

THE INDIVIDUAL AND ORGANIZATIONAL CONSEQUENCES OF STRESS, ANXIETY, AND DEPRESSION IN THE WORKPLACE: A CASE STUDY

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ABSTRACT

This study examines the business case for well-being interventions in the workplace by examining the individual and organizational outcomes of stress, anxiety, and depression. A case study of 2,507 employees from a financial services firm provided data to examine the firm-specific relations between psychological distress and outcome variables. Canonical correlation analyses found that burnout, negative productivity, life satisfaction (-), and physical health (-) were all related to stress, anxiety, and depression. More specifically, stress and depression showed the strongest positive associations with burnout and negative productivity. The results suggest that a strong business case can be made for trying to alleviate psychological problems in the workplace by focusing attention on the costs associated with burnout and reduced productivity. We argue that tailored business-case rationales are needed at the firm level in order to advance meaningful and sustained intervention strategies.

Work is a central and defining characteristic of our daily lives. The amount of time and energy we spend at work represents a significant component of our day. In a recent study of employees from all sectors of the economy, Higgins and Duxbury (2002) found that while the average Canadian works 42.2 hours per week, 25% of respondents worked more than 50 hours, 15% worked between 45 and 49 hours, and 31% worked between 40 and 44 hours. Work provides us with the means to sustain ourselves, and may engender feelings of self-worth, usefulness, and belonging. In fact, authors have long written about the benefits of work to human well-being, including the positive role that work plays in our sense of identity and self-esteem (Quick, Murphy, & Hurrell, 1992).

Just as work plays an undeniable role in our well-being, it can also play a critical role in mental disorder (Neff, 1985). Recent research evidence suggests that psychological disorders in the workplace are a growing problem—a problem first reported in 1992 as among the top 10 work-related diseases and injuries in the United States (National Institute for Occupational Safety and Health, 1992). The

work environment may be directly contributing to psychological illness due to the increased number of hours worked, the accelerated pace of work, technological change, reduced job security, and growing conflicts between work and family (Cooper, 1999). Indeed, health (or its absence) has become a major organizational issue with increasing rates of sick leave, particularly for rather vague mental and stress-related disorders (Arneson & Ekberg, 2005; Nystuen, Hagen, & Herrin, 2001).

The workplace can be considered a rich setting for the collection of data on occupational health and illness. As Snow and Kline (1995) stated,

The workplace represents a critical social setting due to its centrality and pervasive influence on the lives of adults. It is therefore an excellent laboratory for conducting stress related research. It provides access to a substantial portion of the adult population ranging from those at risk but asymptomatic to those showing signs of symptomatology to those in need of treatment. (p. 222)

While there is ample evidence of the human and economic costs at a macro (or societal) level (cf. Baba, Jamal, & Tourigny, 1998), a relative paucity of attention has been paid to collecting organization-specific data in order to create specific business cases for intervention and positive change. Similarly, Sparks and Cooper (1999) call for situation-specific variables in order to tailor workplace health promotion interventions. The organizational literature has demonstrated that without specific bottom-line performance indicators, firms are reluctant to take concrete action (see Keyes, 2005). This paper sets out to examine the individual and organizational consequences of stress, anxiety, and depression in a large Canadian financial institution. In addition, by combining the organizational and psychological literatures, it is hoped that a more comprehensive understanding of the interactive effects between individual and organizational variables will emerge with respect to employee mental health. Health in the workplace is increasingly seen less as a state and more as a dynamic ever-changing product of transactions between individuals and their social and physical environments (Noblet, 2003; Perez & Wilkerson, 1998).

This study examines mental health indicators (stress, anxiety, and depression) in relation to a set of individual and organizational outcome variables in a situation-specific setting. In the past, there has been reluctance on the part of organizational researchers to study employee mental health/illness partly, as noted by Kinicki, McKee, and Wade (1996), because of a widely held belief that mental health issues are caused primarily by physical rather than social or psychological events. Over the past two decades there has been an evolution in the thinking related to health and illness, and a growing recognition that the etiology of poor mental health is multifactorial (Baker & Green, 1991), and that working life can have an important impact on the health and well-being of employees (Baker & Green, 1991; Cooper & Cartwright, 1994).

