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## Employee Burnout and Health Current Knowledge and Future Research Paths

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The major objective of this chapter is to integrate and summarize what is already known about burnout and certain aspects of physical health. Another objective is to provide a roadmap depicting promising future research directions on employee burnout and health. The major sections of the review focus on burnout and health behaviors, burnout and self-rated health, and burnout and chronic disease. The chronic diseases that I focus on are cardiovascular disease and its major risk factors, diabetes, and musculoskeletal disorders, primarily because there is a significant body of evidence on each of them. In the final section, I suggest several promising future research paths on employee burnout and health. Given the complexity of the burnout construct and the controversy over its operational definition (e.g., Kristensen, Borritz, Villadsen, & Christensen, 2005), I first provide a conceptual analysis of the phenomenon of burnout.

The literature on burnout is now vast; a bibliography covering the period 1990–2002 (Boudreau & Nakashima, 2002) identified 2,138 distinct items, while a more recent (March 2009) search of Google Scholar—under the key term *burnout*—yielded more than 260,000 entries. Given the amount of time most adults spend on work-related activities, and the wealth of literature pointing to the pivotal importance of one's job characteristics to one's self-identity (Bandura, 2002), the focus on burnout is understandable. A number of comprehensive reviews of various aspects of burnout at work have been published in recent years (e.g., Halbesleben, 2006; Halbesleben & Buckley, 2004; Melamed, Shirom, Toker, Berliner, & Shapira, 2006; Schaufeli & Buunk, 2003). The current review, however, does not overlap with any of these; instead, it attempts to discuss themes and topics that have not yet been systematically reviewed in prior studies.

Burnout is viewed as an affective reaction to ongoing stress whose core content is the gradual depletion over time of individuals' intrinsic energy resources, including, as the major types of energy resource depletion, emotional exhaustion, physical fatigue, and cognitive weariness (cf. Shirom, 2003). This review

focuses on employee burnout in work organizations, excluding research that deals exclusively with nonwork-related settings.

### **Why Use Burnout Rather Than Stress Exposure?**

It could be argued that if burnout reflects and summarizes individuals' experiences of work-related stress—as posited above—researchers could focus on work-related stress as a major predictor of subsequent health impairments. Why do we need the construct of burnout to better understand the impact of the work context on employee health?

To demonstrate the relevance of focusing on burnout rather than on stress at work, I would like to present the case of stress, burnout, and cardiovascular disease (CVD). There is a substantial body of empirical evidence linking each of a large number of work-related stresses to CVD morbidity and mortality (Belkic, Landsbergis, Schnall, & Baker, 2004; Rozanski, Blumenthal, Davidson, Saab, & Kubzansky, 2005). However, there have been very few attempts to study the effects of combined exposure to these stresses on CVD risk factors (Belkic, Schnall, Savic, & Landsbergis, 2000). Such attempts often encounter basic problems which are very difficult to solve in any study. These basic problems include identifying the most relevant subset of stresses to be covered by any given study, how to represent both contextualized (idiographic) and noncontextualized (nomothetic) types of stress, which types of stress to cover (namely, chronic stress, critical work events, hassles), whether to combine the impact of the specific stresses covered by a study in a linear or nonlinear manner, and how to account for dose-response relationships (Zapf, Dormann, & Frese, 1996). A major limitation of past attempts to use stress inventories (e.g., Belkic, Schnall, Savic, & Landsbergis, 2000) is the lack of theoretical and empirical consideration of the actual reality of work environments, characterized by nonlinear relationships and complex interactions among types of stress (Cummings & Cooper, 1998). Burnout develops after an extended period of exposure to job stress, and therefore could be viewed as a major manifestation of stress consequences (Melamed et al., 2006). I regard burnout as a proxy variable that may be used to assess the extent to which individuals have experienced work-related stresses that deplete their energy resources.

