

# “The mediating effects of role stressors in supervisor-to-subordinate burnout”

<b>AUTHORS</b>	Cody Logan Chullen
<b>ARTICLE INFO</b>	Cody Logan Chullen (2014). The mediating effects of role stressors in supervisor-to-subordinate burnout. <i>Problems and Perspectives in Management</i> , 12(4)
<b>RELEASED ON</b>	Tuesday, 21 October 2014
<b>JOURNAL</b>	"Problems and Perspectives in Management"
<b>FOUNDER</b>	LLC “Consulting Publishing Company “Business Perspectives”



NUMBER OF REFERENCES

0



NUMBER OF FIGURES

0



NUMBER OF TABLES

0

© The author(s) 2026. This publication is an open access article.

## SECTION 3. General issues in management

Cody Logan Chullen (USA)

### The mediating effects of role stressors in supervisor-to-subordinate burnout

#### Abstract

Several scholars have cited the importance of the role of the supervisor in providing employees with key resources enabling them to effectively cope with job demands, thereby reducing the risk of burnout. However, although literature continues to cite the importance of supervisory behavior as a factor contributing to subordinate burnout, a cogent model detailing the role of the supervisor in the subordinate burnout process has yet to be articulated. Understanding the role of the supervisor in the subordinate burnout process is critical because as it may help organizations develop leadership practices that reduce and eliminate burnout's prevalence in the workplace. This paper articulates and tests a model whereby subordinate role stressors mediate the supervisor to subordinate burnout relationship. Drawing from a sample of 164 dyads, results and implications are discussed.

**Keywords:** burnout, conservation of resources, job-demands resources model, emotional contagion, supervisor, subordinate.

**JEL Classification:** M10, M12, M19.

#### Introduction

Burnout can be described as a specific type of occupational stress wherein employees feel emotionally drained at work, express callous attitudes towards coworkers, and feel personally ineffective on the job (Maslach, 1982).

At the individual level, burnout has been tied to numerous health related complications including anxiety (Cordes & Dougherty, 1993) and depression (Kahill, 1988), amongst others. Similarly, at the organizational level burnout has been linked to a variety of concerns including deviant behavior (Chullen, Dunford, Angermeier, Boss & Boss, 2010), turnover (Jackson, Schwab & Schuler, 1986), and decreased employee commitment (Leiter & Maslach, 1988), to name a few.

To date, several scholars (e.g. Feldman, 1976; Feldman, 1981; Feldman & Brett, 1983; Pinder & Schroeder, 1987), have cited the importance of the role of the supervisor in providing employees with key resources enabling them to effectively cope with job demands, thereby reducing the risk of burnout. However, although literature continues to cite the importance of supervisory behavior as a factor contributing to subordinate burnout, a cogent model detailing the role of the supervisor in the subordinate burnout process has yet to be articulated. Understanding the role of the supervisor in the subordinate burnout process is critical because as it may help organizations develop leadership practices that reduce and eliminate burnout's prevalence in the workplace.

Because the role of the supervisor in the burnout literature has largely been overlooked for so long, now is an important and appropriate period for us as researchers to turn our attention towards improving our understanding of the construct's dynamic nature. This shift requires focusing on burnout from a dyadic perspective as opposed to an individual perspective. Articulating dyadic burnout allows us to examine important within and between-unit differences which may lead to important discoveries into our field (Bollen & Curran, 2006; Singer & Willett, 2003). Accordingly, the purpose of this paper is to articulate and test a model of dyadic burnout, with a specific focus on how supervisor burnout influences subordinate burnout.

#### 1. Theory & hypotheses

Emotional contagion theory (Hatfield, Cacioppo & Rapson, 1994) provides one conceptual lens through which the main effects of supervisor burnout on subordinate burnout may be better understood. Emotional contagion is formally defined as "The tendency to automatically mimic and synchronize facial expressions, vocalizations, postures and movements with those of another person and, consequently, to converge emotionally" (Hatfield et al., 1994, p. 5). Research has provided preliminary empirical evidence for the emotional contagion phenomenon, indicating that teammates indeed transmit attitudes such as burnout to one another in such a manner that the team itself may become "burned out" (Bakker, Demerouti & Schaufeli, 2003; Bakker, LeBlanc & Schaufeli, 2005).

Beyond examining the main effect linkages articulated by emotional contagion theory, supervisor burnout may also affect subordinate

burnout through intervening mechanisms. Two theoretical frameworks: conservation of resources (COR) theory (Hobfoll, 1989) and the job demands-resources model (JD-R) (Demerouti, Bakker, Nachreiner & Schaufeli, 2001), offer complimentary insights into the social psychological processes leading to burnout.

COR theory and the JD-R model describe how critical job resources and demands affect employee burnout. Due to their unique positions within

organizations, supervisors may influence critical job demands of their subordinates which have important implications for change in subordinate burnout. In particular, role conflict, role ambiguity and role overload have all been identified as critical job demands encountered in one's work environment that lead to burnout. Each of these theories will be discussed in greater detail as the paper continues. Please see Figure 1 for an overall theoretical model representing all study variables.

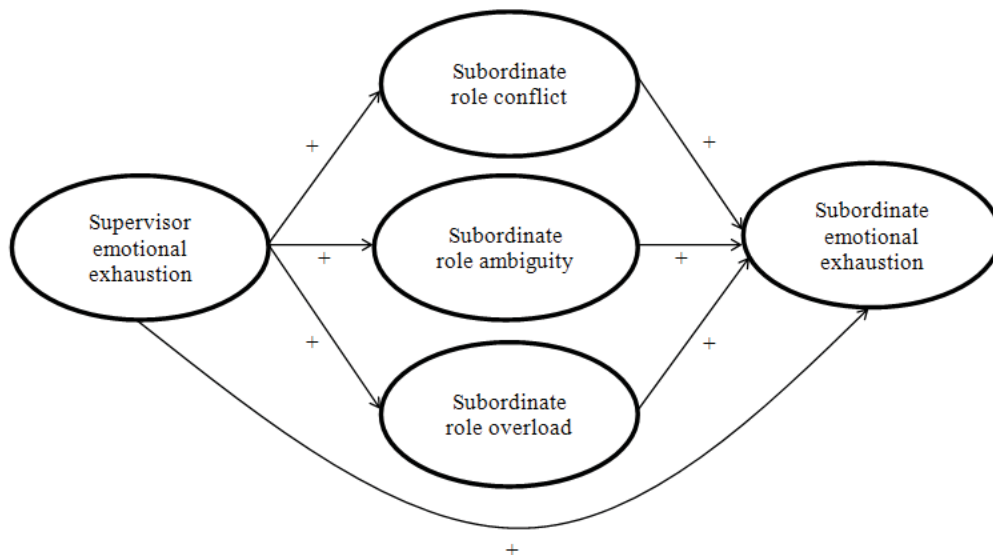


Fig. 1. Overall theoretical model

**1.1. Conceptualization of burnout.** During the late 1970's and early 1980's, a series of studies (Maslach, 1982; Maslach & Jackson, 1981; Pines, Aronson & Kafry, 1981) established the three-dimensional factor structure of the burnout construct. As noted above, these dimensions include *emotional exhaustion*, *depersonalization* and *reduced personal accomplishment*.

