correlations among the exogenous variables are not shown. Relationships of emotional exhaustion and turnover intention on the control variables are not shown.

Table 1

Means, standard deviations, reliabilities, and correlations between latent variables

	M	*SD*	1	2	3	4	5	6
1. Performance Demands	4.73	1.23	**.78**					
2. Centralization	2.60	1.17	.08	**.84**				
3. Innovation in Decision-Making	3.74	1.16	.24***	− 10	**.78**			
4. Long Range Strategic Planning	4.25	1.31	.62***	− 08	.26***	**.82**		
5. Emotional Exhaustion	2.39	1.20	−.01	.20***	−.08	−.26***	**.93**	
6. Turnover Intention	1.98	1.50	.05	.25***	−.17**	−.16**	.40***	**.88**

(1) * $p < .05$, ** $p < .01$, *** $p < .001$.

(2) Cronbach's alpha coefficients are presented in boldface on the diagonal.