Canadians have played a leading role in workplace mental health with the Lalonde Report (Health Canada, 1974), the Epp Report (Health Canada, 1986), and the Ottawa Charter (WHO, 1987; see McGillivray, 2002). The Epp Report first considered the importance of the environment in the broadest sense, and its impact on health, recognizing the practical advantages of the “settings approach” (see Noblet, 2003). Various settings were central to the Ottawa Charter, which aimed to promote health “where people learn, work and play” (WHO, 1987, p. ii). The Ottawa Charter also stimulated the

ideological debate around a balanced view of personal responsibility for health and the role of supportive environments in determining health inequalities (McGillivray, 2002). However, since the Ottawa Charter, Canadian health policy efforts have arguably dwindled on the world stage.

Some authors have suggested that there is “an awakening of how illiterate we really are in the recognition of mental illness as a powerful deterrent to sustainable business and economic performance, and conversely what a major asset healthy mental states are in the work and marketplace” (Perez & Wilkerson, 1998, p. 210). In perhaps the most comprehensive Canadian study of the costs associated with psychological problems, Perez and Wilkerson found that depression alone costs Canadian employers at least \$6 billion a year in sick pay and lost productivity. In their study, they reported that 14% of worker absenteeism in 1997 could be attributed to mental illness. In addition, 26% of respondents had taken time off work for mental or emotional problems, compared with 20% who were absent due to physical illness or injury. Furthermore, psychiatric disorders represented 22% of all workdays lost in the developed countries of the world (Perez & Wilkerson).

In the past 15 years, research has revealed that the costs associated with occupational ill-health are staggering. Noblet (2003) has advocated building healthier and less stressful work environments. Goetzel, Hawkins, Ozminkowski, and Wang (2003) examined the health and productivity costs of six large U.S. employers. The authors included medical costs, prescription drug costs, absence, and disability and concluded that “productivity-related losses play an important role when estimating the cost burden for certain physical and mental health conditions common among employees” (Goetzel et al., 2003, p. 12). The authors found that mental health conditions cost six large U.S. firms an average of \$179 per year, per eligible employee. Worker depression topped the list and led Goetzel, Ozminkowski, Sederer, and Mark (2002, p. 320) to state that “worker depression may have its greatest impact on productivity losses, including increased absenteeism and short-term disability, high turnover and sub-optimal performance at work.” These powerful statistics and trends suggest that it is in a company’s long-term self-interest to examine and rectify mental health problems at work.

Other research suggests that employers, also in their long-term self-interest, would be ill-advised to ignore the costs and lawsuits associated with psychological disability. Perez and Wilkerson (1998), for example, reason that it is well within an employer’s grasp to keep a lid on disability claims: “Management practices can reduce mental disability or induce it. The definition of a healthy work environment in the post-deficit era means more than the absence of physical safety hazards” (p. 306). Other researchers have shown that employers are increasingly being held liable by the courts for stress in the workplace in both the United States and Canada (Thomas & Ganster, 1995). For example, Allen (1990) reported that workers’ compensation claims concerning psychologically related disorders were being increasingly honoured in the U.S. court system. In other words, while ethical arguments have existed for some time that corporations have a social responsibility to take action to alleviate the psychological problems that they may contribute to creating, there is now strong empirical evidence to suggest that ignoring mental health issues in the workplace may have a dramatically negative influence on an organization’s bottom line. This research furthers this line of reasoning by examining the consequences of stress, anxiety, and depression in a particular work setting on individual and organizational outcomes.

RESEARCH OBJECTIVES

This study aims to identify the individual and organizational consequences associated with high levels of stress, anxiety, and depression in the workplace. While some degree of stress, anxiety, and depression is an expected part of everyday life, sustained periods of high stress, anxiety, and depression can result in serious personal and organizational consequences (Mikkelsen, Saksvik, Eriksen, & Ursin, 1999; Perez & Wilkerson, 1998). Psychological studies of the human consequences associated with stress, anxiety, and depression have left little doubt of the profound personal impacts of these conditions (see Beehr & Newman, 1978; Bourne, 1990; McGrath, Keita, Strickland, & Russo, 1990; Smith & Siwolop, 1988), and while health is commonly considered to be a resource that supports productivity in organizations (Arneson & Ekberg, 2005), organizational research into the effects of mental illness on specific facets of productivity and performance is comparatively sparse. This study was designed to help fill this gap by providing quantitative information linking employee mental health to organizational outcomes.