*Emotional exhaustion*, the first component of burnout, characterized by a 'lack of energy and a feeling that one's emotional resources are used up' (Cordes & Dougherty, 1993), and is believed to be central to the burnout experience. Often referred to as 'compassion fatigue,' emotional exhaustion is believed to result from emotionally charged interactions with others. *Depersonalization* refers to the development of negative, cynical attitudes (Jackson, Turner & Brief, 1987) about one's work, coworkers and customers. Research suggests that employees experiencing depersonalization may withdraw from their work (Maslach & Pines, 1977). Finally, *reduced personal accomplishment* refers to an individual's feelings of diminished ability in accomplishing tasks related to his or her job. Individuals experiencing reduced personal accomplishment often feel a decline in their sense of accomplishment (Leiter & Maslach, 1988).

This study focuses on the emotional exhaustion dimension of burnout for several reasons. First, emotional exhaustion has been conceptualized by many as marking the first stage of the burnout experience and accordingly has been identified as the critical point of intervention for those wishing to curtail its prevalence (Cherniss, 1980; Maslach, 1982). Indeed, many scholars have contended that burnout unfolds in a sequential process whereby emotional exhaustion occurs first, depersonalization second, and reduced personal accomplishment third (Cherniss, 1980; Maslach, 1982). Second, research has highlighted emotional exhaustion's chronic and intense affective nature with some properties representative of ordinary fatigue but with some properties closer to chronic fatigue due to its pervasive nature (Griffith, Kerr, Mayo & Topal, 1950). Accordingly, emotional exhaustion serves as a useful and unique indicator of the cumulative effects of work stressors. Last, emotional exhaustion is noted for being a state of feeling, allowing it to capture both the chronic and affective aspects of work experiences.

**1.2. Emotional contagion.** Researchers have offered two explanations as to how feelings of burnout may become shared among employees. First, Westman (2002) suggested that shared

feelings of burnout may be due to “confounding effects” wherein employees are exposed to an exceedingly high volume of job demands in concert with a shortage of job resources to buffer those demands. In this instance, shared feelings of burnout are due to conditions of the work environment. Alternatively, employees may perceive symptoms of burnout in others and automatically take on these symptoms thereby leading to shared feelings of burnout. This process is referred to as emotional contagion. Research by Bakker, Van Emmerik and Euwema (2006) and Chullen (2014) provides support for the latter, finding evidence for shared feelings of burnout among employees even after controlling for conditions of the work environment.

As noted earlier, Hatfield et al. (1994, p. 5) defined emotional contagion as “The tendency to automatically mimic and synchronize facial expressions, vocalizations, postures and movements with those of another person and, consequently, to converge emotionally”. This definition emphasizes a non-conscious process whereby individuals’ feelings may converge. Studies bear out this prediction, showing that while in conversation individuals automatically mimic the facial expressions, voices, postures and behaviors of others (Bavelas, Black, Lemery & Mullett, 1987; Bernieri, Reznick & Rosenthal, 1988). Similarly, researchers have convincingly argued that individuals may “catch” the feelings of another via a conscious cognitive process by “tuning in” to the feelings of others (Bakker et al., 2003). In this instance, an individual may identify or empathize with another and through this process may recall similar experiences in which they felt the same way. In so doing, the individual may also experience similar feelings.

A growing body of literature in applied psychology demonstrates that feelings can be highly contagious or transferable between employees (Barger & Grandey, 2006; Bono & Ilies, 2006; Ilies, Wagner & Morgesen, 2007). For example, in a series of controlled laboratory studies (Hsee, Hatfield, Carlson & Chemtob, 1990; Uchino, Hsee, Hatfield, Carlson & Chemtob, 1991), researchers documented that both participant self-reports and judges’ ratings of participants’ expressed emotions converged with that of a stimulus person that the participant watched on videotape. In another study examining burnout contagion, Groenestijn, Buunk & Schaufeli (1992) provided empirical evidence for burnout contagion among nurses finding that nurses high on need for social comparison information reported elevated levels of burnout when they perceived burnout complaints among colleagues.

Hatfield et al. (1994) argued that individuals are more likely to transmit their feelings when they sense freedom to freely express themselves towards others. Furthermore, they argued that individuals are more likely to catch the feelings of others when they attend to and are able to read others’ feelings. Accordingly, supervisors appear more likely to act as transmitters of burnout and subordinates appear more likely to be receivers of burnout. As supervisors control employees’ time, resources and interactions, they should have more ample opportunities to express and transmit their burnout. Furthermore, subordinates are more likely to attend to their supervisors’ burnout because they depend more on their supervisor than vice versa. Thus, supervisors and subordinates possess the attributes necessary to be transmitters and receivers of burnout. Supporting this argument is evidence that subordinates readily ascertain supervisors’ affective displays (Lewis, 2000) and that individuals of lower status more often catch the feelings of individuals of higher status than the reverse (Anderson, Keltner & John, 2003). Therefore, drawing on emotional contagion theory, it is hypothesized:

*Hypothesis 1: Supervisor emotional exhaustion is positively related to subordinate emotional exhaustion.*

**1.3. Conservation of resources & job-demands resources model.** The conservation-of-resources (COR) theory and the job demands-resources model (JD-R) offer complimentary perspectives on the processes leading to burnout change. Hobfoll’s (1989) COR theory discusses how employees choose to manage valuable resources in response to various work demands. When resources are diminished or lost, or when they are insufficient to manage work demands, employees begin experiencing burnout. In response to diminishing resources, employees will carefully choose how to use remaining resources (Halbesleben & Buckley, 2004).

The JD-R model goes beyond COR theory by discussing the role of job demands and job resources, articulating their effects on various components of the burnout process, and by establishing burnout as a condition that exists across a wide spectrum of professions (Demerouti et al., 2001). The job demands-resources model assumes two processes that explain the development of burnout (Bakker & Demerouti, 2007; Schaufeli & Bakker, 2004). First, as job demands increase they activate an energy depletion process whereby an employee’s sustained increases in effort to meet those perceived job demands are met with an increase in compensatory psychological and physiological costs that drain the employee’s

energy. This depletion of energy and increased stress from responding to demands gradually leads employees to feel used up and worn out over time. Second, job resources are assumed to activate a motivational process whereby perceived resources that are instrumental in achieving work goals can also foster employees' growth, learning and development; satisfy needs for autonomy and competence; and increase willingness to dedicate one's efforts and abilities to the work task. These perceptions and beliefs increase the degree to which individuals are willing to invest themselves into their role performances and assist in managing job related demands. However, when resources become insufficient to meet demands energy depletion begins and continues with time ultimately leading employees to feel used up and burned out.

Job demands require workers to 'exert physical or mental effort' and are connected to negative psychological and physiological reactions (Demerouti et al., 2001; Schaufeli & Bakker, 2004). Job resources, in contrast, help employees accomplish goals and manage work demands (Halbesleben & Buckley, 2004). Examples of job resources include social support and feedback, amongst others (Schaufeli & Bakker, 2004). Both increased job demands and depleted job resources have consistently been shown to lead to employee burnout (Bakker, Demerouti & Verbeke, 2004; Demerouti et al., 2001).

*1.3.1. Job demands.* Many studies investigating the causes of employee burnout have focused on (Pines & Maslach, 1978; Maslach & Pines, 1977) role conflict, role ambiguity and role overload as important job demands.