### **On the Conceptual Meaning of Burnout**

When measured on several occasions in longitudinal studies, burnout was found to have moderate to high stability coefficients. In longitudinal studies on burnout, the across-time correlations (also referred to as stability coefficients) were found to range from .50 to .60, regardless of the measure of burnout used (for references to these longitudinal studies, please see Melamed et al. 2006). This suggests that, regardless of the sample makeup, the cultural context, and the length of time of the

follow-up survey, the phenomenon of burnout exhibits stability, attesting to its chronic nature. Other types of affective states have been found to exhibit the same degree of stability over time (Conley, 1984; Luthans, Avolio, Avey, & Norman, 2007), so burnout is not exceptional in its chronic nature. Below, I review three major conceptualizations of burnout.

### The Maslach Burnout Inventory (MBI)

The MBI (or any of its more recent versions, such as the MBI-General Survey) has been the most popular instrument for measuring burnout in empirical research (for a review of studies using this measure see Collins, 1999; Lee & Ashforth, 1996; Schaufeli & Enzmann, 1998). The MBI contains items purportedly assessing each of the three clusters of symptoms included in the syndrome view of burnout, which are emotional exhaustion, cynicism or depersonalization, and reduced effectiveness or lowered professional efficacy. It asks respondents to indicate the frequency over the work year with which they have experienced each feeling on a 7-point scale ranging from 0 (never) to 6 (every day). Kristensen et al. (2005) provide a description of the way the BMI was constructed: by collecting a large pool of items, subjecting them to an exploratory data analytic technique (exploratory factor analysis), and labeling the resultant factors as per the three components of the MBI, claiming that these factors represent the range of experiences associated with the phenomenon of burnout (see also Maslach, 1998, p. 68; Schaufeli & Enzmann, 1998, p. 51). As Kristensen et al. (2005) and others (e.g., Shirom, 2003) point out, the MBI was not constructed based on an underlying theory explaining why the three factors should belong to the phenomenon of burnout rather than, say, to its immediate consequences (such as depersonalization or reduced personal accomplishments, two components of the MBI).

The factorial validity of the MBI has been extensively studied (for a recent meta-analysis of validation studies, see: Worley, Vassar, Wheeler, & Barnes, 2008). Most of the researchers examining this aspect of MBI validity have reported that a three-factor solution better fits their data than does a two-dimensional or a one-dimensional structure. Researchers using the MBI have most often constructed three different scales corresponding to the three dimensions of emotional exhaustion, cynicism, and reduced personal effectiveness, and have used them as three separate scales, following the specific recommendation included in the MBI manual *not* to use the MBI's total score (Maslach, Jackson, & Leiter, 1996). Several authors interpreted this instruction from the MBI manual and empirical evidence as indicating that, conceptually, the aggregation of the three MBI dimensions is meaningless, and therefore an overall score of the MBI should not be used (Kristensen et al., 2005). The emotional exhaustion dimension has been consistently viewed as the core component of the MBI, predicting the other two components in longitudinal studies (Taris, Le Blanc, Schaufeli, & Schreurs, 2005). Most studies have shown it to be the most internally consistent and stable component, relative to the other two (Schaufeli & Enzmann, 1998). In meta-analytic reviews, the emotional exhaustion dimension has been

shown to be the one that is most responsive to the nature and intensity of work-related stress (Lee & Ashforth, 1996; Schaufeli & Enzmann, 1998).

### Pines's burnout model and measure

Pines and colleagues defined burnout as a state of physical, emotional, and mental exhaustion caused by long-term involvement in emotionally demanding situations (for references, see Pines, 1993). Pines and colleagues (e.g., Pines, Aronson, & Kafry, 1981) view burnout as applicable to all life domains, including, for example, marital relationships (Pines, 1987). Much like the MBI, their conceptualization of burnout emerged from clinical experiences and case studies. In the process of actually constructing a measure that purported to assess burnout—dubbed the *burnout measure* (BM)—Pines and her colleagues moved away from the definition offered previously. In the BM, Pines and her colleagues viewed burnout as a syndrome of co-occurring symptoms that include helplessness, hopelessness, entrapment, decreased enthusiasm, irritability, and a sense of lowered self-esteem (Pines, 1993). None of these symptoms, however, is anchored in the context of work or employment relationships. The BM is considered a one-dimensional measure yielding a single-composite burnout score. Evidently, the overlap between the conceptual definition and the operational definition is minimal (cf. Schaufeli & Enzmann, 1998, p. 48). In addition, the discriminant validity of burnout, as assessed by the BM, relative to depression, anxiety, and self-esteem is impaired (Shirom & Ezrachi, 2003). This has led researchers to describe the BM as an index of psychological strain that encompasses physical fatigue, emotional exhaustion, depression, anxiety, and reduced self-esteem (e.g., Schaufeli & Dierendonck, 1993, p. 645).