The individual consequences associated with stress, anxiety, and depression have received far greater research attention than either the organizational or social costs. Perhaps this is logical, for the personal costs are usually much easier to detect and measure (Warr, 1990). The individual consequences examined in this research include life satisfaction, job satisfaction, physical health, and burnout.

In addition to individual consequences, poor mental health may also lead directly to organizational consequences. For example, research has existed for some time that links high levels of stress to lower levels of job performance (see Friend, 1982; Jones et al., 1988; Spector, Dwyer, & Jex, 1988). Of utmost importance to organizations should be the finding that stress and other psychological disorders may have a direct bearing on the bottom line. Stress, anxiety, and depression have been linked to low work morale, high job turnover, interpersonal conflicts, and reduced productivity (Baba, Jamal, & Tourigny, 1998; Jones, 1980; Keyes, 2005; Maslach, 1976).

The exact dollar costs of psychological problems to employers remains elusive, primarily due to the tenuous nature of drawing causal links between psychological variables and organizational measures of performance. The costs of psychological ill-health can be measured directly in terms of employee health insurance, but only indirectly in terms of turnover, absenteeism, and reduced quality and quantity of production (Kuhnert & Vance, 1992).

This study explored the associations between stress, anxiety, and depression and three specific organizational outcomes: productivity, organizational commitment, and absenteeism.

METHOD

Sample

The sample for our study was derived from a large financial service organization with a workforce of approximately 44,000 employees across Canada. The survey was randomly distributed to 10% of the entire workforce. All levels and geographic regions of the company were included in the sample. Of the 4,400 surveys sent out to potential respondents, 2,507 were returned and useable, for a response rate of 57%.

The sample consisted of 622 males and 1,858 females, while 27 persons did not report their gender. The mean age of respondents was 39.6 years, and their average tenure with the firm was 13.9 years. The average number of children per employee was 1.4, and the majority of respondents, both male (64.5%) and female (68.9%), were parents. No significant gender differences emerged (controlling for job type) with respect to the number of children, the age of the children, or parental status.

Measures

We selected well-established measures from both the psychological and organizational literatures. Stress was measured using Cohen, Kamarck, and Mermelstein's (1983) Perceived Stress Scale (PSS). The PSS scale that was used is a 9-item measure that requires respondents to indicate the frequency within the last 3 months that they have experienced different feelings of distress using a 5-point Likert scale. The PSS was designed to measure perceived levels of global stress and includes questions concerning the extent to which one's life situation has been unpredictable, uncontrollable, and burdensome (Cohen et al., 1983). Cohen et al. reported Cronbach alpha coefficients ranging from 0.84 to 0.86, indicating a relatively high level of internal consistency. This study obtained a Cronbach alpha of 0.84 for the PSS.

Anxiety was measured using an 8-item symptom scale, previously employed by Heaney, Price, and Rafferty (1995). The SCL-90 measure of anxiety was designed to measure how often respondents report specific physical symptoms over a 3-month period. Heaney et al. reported Cronbach coefficients for this measure ranging from 0.71 to 0.77. This study obtained a Cronbach alpha of .82.

Depression was measured using the Depressed Mood Scale (DMS), which is a subscale of the Health and Daily Living Form (see Moos, Cronkite, Billings, & Finney, 1988). The DMS is a 6-item scale that requires respondents to indicate the frequency within the last 3 months that they have experienced various symptoms associated with clinical depression. Moos et al. reported Cronbach alpha coefficients ranging from 0.67 to 0.69 for this scale. This study obtained a Cronbach alpha of 0.83 for the DMS.