*Role conflict* can be described as a situation in which an employee is faced with incompatible expectations about their work that are difficult to satisfy concurrently (Kahn, 1978; Kahn, Wolfe, Quinn, Snoek & Rosenthal, 1964). *Role ambiguity* can be described as "an incomplete sort of role sending, where the information necessary to carry out one's job is not available or incomplete" (Kahn et al., 1964, p. 239). *Role overload* describes situations in which employees feel that they are faced with too many responsibilities and expectations in light of their available resources.

*1.3.2. Supervisor burnout and job demands.* Supervisors are exposed to a variety of job demands on a daily basis. These job demands, be they administrative hassles, emotional conflict, or role overload, to name a few, require sustained physical and psychological effort, which may incur significant physiological and psychological costs

over time (Crawford, LePine & Rich, 2010; Demerouti et al., 2001; Schaufeli, Bakker & van Rhenen, 2009). According to the principles of COR theory and the JD-R model, these job demands evoke a health impairment process that depletes employee's mental and physical resources thereby leading to burnout. Supervisors encountering ongoing high job demands will likely have a limited capacity to handle the physical and cognitive demands of their work. Accordingly, supervisors should then adopt a defensive coping strategy whereby they limit their involvement with others and distance themselves physically and psychologically from their work. This response should then serve as an emotional buffer between the supervisor and the imposing job demands.

Indeed, Maslach, Schaufeli and Leiter (2001, p. 403) stated, 'Exhaustion is not something that is simply experienced – rather, it prompts actions to distance oneself emotionally and cognitively from one's work'. As discussed earlier, the COR model discusses how employees begin to conserve resources as their resources become scarcer. As supervisors become burned out, they should look to ways in which they can conserve their remaining resources.

Withdrawing from their work demands has been shown to be a prevailing coping strategy for supervisors experiencing burnout (e.g., Halbesleben & Bowler, 2007; Wright & Cropanzano, 1998). This withdrawal is likely to lead to a shift of the supervisors' responsibilities to the subordinate resulting in role overload, accompanied by diminishing communication of important subordinate job-related information leading to role ambiguity as well as relating incompatible or incongruent expectations leading to role conflict. Therefore, drawing on COR theory and the JD-R model, it is hypothesized:

*Hypothesis 2a: Supervisor emotional exhaustion is positively related to subordinate role conflict.*

*Hypothesis 2b: Supervisor emotional exhaustion is positively related to subordinate role ambiguity.*

*Hypothesis 2c: Supervisor emotional exhaustion is positively related to subordinate role overload.*

**1.4. Subordinate burnout and job demands & resources.** Burnout's three-dimensional conceptualization suggests that different job stressors may be differentially related to various burnout dimensions and COR theory provides the framework for such predictions. Leiter (1991, 1993) found that demands (e.g. role conflict) were more closely related to emotional exhaustion, whereas resources (e.g. supervisor support) were more closely related to

depersonalization and reduced personal accomplishment. Similarly, Lee and Ashforth (1996) also found that the dimensions of employee burnout were differentially related to demands and resources. Overall, these authors found that job demands were more closely associated with the burnout dimension of emotional exhaustion than to depersonalization or reduced personal accomplishment while job resources such as social support were less closely related to emotional exhaustion than they were to depersonalization and reduced personal accomplishment. Overall then, these results confirm that emotional exhaustion is closely related to job demand variables, whereas depersonalization and personal accomplishment are closely related to resources. Lee and Ashforth (1996, p. 128) concluded: "The patterns of associations between the demand and resource correlates and the three burnout dimensions appear to be consistent with the conservation of resources explanation of burnout."

Moreover, the JD-R model also provides empirical support for the idea that differential relationships exist between various dimensions of the burnout experience and job demands and resources (Demerouti et al., 2001). Specifically, the JD-R model provides support that demands are closely related to emotional exhaustion while resources are closely related to depersonalization.

Empirical evidence supporting this differential pattern of relationships has also been reported in the literature. A variety of demands have all been linked to the experience of emotional exhaustion (Janssen, Bakker & de Jong, 2001; Leiter & Maslach, 1988; Whitehead, 1987). Whereas job resources have all been linked to depersonalization and reduced personal accomplishment (Astrom, Nilsson, Norgerg, Sandman & Winblad, 1990; Jackson, Turner & Brief, 1987; Leiter, 1989). As role conflict, role ambiguity, and role overload increase they activate the energy depletion process described in the J-DR model whereby an employee's sustained increases in effort to meet those perceived job demands are met with an increase in compensatory psychological and physiological costs that drain the employee's energy. This depletion of energy and increased stress from responding to demands gradually leads employees to feel used up, and emotionally exhausted out over time.

*Hypothesis 3a: Subordinate role conflict is positively related to subordinate emotional exhaustion.*

*Hypothesis 3b: Subordinate role ambiguity is positively related to subordinate emotional exhaustion.*

*Hypothesis 3c: Subordinate role overload is positively related to subordinate emotional exhaustion.*

### **1.5. Mediating effects of subordinate role stressors on supervisor to subordinate burnout.**

Drawing on the discussion outlined above related to emotional contagion theory, COR theory and the JD-R Model, several mediated relationships can be inferred regarding the linkages between supervisor burnout, subordinate role conflict, role ambiguity, role overload and subordinate burnout.

*Hypothesis 4: Subordinate role conflict, role ambiguity and role overload partially mediate the relationship between supervisor emotional exhaustion and subordinate emotional exhaustion.*

## **2. Methods**

Participants for this study were drawn from a mental health services organization employing approximately 800 total personnel (of which 185 served in a supervisory capacity), located in the Midwestern United States. Overall, respondents from this organization were, on average, 50.48 years of age, had worked in their current organization for 14.43 years, had worked for their present immediate supervisor for 5.97 years, and were 85% female (15% male).

The primary source of data for this study was collected through employee opinion survey. Participants were guaranteed that their responses would be kept strictly confidential, and that under no circumstances would anyone inside the organization have access to their data or be able to individually identify them in any way.

Data for this study was collected at three time intervals. Each survey was administered online over a one week period during which all employees were solicited to participate. The survey at Time 1 was followed by one month down period prior to the opening of the survey at Time 2. Further, the survey at Time 2 was followed by a one month down period prior to the opening of the survey at Time 3. One week before the first survey link was sent, a "pre-notice" (Dillman, 2000) email was sent to all employees. This email came from the Chief Executive Officer. This email briefly described the upcoming study (noting that its purposes were to better understand employee opinions and to help improve the quality of work life), encouraged employees to participate, and assured them that the data would go directly to the researcher and that the organization would not have access to individual responses. One week later, an email containing a link to the online survey was sent.

Both data related to controls variables (i.e. age, gender, organizational tenure and tenure with supervisor) from all employees and data related to supervisor emotional exhaustion from all supervisors

was collected from at Time 1. Data related to subordinate role stressors from all subordinates was collected at Time 2. Data related to subordinate emotional exhaustion from all subordinates was collected at Time 3. A coding system was used to match supervisor and subordinate responses. The Chief Executive Officer confirmed all employees within this organization maintain “regular, daily face-to-face interaction” with their supervisor.