### The Shirom–Melamed Burnout Model and Measure

The conceptualization of burnout that underlies the Shirom–Melamed Burnout Measure (SMBM: freely downloadable from [www.shirom.org](http://www.shirom.org)) was inspired by the work of Maslach and colleagues and Pines and colleagues, as described earlier. Burnout is viewed as an affective state characterized by one's feelings that one's physical, emotional, and cognitive energies are depleted. Theoretically, the SMBM was based on Hobfoll's (Hobfoll, 1989, 2002) Conservation of Resources (COR) theory. The basic tenets of COR theory state that people are motivated to obtain, retain, and protect that which they value. The things that people value are called *resources*, of which there are several types, including material, social, and energy resources. The conceptualization of burnout formulated by Shirom (1989) on the basis of COR theory (Hobfoll & Shirom, 2000) relates to energy resources only, and covers physical, emotional, and cognitive energies (for the theoretical rationale of focusing on energy resources, see Shirom, 2003). COR has often been used in past research to explain burnout (e.g., Halbesleben & Rathert, 2008; Neveu, 2007; Wright & Cropanzano, 1998). Burnout is most likely to occur in situations where there is an actual resource loss, perceived threat of resource loss, or when one fails to

obtain resources to offset lost resources—situations defined as being stress-related in COR (Hobfoll & Shirom, 2000).

Burnout, based on COR and as operationally defined by the SMBM, was conceptualized as a multidimensional construct whose three facets were physical fatigue (feelings of tiredness and low energy) emotional exhaustion (lack of the energy to display empathy to others), and cognitive weariness (feelings of reduced mental agility). There were several theoretical reasons for focusing on these three facets. First, physical, emotional, and cognitive energy are individually possessed, and are expected to be closely interrelated (Hobfoll & Shirom, 2000). COR theory postulates that personal resources affect one another and exist as a resource pool—lacking one is often associated with lacking another. Furthermore, COR theory argues that these resources represent a set of resources internal to the self that facilitates the development and use of other resources (Hobfoll, 2002). Third, the conceptualization of the SMBM clearly differentiates burnout from stress appraisals antecedent to burnout, from coping behaviors that individuals may engage in to ameliorate the negative aspects of burnout—like distancing themselves from client recipients—as well as from probable consequences of burnout—like performance decrements similar to reduced personal accomplishments in the MBI. Using confirmatory structure analysis, empirical research conducted using the SMBM confirmed the tri-component view of the construct (cf. Melamed et al., 2006; Shirom, Nirel, & Vinokur, 2006; Shirom, Vinokur, & Nirel, in press). The MBI was found (Shirom & Melamed, 2006) to be comparable in terms of construct validity to the conceptualization of burnout used in this study. A series of studies that confirmed expected relationships between the SMBM and physiological variables have lent support to its construct validity (for a review of these studies, please see Melamed et al., 2006).

## Burnout and Health Behaviors

The theoretical perspective on burnout proposed above, based on the Conservation of Resources theory (Hobfoll & Shirom, 2000) leads to the expectation that people experiencing a loss of resources will try to limit further losses and thus engage in poor health behaviors. People often distract themselves from situations that cause them distress, like burnout, by engaging in health-impairing activities such as smoking, consuming alcohol, or eating high-sugar food—health behaviors that may alleviate their distress in the short run, but at the expense of a deteriorating state of health in the long run (Schwarzer & Fuchs, 1995). There is a body of evidence documenting negative associations between denial and avoidance types of coping, such as those represented by the above health behaviors, and health status (Penley, Tomaka, & Wiebe, 2002). For example, there is a widespread belief that high job-stress can lead to high levels of alcohol consumption, a paradigm known as the “tension reduction model” (Cooper, Russell, & Frone, 1990). However, recent evidence has substantiated the theoretical argument that the relationship between work stress and alcohol consumption is mediated by impoverished worker resources, among other vulnerabilities of workers (Frone, 2003).