Life satisfaction, job satisfaction, physical health, and burnout measures were used to assess the individual consequences of stress, anxiety, and depression. Overall satisfaction with life was measured using the 5-item Satisfaction with Life Scale (SWLS; Diener, Emmons, Larsen, & Griffin, 1985). Diener et al. factor analysed their scale to confirm its unidimensional nature, and reported Cronbach alpha coefficients of 0.87. This study also obtained a Cronbach alpha of 0.87 for the SWLS.

Job satisfaction is the degree to which employees have a positive affective orientation toward their job and work environment (Quinn & Shepard, 1974). Job satisfaction can be measured either globally (with measures referring to general levels of satisfaction) or dimensionally (with measures referring to satisfaction with specific facets of the job and work environment). This study adopted the facet-specific measure of job satisfaction developed by Quinn and Shepard. Respondents were asked to indicate how satisfied they were with their job, pay, work hours, work schedule, and work tasks using a 5-point Likert scale (where 1 = *very dissatisfied*, and 5 = *very satisfied*). Quinn and Shepard reported a Cronbach alpha coefficient of 0.84 for their job satisfaction scale. This study obtained a Cronbach alpha of 0.80.

The two single-item questions used in this study to measure physical health were drawn from the Health and Daily Living Form (Moos et al., 1988). The first question asked respondents on a 5-point Likert scale how they would rate their physical health over the last 3 months. The second question asked respondents how many days they were unable to work or carry out their usual work activities because of health problems.

Burnout was measured by a 6-item scale based on the work of Maslach and Jackson (1986). This study obtained a Cronbach alpha of 0.90 for our shortened version of the Burnout Inventory.

The organizational outcomes were examined through respondent self-reports of productivity, organizational commitment, and absenteeism. Perceptions of productivity were measured using Pierce, Newstrom, Dunham, and Barber's (1989) 9-item measure. This measure contains two subscales, which separately assess positive and negative productivity. Positive productivity can be defined as the degree to which an employee is energized, motivated, and eager to achieve organizational goals. Negative productivity, on the other hand, refers to the extent to which internal or external stresses and strains negatively impact upon the attainment of organizational goals. Pierce et al.'s measure was designed to determine the extent to which organizational factors were perceived (by the employee) to have negatively or positively affected their daily productivity. The items are measured using a 5-point Likert scale that asks respondents how often during the last 3 months various occurrences had affected their productivity. An example question, of positive productivity, asks, "Did you feel encouraged to come up with new/better ways of doing things?" An example question, of negative productivity, asks, "Did the stresses and strains from working long hours reduce your productivity?" The scales allow respondents to provide answers ranging from *never* to *more than once a day*. This study obtained a Cronbach alpha of 0.66 for positive productivity and 0.68 for negative productivity.

Commitment to the organization was measured using Mowday, Steers, and Porter's (1979) 9-item scale. Commitment refers to the loyalty an individual has to the organization and to his or her job. Mowday et al. indicated that work commitment was characterized by three factors: acceptance of the organization's values, willingness to exert effort on behalf of the organization, and a strong desire to remain an employee of the organization. Cronbach alpha coefficients reported in the literature have ranged from 0.82 to 0.93 with a median of 0.90 (Mowday et al.). This study obtained a Cronbach alpha of 0.87 for Mowday et al.'s measure of organizational commitment.

Absenteeism was operationalized using a measure developed by Duxbury, Higgins, Lee, and Mills (1991). This measure assesses the number of days in the past 3 months that the respondent was absent from work due to poor physical health, family-related needs, self-related needs (absence due to emotional or mental fatigue), and absences without any reason other than the respondent "didn't feel like going to work that day." The sum of these items allowed us to determine the total number of absent days in a 3-month period, as well as the days absent due to each of the above causes.

Data Analyses

The primary objective of this study involves examining the associations between psychological distress and individual and organizational outcomes. It should be noted that the canonical variates

(stress, anxiety, and depression) were operationalized as independent variables for canonical analyses while the dependent variables consisted of life satisfaction, job satisfaction, physical health, burnout, positive productivity, negative productivity, organizational commitment, and absenteeism. The dependent variables are referred to as outcomes in the study as the canonical multivariate analyses results in a reliable pair of canonical variates (i.e., a pair associated with psychological distress and typical outcome measures). While the results of the canonical analyses do not suggest causality, they do form patterns of association between groups of variables similar to multiple regression (Tabachnick & Fidell, 1989).