A total of 384 employees responded to the survey administered at Time 1 (48% initial overall response rate). Of the respondents at Time 1, 173 of these respondents served in a supervisory capacity (94% initial supervisor response rate) whereas 211 respondents did not serve in a supervisory capacity (34% initial subordinate response rate). Of the 211 subordinate respondents who participated at Time 1, 182 responded to and completed the remaining surveys at both Times 2 and 3. Of the final 182 subordinate respondents who participated in all three time waves of the study, 18 did not have a supervisor who participated in the study. Similarly, of the 173 supervisor respondents from Time 1, 9 did not have a subordinate who participated in the study. These numbers represent a final overall employee useable response rate of 41%, and 89% final supervisor useable response rate, and a 27% final subordinate useable response rate. It is important to note that each supervisor had only one subordinate who participated in all three waves of data collection in this study. Therefore, multilevel analysis of data was not appropriate. Accordingly, a total of 164 supervisor-subordinate dyads (1 supervisor: 1 subordinate) served as the data sample for this study.

**2.1. Measures. Emotional exhaustion.** Burnout was measured using the emotional exhaustion subscale from the *Maslach Burnout Inventory* (MBI; Maslach & Jackson, 1981), consisting of nine items. Sample items included “I feel emotionally drained from my work,” “I feel fatigued when I get up in the morning and have to face another day on the job,” and “I feel used up at the end of the workday”. Items were assessed on a 7-point Likert scale (1 = Strongly Disagree to 7 = Strongly Agree). This measure demonstrated satisfactory reliability for both supervisors at Time 1 ( $\alpha = .91$ ) and subordinates at Time 3 ( $\alpha = .90$ ), respectively.

**Role conflict.** Role conflict was measured using Peterson et al.’s (1995) 3 item scale. Sample items included “I often get involved in situations in which there are conflicting requirements,” “I receive incompatible requests from two or more people,” and “I have to do things that should be done differently under different conditions.” Items were assessed on a 5-point Likert scale (1 = Strongly

Disagree to 5 = Strongly Agree). This measure demonstrated satisfactory reliability for subordinates at Time 2 ( $\alpha = .84$ ).

**Role ambiguity.** Role ambiguity was measured using Peterson et al.’s (1995) 5 item scale. Sample items included “I have clear planned goals and objectives for my job,” “I know exactly what is expected of me,” and “My responsibilities are clearly defined.” Items were assessed on a 5-point Likert scale (1 = Strongly Disagree to 5 = Strongly Agree). This measure demonstrated satisfactory reliability for subordinates at Time 2 ( $\alpha = .81$ ). Due to the positive wording of this measure, responses were reverse-scored for ease of interpretation. Thus, higher scores indicated more role ambiguity whereas lower scores indicated less role ambiguity.

**Role overload.** Role overload was measured using Peterson et al.’s (1995) 5 item scale. Sample items included “I feel overburdened in my role,” “My workload is too heavy,” and “The amount of work I have to do interferes with the quality I want to maintain.” Items were assessed on a 5-point Likert scale (1 = Strongly Disagree to 5 = Strongly Agree). This measure demonstrated satisfactory reliability for subordinates Time 2 ( $\alpha = .75$ ).

**2.2. Controls.** Research studies suggest that age differences in experienced burnout exist, with younger employees reporting higher levels of burnout than their older coworkers (e.g., Maslach & Jackson, 1981, 1985; Perlman & Hartman, 1982; Schwab & Iwanicki, 1982). Further, although there appears to be varied evidence as to the pattern and complexity of its relationship, gender has been found to be associated with burnout (Lemkau, Rafferty, Purdy & Rudisill, 1987; Maslach & Jackson, 1981, 1985; Pretty, McCarthy & Catano, 1992; Schwab & Iwanicki, 1982). Highlighting the role of organizational tenure and its relationship to burnout, Burke (1989) found that more senior employees reported less burnout than their junior counterparts due to experience coping with and handling job demands. Lastly, meta-analytic evidence has found that employee age and tenure are related to both role ambiguity and role overload (Fisher & Gitelson, 1983; Jackson & Schuler, 1985). Accordingly, this study controlled for employee age, gender and organizational tenure as well as tenure with current supervisor in as much as these variables may have been related to the independent, intervening and dependent variables examined in this study.

### 3. Results

Table 1 illustrates the means, standard deviations, correlations and reliability estimates (Cronbach alphas) for all study variables.

Table 1. Means, standard deviations, correlations and reliability estimates for study variables

Variable	Mean	s.d.	1	2	3	4	5	6	7	8	9
1. Age <sup>1</sup>	50.48	12.65	-								
2. Gender <sup>1</sup>	.15	.36	.15	-							
3. Organizational tenure <sup>1</sup>	14.43	10.47	.46**	-.12	-						
4. Tenure w/ supervisor <sup>1</sup>	5.97	4.18	.00	-.09	.33**	-					
5. Role conflict <sup>2</sup>	3.16	.93	.01	-.16*	.33**	.09	(.84)				
6. Role ambiguity <sup>2</sup>	2.23	.91	-.10	-.14	.03	-.29**	.39**	(.81)			
7. Role overload <sup>2</sup>	3.11	1.00	-.04	-.15	.37**	.31**	.54**	.13	(.75)		
8. Supervisor emotional exhaustion <sup>1</sup>	3.31	1.26	-.05	-.41**	.38**	.06	.49**	.42**	.48**	(.91)	
9. Subordinate emotional exhaustion <sup>3</sup>	3.56	1.35	-.24**	-.27**	.15	-.01	.56**	.31**	.63**	.64**	(.90)

Note:  $N = 164$ . Scale reliabilities (Cronbach's alpha) are listed on the diagonal. <sup>a</sup> Gender is coded as 0 (females) and 1 (males).

<sup>1</sup> collected at Time 1, <sup>2</sup> collected at Time 2, <sup>3</sup> collected at Time 3; †  $p < .10$ , \*  $p < .05$ , \*\*  $p < .01$ , \*\*\*  $p < .001$

Hypotheses were tested using structural equation modeling (IBM SPSS Amos Ver. 20). Prior to testing hypothesized relationships, a series of confirmatory factor analyses were performed to determine the construct validity of study measures. Table 2 illustrates the fit indices for the measurement model contrasted with four alternative models (Anderson & Gerbing, 1988).

Table 2. Fit Indices for alternative measurement models

Measurement model	$df$	$\chi^2$	$\chi^2/df$	CFI	SRMR	RMSEA
Single factor <sup>a</sup>	434	4290.89	9.87	.64	.18	.23, .25
Two factors <sup>b</sup>	433	3313.96	7.65	.73	.27	.20, .22
Three factors <sup>c</sup>	431	2061.68	4.78	.85	.15	.15, .16
Four factors <sup>d</sup>	428	1552.15	3.62	.89	.05	.13, .15
Five factors <sup>e</sup>	424	652.15	1.53	.95	.04	.06, .07

Note:  $N = 164$ . CFI = comparative fit index; SRMR = standardized root mean square residual; RMSEA = root mean square error of approximation, 90% Confidence Interval. <sup>a</sup> All indicators load on a single factor. <sup>b</sup> Supervisor Emotional Exhaustion loads on its respective factor, and Subordinate Emotional Exhaustion, Subordinate Role Conflict, Subordinate Role Ambiguity, and Subordinate Role Overload load on one factor. <sup>c</sup> Supervisor Emotional Exhaustion and Subordinate Emotional Exhaustion load on their respective factors, and Subordinate Role Conflict, Subordinate Role Ambiguity, and Subordinate Role Overload load on one factor. <sup>d</sup> Supervisor Emotional Exhaustion, Subordinate Emotional Exhaustion, and Subordinate Role Overload load on their respective factors, and Subordinate Role Conflict and Subordinate Role Ambiguity load on one factor. <sup>e</sup> Supervisor Emotional Exhaustion, Subordinate Emotional Exhaustion, Subordinate Role Conflict, Subordinate Role Ambiguity, and Subordinate Role Overload load on their respective factors.