The relationships between burnout and health behaviors have hardly been subjected to empirical scrutiny (Schaufeli & Enzmann, 1998, pp. 87–89). For example, we could not identify any prior study that related burnout to nutrition habits, weight control, and physical exercise. Schaufeli and Enzmann (1998, p. 88) found four studies that investigated the linkages among health behaviors (coffee consumption, alcohol consumption, caloric intake, substance abuse, and smoking) and emotional exhaustion or burnout, all of which reported null or very small correlations. However, their review did not cover burnout as defined by the vital exhaustion construct as a measure of burnout (Appels, 2004). Appels (for references, see Appels, 2004) introduced the construct of *vital exhaustion*, abbreviated as VE, which refers to a state characterized by excess fatigue, lack of energy, increased irritability, sleep disturbances, and feelings of demoralization. VE is considered to be a measure conceptually akin to burnout, but differing from it because it includes items gauging sleep disturbances, anxiety and depression; therefore, it was not included among the major approaches toward the conceptualization of burnout described in an earlier section. Several studies reported that burnout, as assessed by the VE measure, was closely correlated with smoking (Bages, Falger, Perez, & Appels, 2000). A large-scale epidemiological study of males and females in Denmark (Prescott, Holst, Gronbaak, Schohr, Jensen, & Barefoot, 2003) found VE to be closely correlated with two measures of obesity (waist-hip ratio and body mass index), smoking, leading a physically inactive life, and alcohol consumption. None of the above studies controlled for depression, which conceptually (Suls & Bunde, 2005) and empirically (Schaufeli & Enzmann, 1998) partially overlaps burnout regardless of the measure used to assess either. Based on the above body of evidence and theoretical reasoning, I would like to suggest that future research examine if, and under what conditions, burnout would be positively associated with adverse health behaviors, including smoking, lack of exercise, and excessive caloric intake leading to obesity.

The importance of new knowledge about burnout–health behaviors relationships is highlighted by a recent study that indicated that they may synergistically interact in influencing CVD risk. A follow-up study of a large cohort of initially healthy individuals uncovered a synergistic effect of smoking and VE on ischemic stroke risk. In a multivariate analysis, current smoking and high burnout were found to be independent risk factors for ischemic stroke, with the corresponding hazard ratios of 1.76 and 1.94, respectively. However, in combination they yielded a hazard ratio of 2.71 (Schwartz, Carlucci, Chambless, & Rosmand, 2004).

## Burnout and Self-Rated Health

I have chosen to focus on self-rated health (SRH) for several reasons. First, several meta-analytic studies have concluded that SRH predicts mortality and survival after adjusting for traditional risk factors, sociodemographic characteristics, and objective measures of health status (Benyamini & Idler, 1999; DeSalvo, Bloser, Reynolds, He, & Muntner, 2006; Idler & Benyamini, 1997). Second, SRH has also

been demonstrated to predict a variety of outcomes related to healthcare utilization and costs (DeSalvo et al., 2009). Third, the predictive power of SRH with respect to subsequent survival possibly reflects its ability to cover a wide spectrum of health conditions and attests to its validity as a global health status measure (McGee, Liao, Cao, & Cooper, 1999). Corresponding to the literature (e.g., DeSalvo et al., 2004), SRH was conceptualized to reflect a person's global assessment of his or her general state of health. Qualitative (Benyamini, Leventhal, & Leventhal, 2000) and quantitative (Singh-Manoux et al., 2006) studies found that SRH represents a holistic summary of how individuals perceive their overall health status.

Good health, as indexed by SRH, should be negatively linked to burnout because it represents a pivotal coping resource, reducing the impact of individuals' exposure to stressors on their burnout, and allowing individuals to recover from situations of depleted energy resources (Hobfoll, 2002). Additionally, burnout signifies that one's energy resources in an important life domain have depleted, and this should lead to a decrement in one's SRH.