As depicted in Table 2, the five-factor measurement model produced the best fit for the data: comparative fit index = .95, standardized root mean square residual = .04, root mean square error of approximation 90% confidence interval = .06, .07. In order to allay concerns related to common method bias, each set of indicators were loaded onto their latent variables and then all indicators were loaded onto a sixth, common method latent variable. This six-factor model did not converge. Additionally, a Harman single-factor test (see Podsakoff, MacKenzie, Lee & Podsakoff, 2003) was performed and results showed that items did not significantly load onto a single factor. Accordingly, it was determined that common method bias was not a serious concern in this study's analysis. Following this, the structural equation analysis was performed. All path coefficients were estimated while simultaneously controlling for employee age, gender, organizational tenure, and tenure with current supervisor. To test the proposed model, this study followed the analytical approach outlined by Preacher

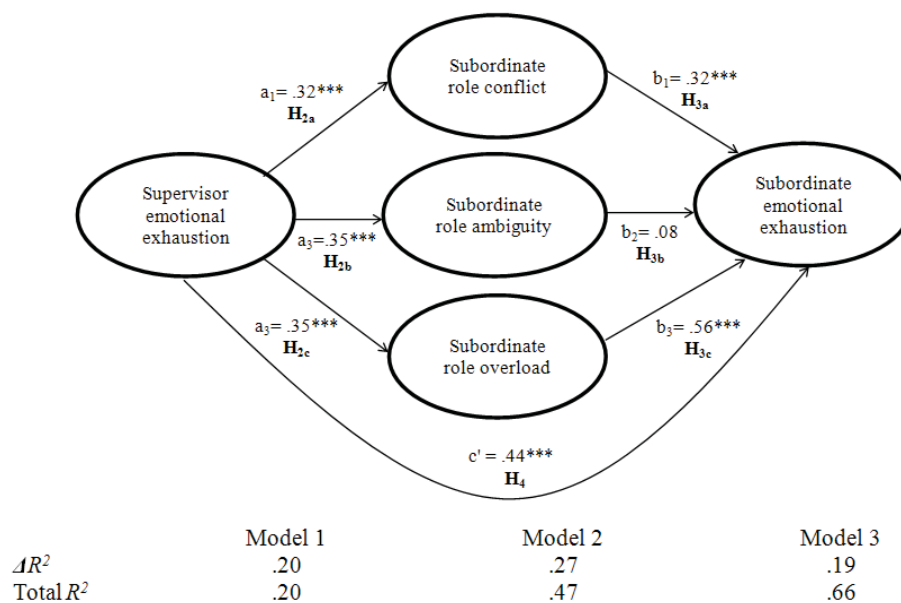
and Hayes (2004) and Shrout and Bolger (2002). This mediation approach directly tests the indirect effect between the independent and the dependent variable through the mediators via a bootstrapping procedure (Efron & Tibshirani, 1993; Mooney & Duval, 1993) while addressing some of the shortcomings associated with the Sobel test (Preacher & Hayes, 2004; Shrout & Bolger, 2002). Mediators were tested simultaneously to determine whether each mediation effect was independent of the other mediators (Kenny, Kashy & Bolger, 1998). The structural model showed an acceptable fit:  $\chi^2 = 652.15$ , comparative fit index = .95, standardized root mean square residual = .04, root mean square error of approximation 90% confidence interval = .06, .07.

Table 3 illustrates the path coefficients and indirect effects for the mediation model along with the 95% bias corrected bootstrapped confidence intervals for the path estimates. Figure 2 also displays the estimates from the structural path coefficients.

Table 3. Path coefficients and indirect effects for mediation models

	Path coefficients				Indirect effects	
	to subordinate role conflict	to subordinate role ambiguity	to subordinate role overload	to subordinate emotional exhaustion	estimate	bias-corrected bootstrap 95% CI
Supervisor emotional exhaustion	.32 (.06)	.35 (.06)	.35 (.07)	.44 (.08)		
Subordinate role conflict				.32 (.09)		
Subordinate role ambiguity				.08 (.09)		
Subordinate role overload				.56 (.09)		
Total					.29 (.07)	.15, .40
Sup. EE → Sub. RC → Sub. EE <sup>a</sup>					.10 (.04)	.04, .19
Sup. EE → Sub. RA → Sub. EE <sup>a</sup>					.03(.04)	.11, .03
Sup. EE → Sub. RO → Sub. EE <sup>a</sup>					.19 (.05)	.10, .31

Note:  $N = 164$ . Bootstrap confidence intervals were constructed using 5000 resamples. Standard errors in parentheses. Total effect (Sup. EE → Sub. EE) = .71 (.08). <sup>a</sup> mediators were tested simultaneously to determine whether each mediation effect was independent of the other mediators † $p < .10$ , \*  $p < .05$ , \*\*  $p < .01$ , \*\*\*  $p < .001$ .



Note:  $N = 164$ . † $p < .10$ , \*  $p < .05$ , \*\*  $p < .01$ , \*\*\*  $p < .001$ . Total effect (Supervisor emotional exhaustion → Subordinate emotional exhaustion) = .71(.08). Model 1: Control variables. Model 2: Control variables + Supervisor emotional exhaustion. Model 3: Control variables + Supervisor emotional exhaustion + Subordinate role stressors.

Fig. 2. Mediation model results

As predicted in Hypothesis 1, supervisor emotional exhaustion was positively related to subordinate emotional exhaustion. Hypotheses related to the effects of supervisor burnout on subordinate role stressors, namely supervisor emotional exhaustion is positively related to subordinate role conflict (2a), supervisor emotional exhaustion is positively related to subordinate role ambiguity (2b), and supervisor emotional exhaustion is positively related to role overload (2c), were each found to be supported. For hypotheses related to the effects of subordinate role stressors on subordinate emotional exhaustion, namely subordinate role conflict is positively related to subordinate emotional exhaustion (3a), subordinate role ambiguity is positively related to subordinate emotional exhaustion (3b), and subordinate role overload is positively related to subordinate emotional exhaustion, results were mixed. Subor-

dinate role conflict and role overload, but not role ambiguity, were found to be related to subordinate emotional exhaustion as predicted. Lastly, results from Hypothesis 4 found that subordinate role conflict and subordinate role overload, but not subordinate role ambiguity, mediated the relationship between supervisor emotional exhaustion and subordinate emotional exhaustion. Additionally, although not included in Table 3 for parsimony, both age (est. = -.02,  $t = -3.08$ ,  $p < .05$ ) and tenure with current supervisor (est. = -.06,  $t = -3.08$ ,  $p < .05$ ) were found to be related to subordinate emotional exhaustion among control variables.