The VE measure has been linked to self-reported ill-health or disease states. Using a measure of self-reported general health in a two-wave study of healthy males in Sweden, Halford, Anderzen, & Arnetz, (2003) found this measure to correlate negatively with VE. Self-rated health has also been found to be closely correlated with burnout in other studies (Gorter, Eijkman, & Hoogstraten, 2000; Soderfeldt, Soderfeldt, Ohlson, Theorell, & Jones, 2000). In a longitudinal study of staff burnout in a psychiatric hospital, self-reported frequency of serious illness shared 10% of the variance with burnout, as measured by emotional exhaustion, after controlling for social support and other confounders (Corrigan et al., 1994); a similar result was obtained for the relationship of these variables in another study (Bhagat, Allie, & Ford, 1995). Vinokur, Pierce, & Lewandowski-Romps (2009) made a unique contribution to the study of the effects of burnout on health by viewing SRH as a health-related outcome being impacted by burnout. They assessed burnout based on the Conservation of Resources (COR) theory as referring to individuals' affective reactions to the gradual depletion of their energy resources (cf. Shirom, 2003). These represent important and basic coping resources; therefore, a feeling that one's physical, cognitive and emotional or interpersonal resources have been depleted is likely to impact one's SRH. The obverse may also be correct: one's perceived state of health is an important resource, therefore, any changes in it are likely to have an impact on one's level of burnout. Based on a longitudinal design and using structural equation modeling, Vinokur et al. (2009) were able to demonstrate that across time, perceived health predicted a decrease in burnout and burnout predicted a decrease in perceived health, providing support for the coexistence of both types of effects. However, they were also able to find considerable support for their expectation that the effect of perceived health on burnout is stronger than the effects of burnout on perceived health. Furthermore, when they applied a one-item measure of SRH widely used in past studies, rather than the four-item measure of perceived health that they used themselves, only the effect of SRH on burnout turned out to be significant. This finding provides support for the COR-based theoretical view of burnout.

The effects of burnout on SRH could be moderated by self-efficacy, social support, and proactive coping. Personal and social resources are regarded as mitigating the impact of burnout on distress and well-being (Hobfoll & Shirom, 2000) and this proposition has been supported by empirical evidence (Schaufeli & Enzmann, 1998). Among the many coping resources, there are two that play a key role in social cognitive theories which explain human development, adaptation and change (Bandura, 2002). These two coping resources have received the most empirical support in terms of their effects on health and health behaviors: social support (Uchino, 2006) and self-efficacy (Bandura, 2002). Coping strategies represent behavioral and cognitive efforts to manage external and internal demands that are perceived as taxing or exceeding a person's resources (Lazarus, 1999). Self-efficacy and proactive coping represent fundamental components of individual adaptability (Bandura, 2002).

Proactive coping represents yet another important mediational link in the burnout–health behaviors relationship. A recent review of the burnout literature reported that burnt-out individuals tend to cope with stressful situations or events by utilizing a rather defensive and passive coping style (Schaufeli & Enzmann, 1998, p. 78). Following the theoretical lead of Knoll, Rieckmann, & Schwarzer (2005), I too argue that coping mediates burnout–health behaviors relationships.

## Burnout and Cardiovascular Disease (CVD)

The body of evidence linking burnout with the subsequent incidence of CVD is primarily based on studies that used the VE measure to predict the incidence of CVD. This body of evidence suggests that, even after adjusting for potential confounding variables, the relative risk associated with burnout and the VE approach was equal to and sometimes, depending on the outcome studied, even exceeded the risk conferred by classical risk factors, such as age, body mass index (BMI), smoking, blood pressure and lipid levels.

Using VE as a predictor variable, Appels et al. (2003) conducted the first systematic research study in this area using objective indicators of physical morbidity. VE was predictive of future MI in apparently healthy men and women, independent of the classic risk factors (Appels, Falger, & Schouten, 1993; Appels & Mulder, 1988). To illustrate, in a 4.2-year follow-up of apparently healthy men, VE was predictive of future MI, even after controlling for blood pressure, smoking, cholesterol levels, age and use of anti-hypertensive drugs (Appels & Mulder, 1988). In a prospective study of adults (41–66 years of age), VE was found to be associated with the triple risk of fatal and nonfatal MI (new cases as well as recurrent MI), after controlling for a host of potential confounding variables, including previous MI (Schuitemaker, Dinant, Van der Pol, & Appels, 2004). In another prospective study of a community sample, VE was found to be a risk factor for ischemic heart disease (with an RR ranging between 1.36 and 2.10, depending on the questionnaire items selected), and with all-cause mortality (Prescott et al., 2003). VE was also found to be associated with excess CHD mortality, with adjusted Rate Ratio = 2.07 (Cole, Kawachi, Sesso, Paffenbarger, & Lee, 1999). In other studies, VE was also



found to be associated with a 1.3-1.9-fold increased risk of incident stroke (Schuitemaker, Dinant, Van Der Pol, Verhelst, & Appels, 2004; Schwartz et al., 2004), and to be a precursor of sudden cardiac death, with an RR = 2.28 or 2.81, depending upon the reference group (Appels, Golombeck, Gorgels, De Vreede, & Van Breukelen, 2002).

Other studies have also indicated that burnout may be a risk factor for coronary heart disease (CHD). In a recent case-control study, women with CHD reported a higher level of burnout compared with matched controls. The CHD women also showed a lower level of coping abilities (Hallman, Thomsson, Burell, Lisspers, & Setterlind, 2003), replicating an earlier case-control study in which burnout was found to be associated with increased risk of CHD for both men (RR = 3.1) and women (RR= 3.4) (Hallman, Burell, Setterlind, Oden, & Lisspers, 2001). Using data from the prospective study of healthy men mentioned above, Appels & Schouten (1991) found that a single question measuring burnout, "Have you ever been burned out?", was found to be predictive of MI risk (RR = 2.13). It should be noted that the reliability of this burnout measure is unknown.

In sum, there is sufficient evidence from several prospective cohort studies linking burnout and VE with risk of CVD and cardiovascular related events. The relative risk associated with burnout and VE is of similar magnitude to that of the classical risk factors for CVD.

## Organizational-Level Burnout

To date, the literature on burnout has dealt almost exclusively with the individual level of analysis. With few exceptions (Leiter & Maslach, 1988; O'Driscoll & Schubert, 1988), the potentialities of investigating group or organizational burnout have not yet been systematically explored. It is plausible that burnout as analyzed on the individual level has its organizational counterpart. There may be parallel processes operating at the individual and organizational levels. The open-systems approach postulates that there is a dynamic interplay and interconnectedness among elements of any system, its subsystems, and within the more inclusive system. Focusing on organizational burnout may entail a much higher system complexity than the extant focus on individual burnout.

A process of depletion of organizational resources may be self-imposed by those at the helm of the organization, like setting unrealistic production targets that overload and overuse the employees' available energy resources, eventually also exacerbating their level of burnout. This process may be externally imposed by stakeholders' excessive demands for product or service quality that continuously deplete the organization's energy resources. For example, it was shown that resource scarcity, on the collective level, influences intergroup cooperation and conflict (Kramer, 1991). Organizational behavior has imported the resource-based model of the firm from the field of economics as a major theoretical framework. Within this resource-based view of organizations, issues like resource mobility and heterogeneity have been applied to explain firms' competitive advantage (Barney, 1991).

Indirect evidence from several studies indicates that concentration of burned-out employees in certain work groups is an existent phenomenon. In a relevant study (Roundtree, 1984), task groups in organizations were investigated for the prevalence of individual level burnout: it was found that almost 90% of those high on burnout were members of work groups in which at least 50% of all their members suffered from advanced burnout. In a series of studies, Bakker and colleagues (Bakker, Demerouti, & Schaufeli, 2003, 2005; Bakker, Demerouti, Taris, Schaufeli, & Schreurs, 2003; Bakker, Le Blanc, & Schaufeli, 2005) found evidence for burnout contagion processes among teachers, nurses, and other occupational categories. Still, the evidence is largely indirect and does not clarify whether the concentration of burned-out employees in certain work groups is a result of common exposure to stress, contagion processes that operate within these work groups, or other possible alternative explanations.