#### 4. Discussion

**4.1. Implications for theory, research and practice.** This study's findings yield several implications for theory. First, this research study provides support that

supervisor burnout (specifically supervisor emotional exhaustion) plays an important role in the development of subordinate burnout (specifically subordinate emotional exhaustion). In particular, supervisors experiencing emotional exhaustion appear to positively influence subordinate role stressors as well as subordinate emotional exhaustion. This study is among the first to highlight the role of supervisors' affective states and how they affect their subordinates, answering several calls in the literature (Brief & Weiss, 2002; Lewis, 2000) to illuminate this relationship.

Additionally this study contributes to our growing knowledge concerning the emotional contagion process and burnout within the leadership domain. While various moods and emotions have received attention (Cherulnik, Donley, Wiewel & Miller 2001; Lewis, 2000; Sy, Côté & Saavedra, 2005), this study is the first to address burnout. Findings suggest that supervisors act as highly salient organizational members that transmit their emotional exhaustion via emotional contagion to their subordinates.

Third, this study contributes to the literature by identifying subordinate role stressors (particularly role conflict and role overload) as important mediating mechanisms within the supervisor burnout to subordinate burnout relationship. To date, although not explicitly concerned with burnout, literature examining the effects of supervisor moods and emotions on subordinates has focused almost exclusively on the direct relationship while ignoring potentially important intervening mechanisms. Indeed, scholars have postulated there are likely notable mediating variables through which supervisor mood and emotion affects subordinates. Commenting on the current state of the literature in this regard, Sy et al. (2005; p. 303) noted: "At this point, however, we cannot make definitive statements about the precise mechanisms that underlie the effects of the mood of the leader". This research study provides support that subordinate role conflict and role overload mediate the relationship between supervisor emotional exhaustion and subordinate emotional exhaustion. These results reveal a deeper understanding of the processes leading from supervisor burnout to subordinate burnout.

Separately, this study's findings yield several implications for practice. First, supervisors must understand the role of their affective states in order to be successful. Through ongoing interaction, supervisors who regulate their affective states (e.g. emotional exhaustion) by revealing them or concealing them may cause change in their subordinates' affective states. It would be beneficial

for supervisors to learn how to regulate their experiences and displays of burnout. This study's findings suggest that leaders who do not properly regulate their emotional exhaustion could transmit these feelings to their subordinates over time. Enhancing supervisors' capability in regulation should result in minimizing emotional contagion that may hinder employee performance while facilitating emotional contagion that may improve employee performance during the relationship.

Second, these findings suggest that organizations may prevent burnout before it manifests by eliminating its prevalence at a key source: supervisors. Indeed, organizations should endeavor to prevent burnout overtreating it. Organizations should carefully monitor the pervasiveness of burnout among supervisors and proactively take steps to reduce and eliminate its occurrence. Organizations can directly assess burnout among supervisors through regular employee well-being surveys. Further, they can proactively reduce and eliminate burnout in supervisors by providing them with training in cognitive and behavioral strategies (see Schaufeli & Enzmann, 1998, for an overview). By preventing the onset of burnout in supervisors, organizations can minimize its deleterious effects on the supervisor-subordinate relationship and on subordinate role stressors and stop the phenomenon from spreading over time from the upper echelons of management down into the day-to-day workforce before it ever starts.

This study also suggests that supervisors may need guidance on how to communicate expectations and how to socialize employees through role changes that occur over time. Supervisors need to understand how to avoid creating unrealistic expectations that are difficult for subordinates to meet. In addition, supervisors should also work to create high-quality exchanges with their subordinates. Overall, this study's exploratory results discuss a foundation for organizations to address employee burnout particularly as it relates to leadership.

#### **4.2. Limitations & suggestions for future research.**

First, this study drew from a sample in the mental health services industry. As the organization analyzed within this study is not representative of the population of organizations in the world at large, results may not be generalizable to other contexts. Results may only be generalized to the degree that the sample organization is representative of other similar organizations. Therefore, additional research is required using different samples from different areas of the world, in many different kinds of organizations, and in many different kinds of industries in order to increase the external validity of the results contained herein.

Second, this study is limited in that it does not consider the influence of supervisory behavior on the burnout process beyond subordinates' direct supervisor. Indeed, leadership literature examining the "trickle-down effect" indicates that both direct supervisors as well as top management influence employee behavior (Mayer, Kuenzi, Greenbaum, Mawritz & Salvador, 2009). The critical distinction lies in *how* they influence subordinate behavior. Because supervisors at different levels of the organizational hierarchy have different roles, they rely on different mechanisms to transmit their expectations, attitudes and emotions to employees with whom they have little direct contact with. Future research should explore the degree to which upper level supervisors transmit their burnout to subordinates and what if any, intervening mechanisms may exist in that relationship (e.g. via direct supervisors).

Third, this study is limited in that it focuses on the direct and indirect effects of supervisor burnout on subordinate burnout without investigating potentially important moderating influences. Understanding the effects of theoretically driven dispositional variables on the transfer of burnout from supervisor to subordinate is an important area awaiting further inquiry. Indeed, Buunk and Schaufeli (1993) contended that "burnout develops primarily in a social context, and that to understand the

development and persistence of burnout, attention has to be paid to the way individuals perceive, interpret, and construct the behaviors of others at work" (pp. 52-53). Future research should explore how individual differences influence the supervisor to subordinate burnout relationship.

Lastly, this study is limited in that it focuses on the direction of burnout from supervisors to subordinates. However, it is indeed possible that subordinates may transfer their burnout to supervisors. Indeed, Barsade (2002) found that participants in experiments may also influence the moods of individuals of higher status. Future research should explore the degree to which subordinates transmit their burnout to supervisors and what if any, intervening mechanisms may exist in that relationship.

### Conclusion

This study found that supervisors play an important role in the development of burnout in their subordinates through both the emotional contagion process and through their management of subordinate job demands. If burnout trickles down from the upper echelons of the organizational hierarchy then it provides researchers the opportunity to identify useful samples for further study of the phenomenon and it allows organizations to identify its main source and engage in prevention strategies.

### References

1. Anderson, J.C. & Gerbing, D.W. (1988). Structural equation modeling in practice: A review and recommended two-step approach, *Psychological Bulletin*, 103, pp. 411-423.
2. Anderson, C., Keltner, D. & John, O.P. (2003). Emotional convergence in close relationships, *Journal of Personality and Social Psychology*, 84, pp. 1054-1068.
3. Astrom, S., Nilsson, M., Norgerg, A., Sandman, P.O. & Winblad, B. (1990). Staff burnout in dementia care: Relations to empathy and attitudes, *International Journal of Nursing Studies*, 28, pp. 65-77.
4. Bakker, A.B., Demerouti, E. & Schaufeli, W.B. (2003). The socially induced burnout model. In S.P. Shohov (Ed.), *Advances in Psychology Research* (Vol. 25), New York, Nova Science Publishers.
5. Bakker, A.B. & Demerouti, E. (2007). The job demands-resources model: State of the art, *Journal of Managerial Psychology*, 22, pp. 309-328.
6. Bakker, A.B., Demerouti, E. & Verbeke, W. (2004). Using the job demands-resources model to predict burnout and performance, *Human Resource Management*, 43, pp. 83-104.
7. Bakker, A.B., Le Blanc, P.M. & Schaufeli, W.B. (2005). Burnout contagion among nurses who work at intensive care units, *Journal of Advanced Nursing*, 51, pp. 276-287.
8. Bakker, A.B., Van Emmerik, J.H. & Euwema, M.E. (2006a). Crossover of burnout and engagement in work teams, *Work & Occupations*, 33, pp. 1-26.
9. Barger, P.B. & Grandey, A.A. (2006). Service with a smile and encounter satisfaction: Emotional contagion and appraisal mechanisms, *Academy of Management Journal*, 49, pp. 1229-1238.
10. Barsade, S.G. (2002). The ripple effect: Emotional contagion and its influence on group behavior, *Administrative Science Quarterly*, 47, pp. 644-675.
11. Bavelas, J.B., Black, A., Lemery, C.R. & Mullett, J. (1987). Motor mimicry as primitive empathy. In N. Eisenberg & J. Strayer (Eds.), *Empathy and its development* (pp. 317-338), New York, Cambridge University Press.
12. Bernieri, F.J., Reznick, J.S. & Rosenthal, R. (1988). Synchrony, pseudosynchrony, and dissynchrony: Measuring the entrainment process in mother-infant interactions, *Journal of Personality and Social Psychology*, 54, pp. 1242-1253.
13. Bollen, K.A. & Curran, P.J. (2006). *Latent Curve Models: A Structural Equation Approach*, Wiley Series on Probability and Mathematical Statistics, John Wiley & Sons: New Jersey.
14. Bono, J.E. & Ilies, R. (2006). Charisma, positive emotions and mood contagion, *The Leadership Quarterly*, 17, pp. 317-334.

15. Brief, A.P. & Weiss, H.M. (2002). Organizational behavior: Affect in the workplace, *Annual Review of Psychology*, 53, pp. 279-307.
16. Burke, R.J. (1989). Toward a phase model of burnout: Some conceptual and methodological concerns, *Group and Organization Studies*, 14, pp. 23-32.
17. Buunk, A.P. & Schaufeli, W.B. (1993). Burnout: a perspective from social comparison theory, In W.B. Schaufeli, C. Maslach & T. Marek (Eds.), *Professional Burnout: Recent Developments in Theory and Research*, New York, Taylor & Francis, pp. 53-69.
18. Cherniss, C. (1980). *Professional burnout in human service organizations*, New York: Praeger.
19. Cherulnik, P.D., Donley, K.A., Wiewel, T.S.R. & Miller, S.R. (2001). Charisma is contagious: The effect of leaders' charisma on observers' affect, *Journal of Applied Social Psychology*, 31, pp. 2149-2159.
20. Chullen, C.L. (2014). Burnout Contagion in Supervisor-Subordinate Dyads, *Business and Management Research*, 3 (2), pp. 67-80.
21. Chullen, C.L., Dunford, B.B., Angermeier, I., Boss, R.W. & Boss, A.D. (2010). Minimizing deviant behavior in healthcare organizations: The effects of supportive leadership and job design, *Journal of Healthcare Management*, 55 (6), pp. 381-397.
22. Cordes C.L. & Dougherty, T.W. (1993). A review and integration of research on job burnout, *Academy of Management Review*, 18, pp. 621-656.
23. Crawford, E.R., LePine, J.A. & Rich, B.L. (2010). Linking job demands and resources to employee engagement and burnout: A theoretical extension and meta-analytic test, *Journal of Applied Psychology*, 95, pp. 834-848.
24. Demerouti, E., Bakker, A.B., Nachreiner, F. & Schaufeli, W.B. (2001). The job demands-resources model, *Journal of Applied Psychology*, 86, pp. 499-512.
25. Dillman, D.A. (2000). *Mail and Internet Surveys: The Tailored Design Method*, New York, John Wiley.
26. Efron, B. & Tibshirani, R. (1993). *An introduction to the bootstrap*, New York, Chapman & Hall.
27. Feldman, D.C. (1976). A contingency theory of socialization, *Administrative Science Quarterly*, 21, pp. 433-452.
28. Feldman, D.C. (1981). The multiple socialization of organizational members, *Academy of Management Review*, 6, pp. 309-318.
29. Feldman, D.C. & Brett, J. (1983). Coping with new jobs: A comparative study of new hires and job changers, *Academy of Management Journal*, 26, pp. 258-272.
30. Fisher, C.D. & Gitelson, R. (1983). A Meta-Analysis of the Correlates of Role Conflict and Ambiguity, *Journal of Applied Psychology*, 68, pp. 320-333.
31. Griffith, J.W., Kerr, W.A., Mayo, T.B. & Topal, J.R. (1950). Changes in subjective fatigue and readiness for work during the eight-hour shift, *Journal of Applied Psychology*, 34, pp. 163-166.
32. Groenestijn, E., Buunk, B.P. & Schaufeli, W.B. (1992). Het besmettingsgevaar bij burnout: De rol van socialevergelijkingsprocessen [The danger of burnout contagion: the role of social comparison processes]. In R.W. Meertens, A.P. Buunk, P.A.M. van Lange, & B. Verplanken (Eds.), *Socialepsychologie & beïnvloeding van intermenselijke en gezondheidsproblemen*, The Hague, The Netherlands: VUGA, pp. 88-103.
33. Halbesleben, J.R.B. & Bowler, W.M. (2007). Emotional exhaustion and job performance: The mediating role of motivation, *Journal of Applied Psychology*, 92, pp. 93-106.
34. Halbesleben, J.R.B. & Buckley, M.R. (2004). Burnout in organizational life, *Journal of Management*, 30, pp. 859-879.
35. Hatfield, E., Cacioppo, J.T. & Rapson, R.L. (1994). *Emotional Contagion*, Cambridge University Press, New York.
36. Hayes, A.F., Preacher, K.J. & Myers, T.A. (2011). Mediation and the estimation of indirect effects in political communication research. In E.P. Bucy & R.L. Holbert (Eds.), *The sourcebook for political communication research: Methods, measures and analytical techniques*, New York: Routledge.
37. Hobfoll, S.E. (1989). Conservation of resource: a new attempt at conceptualizing stress, *American Psychologist*, 44 (3), pp. 513-524.
38. Hsee, C.K., Hatfield, E., Carlson, J.G. & Chemtob, C. (1990). The effect of power on susceptibility to emotional contagion, *Cognition and Emotion*, 4, pp. 327-340.
39. Ilies, R., Wagner, D.T. & Morgesen, F.P. (2007). Explaining affective linkages in teams: Individual differences in susceptibility to contagion and individualism-collectivism, *Journal of Applied Psychology*, 92, pp. 1140-1148.
40. Jackson, S.E. & Schuler, R.S. (1985). A meta-analysis and conceptual critique of research on role ambiguity and role conflict in work settings, *Organizational Behavior and Human Decision Processes*, 36, pp. 16-78.
41. Jackson, S.E., Schwab, R.L. & Schuler, R.S. (1986). Toward an understanding of the burnout phenomenon, *Journal of Applied Psychology*, 71, pp. 630-640.
42. Jackson, S.E., Turner, J.A. & Brief, A.P. (1987). Correlates of burnout among public service lawyers, *Journal of Occupational Behavior*, 8, pp. 339-349.
43. Janssen, P.P.M., Bakker, A.B. & De Jong, A. (2001). A Test and Refinement of the Demand-Control-Support Model in the Construction Industry, *International Journal of Stress Management*, 8 (4), pp. 315-332.
44. Kahill, S. (1988). Symptoms of professional burnout: A review of the empirical evidence, *Canadian Psychology*, 29, pp. 284-297.
45. Kahn, R.L. (1978). Job burnout: Prevention and remedies, *Public Welfare*, 36, pp. 61-63.
46. Kahn, R.L., Wolfe, D.M., Quinn, R.P., Snoek, J.D. & Rosenthal, R.A. (1964). *Organizational stress: Studies in role conflict and ambiguity*, New York, NY, John Wiley & Sons.