## Approaches to Reducing Burnout

In this section, I review studies that evaluate interventions designed to reduce burnout. It has been argued that workplace-based interventions, aimed at reducing stress and modifying some of the maladaptive responses to stress, often have little or no effect (Briner & Reynolds, 1999). Is this conclusion also relevant to interventions designed to ameliorate burnout? Most of the burnout interventions reported in the literature are individual-oriented and provide treatment, not prevention, much like other stress interventions (Nelson, Quick, & Simmons, 2001). There are hardly any existing reports on interventions that were based on a systematic audit of the structural sources of workplace burnout with the objectives of alleviating or eliminating the stresses leading to burnout. One possible explanation could be that employees with burnout are more often targets of individual-focused than occupational-focus intervention, as found in Finland (Ahola et al., 2007). A review of this issue (Schaufeli & Enzmann, 1998) noted that there are more than two dozen different approaches suggested as being useful for ameliorating burnout levels among employees. The burnout literature does not include reports of testing the vast majority of these approaches in research using a randomized control design. Using randomized control design is considered as the gold standard for testing the effectiveness of any therapeutic agent, including psychosocial interventions.

One type of intervention frequently used by organizations attempting to ameliorate burnout among their employees is that of peer support groups. The theoretical perspective offered in this chapter may explain the focus of many interventions on enriching and strengthening the social support available to or used by burned-out employees. According to the predictions of COR theory, the depletion of one's energy resources and impoverished social support are closely related (Hobfoll, 1989). Those lacking a strong resource pool, including those with impoverished social support, are more likely to become burned-out or to go through cycles of resource loss when they cope with work-related stress. In addition, people with

depleted energy resources who complain of physical fatigue, emotional exhaustion, and cognitive weariness may appear less attractive to their significant others at work and therefore become less likely to have access to social support. There is considerable support for these arguments. A review of the area of social support and stress (Curtona & Russell, 1990) included four studies that investigated the effects of social support on burnout among public school teachers, hospital nurses, therapists, and critical care nurses, respectively. In all four studies, negative associations between social support and burnout were found. For reasons explained earlier, these negative relationships may be reciprocal.

The peer social support intervention is particularly popular in educational institutions (Vandenberghe & Huberman, 1999). Such peer-based support groups provide their members with informational and emotional support, and in some cases, instrumental support as well. Because social support is a major potential route to resources that are beyond those that individuals possess directly, it is a critical resource in many employment-related stressful situations (Hobfoll & Shirom, 2000), and may help these individuals to replenish their depleted energy resources. However, how social support is actually used depends on several factors, including one's sense of mastery and environmental control. Several examples of past interventions that used peer-based support groups in the prevention of burnout were recently described by Peterson, Bergstrom, Samuelsson, Asberg, & Nygren (2008). Interventions based on different forms of group therapy (Salmela-Aro, Naatanen, & Nurmi, 2004) also found favorable effects of intra-group social support facilitated by the intervention on measures of burnout. Some interventions (Le Blanc, Hox, Schaufeli, Taris, & Peeters, 2007) combined staff support groups with a participatory action research approach and found the levels of emotional exhaustion in the experimental groups to be favorably influenced by the intervention.

In a longitudinal research of burnout among teachers, Brouwers and Tomic (2000) found that emotional exhaustion had a negative effect on self-efficacy beliefs, and that this effect occurred simultaneously, rather than over time. Hence, they reasoned that interventions that incorporate enactive mastery experiences—the most important source of self-efficacy beliefs—were likely to have an ameliorative effect on teachers' emotional exhaustion. An example would be having teachers learn and experiment with skills aimed at helping them cope with disruptive student behavior. In the same vein, environmental sense of control is another important stress management resource (Fisher, 1984). Those with a high sense of control tend to use their resources judiciously, relying on themselves when this is deemed most appropriate, and using available social support when this is the more effective coping route (Hobfoll & Shirom, 2000).

It follows from the above that interventions that combine social support and bolstering of control, such as the participatory approach of increasing employee involvement in decision-making processes, may be more efficacious in reducing burnout in organizations. For example, a multifaceted intervention combining peer social support and bolstering of professional self-efficacy was found to reduce burnout (measured by the SMBM), relative to a control group of nonparticipants (Rabin et al.,

2000). Another example is the study by Freedy and Hobfoll (1994), who enhanced nurses' coping skills by teaching them how to use their social support and individual mastery resources and found a significant reduction in emotional exhaustion in the experimental group, relative to the nontreated control group.

Senior management has a role to play in instituting preventive measures, including steps to ameliorate chronic work-related stress, particularly overload, as well as training programs designed to promote effective stress management techniques and on-site recreational facilities. Organizational interventions to reduce burnout have great potential, but are complex to implement and costly in terms of required resources. The changing nature of employment relationships, including the transient and dynamic nature of employee–employer psychological contact, entails putting more emphasis on individual-oriented approaches to combat burnout. The role of individual coping resources, including self-efficacy, hardiness, and social support from friends and family, may become more important in future interventions.

Yet another major approach used in experimental studies whose objective was to reduce burnout among employees is that of cognitive-behavioral therapy. In a cognitively oriented intervention designed to reduce feelings of inequity and ameliorate burnout in professional social workers (Van Dierendonck, Schaufeli, & Buunk, 1998)—an intervention based on one experimental group and two control groups, with two follow-ups, 6 months and 1 year later—it was found that the intervention was indeed effective in reducing emotional exhaustion (assessed based on the MBI). This intervention, as well as some of its predecessors (cf. Schaufeli & Entzmann, 1998), provided additional support for the view, expressed above, that the three facets of the MBI are influenced by different sets of antecedents.

## Future Research

An important area for future research lies in determining the validity of burnout, according to either of its different operational definitions, and distinguishing it from other types of emotional distress, particularly anxiety and depression. I have argued that burnout, anxiety, and depression are conceptually distinct emotional reactions to stress. Still, the overlap found in several studies (Schaufeli & Enzmann, 1998) between depression and the emotional exhaustion scale of the MBI—the most robust and reliable out of the three scales that make up the MBI—is a cause for concern. The propositions that early stages of individual burnout are more likely to be accompanied by heightened anxiety, while more progressive stages of burnout may be linked to depressive symptoms need to be tested in longitudinal research.

The plausibility of the proposition that burnout, as conceptualized in terms of its core meaning, will overlap, to some extent, with the disease state of chronic fatigue syndrome (CFS) or with its immediate precursor, chronic fatigue, has yet to be tested. In future investigations, individuals who score highest on burnout measures should be followed up for possible development of CFS.

A further important area of research concerns burnout as a possible precursor of cardiovascular disease. Early in the 1960s and 1970s, prospective studies found that being tired on awakening or being exhausted at the end of the day were possible antecedents of cardiovascular heart disease (Appels & Mulder, 1988, 1989). Appels and Mulder (1988, 1989) discovered that those initially high on their measure of vital exhaustion (a combination of burnout, anxiety, and depression) were significantly more at risk of developing myocardial infarction within four years, after controlling for known risk factors such as blood pressure, smoking, cholesterol, and age. In cross-sectional studies that tested the associations among cardiovascular risk factors and burnout, Melamed et al. (2006) found evidence linking the two entities. Longitudinal studies of fairly large and occupationally representative samples should be conducted to cross-validate these findings.

## Conclusion

Advances in our knowledge are unlikely to result from research using fuzzy concepts and relying on instruments whose construct validity is in doubt. For this reason, in this review I have selectively focused on theoretical and conceptual issues in burnout research.

Burnout is likely to represent a pressing social problem in the years to come. Competitive pressures in manufacturing industry that originate in the global market, the continuing process of consumer empowerment in service industries, and the rise and decline of the high-tech industry are among the factors likely to affect employees' levels of burnout in different industries. In addition, employees in many advanced market economies experience heightened job insecurity, demands for excessive work hours, the need for continuous retraining in the wake of the accelerating pace of change in informational technologies, and the blurring of the line separating work and home life. In many European countries, employers are enjoined by governmental regulations on occupational health to implement preventive interventions that concern job stress and burnout. This review is an attempt to steer future research on burnout along the lines suggested earlier to make future preventive interventions more effective.

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