47. Kandolin, I. (1993). Burnout of female and male nurses in shiftwork, *Ergonomics*, 36, pp. 141-147.
48. Kenny, D.A., Kashy, D.A. & Bolger, N. (1998). Data analysis in social psychology, In D. Gilbert, S. Fiske & G. Lindzey (Eds.), *The handbook of social psychology* (Vol. 1, 4th ed., pp. 233-265), Boston, MA: McGraw-Hill.
49. Lee, R.T. & Ashforth, B.E. (1996). A meta-analytic examination of the correlates of the three dimensions of job burnout, *Journal of Applied Psychology*, 81, pp. 123-133.
50. Leiter, M.P. (1989). Conceptual implications of two models of burnout. A response to Golembiewski, *Group & Organization Studies*, 14, pp. 15-22.
51. Leiter, M.P. (1991). Coping patterns as predictors of burnout. The functions of control and escapist coping patterns, *Journal of Occupational Behavior*, 12, pp. 123-144.
52. Leiter, M.P. (1993). Burnout as a developmental process: consideration of models. In W.B. Schaufeli, C. Maslach & T. Marek (Eds.), *Professional Burnout: Recent Developments in Theory and Research*, Washington, DC, Taylor & Francis, pp. 237-250.
53. Leiter, M.P. & Maslach, C. (1988). The impact of interpersonal environment on burnout and organizational commitment, *Journal of Organizational Behavior*, 9, pp. 297-308.
54. Lemkau, J.P., Rafferty, J.P., Purdy, R.R. & Rudisill, J.R. (1987). Sex role stress and job burnout among family practice physicians, *Journal of Vocational Behavior*, 31, pp. 81-90.
55. Lewis, K.M. (2000). When leaders display emotion: how followers respond to negative emotional expression of male and female leaders, *Journal of Organizational Behavior*, 21, pp. 221-234.
56. Maslach, C. (1982). *Burnout: The cost of caring*, Englewood Cliffs, NJ, Prentice Hall.
57. Maslach, C. & Jackson, S.E. (1981). The measurement of experienced burnout, *Journal of Occupational Behaviour*, 2, pp. 99-113.
58. Maslach, C. & Jackson, S.E. (1985). The role of sex and family variables in burnout, *Sex Roles*, 12, pp. 837-851.
59. Maslach, C. & Pines, A. (1977). The burnout syndrome in the day care setting, *Child Care Quarterly*, 6, pp. 100-113.
60. Maslach, C., Schaufeli, W.B. & Leiter, M.P. (2001). Job burnout, *Annual Review of Psychology*, 52, pp. 397-422.
61. Mayer, D.M., Kuenzi, M., Greenbaum, R.L., Mawritz, M. and Salvador, R. (2009). How low does ethical leadership flow? Test of a trickle down model, *Organizational Behavior & Human Decision Processes*, 108, pp. 1-13.
62. Mooney, C.Z. & Duval, R.D. (1993). *Bootstrapping*, Thousand Oaks, CA, Sage.
63. Perlman, B. & Hartman, E.A. (1982). Burnout: Summary and future research, *Human Relations*, 35, pp. 283-305.
64. Peterson, M.F., Smith, P.B., Akande, A., Ayestaran, S., Bochner, S., Callan, V. et al. (1995). Role conflict, ambiguity, and overload: A 21-nation study, *Academy of Management Journal*, 38 (2), pp. 429-452.
65. Pinder, C.S. & Schroeder, K.G. (1987). Time to proficiency following job transfers, *Academy of Management Journal*, 30, pp. 336-353.
66. Pines, A.M., Aronson, E. & Kafry, D. (1981). *Burnout: From tedium to personal growth*, New York, NY, Free Press.
67. Pines, A. & Maslach, C. (1978). Characteristics of staff burnout in mental health settings, *Hospital and Community Psychiatry*, 29, pp. 233-237.
68. Podsakoff, P.M., MacKenzie, S.B., Lee, J.Y. & Podsakoff, N.P. (2003). Common method biases in behavioral research: A critical review of the literature and recommended remedies, *Journal of Applied Psychology*, 88, pp. 879-903.
69. Preacher, K.J. & Hayes, A.F. (2004). SPSS and SAS procedures for estimating indirect effects in simple mediation models, *Behavior Research Methods, Instruments and Computers*, 36, pp. 717-731.
70. Pretty, G.M.H., McCarthy, M.E. & Catano, V.M. (1992). Psychological environments and burnout: Gender considerations within the corporation, *Journal of Organizational Behavior*, 13, pp. 701-711.
71. Schaufeli, W.B. & Bakker, A.B. (2004). Job demands, job resources, and their relationship with burnout and engagement: A multi-sample study, *Journal of Organizational Behavior*, 25, pp. 293-315.
72. Schaufeli, W.B. & Enzmann, D. (1998). *The burnout companion to study and research: A critical analysis*, London, Taylor & Francis.
73. Schaufeli W.B, Bakker A.B, Van Rhenen W. (2009). How changes in job demands and resources predict burnout, work engagement, and sickness absenteeism, *Journal of Organizational Behavior*, 30, pp. 893-917.
74. Schwab, R.L. & Iwanicki, E.F. (1982). Perceived role conflict, role ambiguity, and teacher burnout, *Educational Administration Quarterly*, 18, pp. 60-74.
75. Shrout, P.E. & Bolger, N. (2002). Mediation in experimental and nonexperimental studies: New procedures and recommendations, *Psychological Methods*, 7, pp. 422-445.
76. Singer, J.D. & Willett, J.B. (2003). *Applied longitudinal data analysis*. New York: Oxford University Press.
77. Sy, T., Côté, S. & Saavedra, R. (2005). The contagious leader: Impact of the leader's mood on the mood of group members, group affective tone, and group processes, *Journal of Applied Psychology*, 90, pp. 205-305.
78. Uchino, B., Hsee, C.K., Hatfield, E., Carlson, J.G. & Chemtob, C. (1991). *The Effect of Expectations on Susceptibility to Emotional Contagion*, Unpublished manuscript, University of Hawaii, Hawaii.
79. Westman, M. (2002). Crossover of stress and strain in the family and in the workplace. In P.L. Perrewé & D.C. Ganster (Eds.), *Research in occupational stress and well-being* (Vol. 2, pp. 143-181). Greenwich, CT, JAI.
80. Whitehead, J.T. (1987). Probation officer job burnout: A test of two theories, *Journal of Criminal Justice*, 15, pp. 1-16.
81. Wright, T.A. & Cropanzano, R. (1998). Emotional exhaustion as a predictor of job performance and voluntary turnover, *Journal of Applied Psychology*, 83, pp. 486-493.