Canonical correlation analysis was used to determine the nature and number of relationships between stress, anxiety, depression, and outcome variables. Canonical correlations were performed to simultaneously assess the relative strength of the relationships between stress, anxiety, depression, and outcome variables. Canonical correlation analysis is considered to be an appropriate statistical technique “if the wish (of the researcher) is to parsimoniously describe the number and nature of mutually independent relationships existing between the two sets (of variables)” (Stevens, 1996, p. 429).

To interpret the canonical variates there are two available devices: (a) standardized coefficients, and (b) canonical variate-variable correlations. It should be noted that these interpretation methods are considered quite unreliable unless the n /total number of variables ratio is very large, at least 42:1 (Stevens, 1996). However, this was not an issue in our study as our canonical correlation tests involved 11 variables. With a sample size of 2,507, even the most conservative estimates for reliability were met.

We used standardized ratio coefficients as an additional means of determining variable importance and interpreting the results of the canonical procedures (see Thomas & Zumbo, 1996). Standardized ratio coefficients are obtained by multiplying the standardized coefficient with the degree of correlation. These standardized ratio coefficients provide a numeric weighting of each variable that allows for an assessment of that variable's relative importance to the canonical variate (linear combination) in question.

RESULTS

All of the study's 11 variables were first examined using bivariate correlations. The correlation matrix of the study's variables is provided in Table 1. The correlation matrix revealed strong correlations between stress, anxiety, and depression. With respect to the relationship between stress, anxiety, and depression and the outcome variables, life satisfaction, job satisfaction, burnout, and negative productivity all had moderate to strong correlation (ranging from $r = .35$ to $r = .60$, $p < .01$). With respect to relations among outcome variables, burnout was negatively related to job satisfaction ($r = -.50$, $p < .01$) and physical health ($r = -.41$, $p < .01$), and positively correlated with negative productivity ($r = .60$, $p < .01$). In addition, job satisfaction was positively correlated with organizational commitment ($r = .54$, $p < .01$), and negatively correlated with negative productivity ($r = .42$, $p < .01$). These bivariate correlations, while limited in their explanatory power, proved useful in conjunction with the more sophisticated canonical correlation analysis. That is, the bivariate correlations give us some indication

Table 1
Correlation and Cronbach Alpha Coefficients for Study Variables

	1	2	3	4	5	6	7	8	9	10	11
1. Stress	(.84)										
2. Anxiety	.56	(.82)									
3. Depression	.73	.63	(.83)								
4. Life satisfaction	-.50	-.35	-.48	(.87)							
5. Job satisfaction	-.41	-.30	-.35	.40	(.80)						
6. Physical health	-.44	-.47	-.46	.34	.27	(n/a)					
7. Burnout	.60	.54	.57	-.32	-.50	-.41	(.90)				
8. Positive productivity	-.17	-.10	-.16	.16	.23	.13	-.15	(.66)			
9. Negative productivity	.43	.35	.36	-.22	-.42	-.28	.60	.07	(.68)		
10. Organizational commitment	-.31	-.18	-.27	.32	.54	.21	-.34	.30	-.23	(.87)	
11. Absenteeism	.17	.19	.17	-.11	-.10	-.26	.15	-.10	.09	-.12	(n/a)

Note. Cronbach alpha coefficients are listed along the diagonal. Correlations statistically significant ($p < .01$).

of the relationship between variables, but the canonical correlations build on this knowledge by simultaneously assessing the relationship between stress, anxiety, and depression and the study's eight outcome variables.

The primary objective of the study was to determine the individual and organizational consequences associated with high levels of stress, anxiety, and depression. Canonical correlation analysis was performed to determine the number and nature of the relationships between stress, anxiety, and depression and outcome variables. Eleven variables (eight outcome and three psychological distress variables) were included in the canonical correlation analysis, the results of which are shown in Table 2.

The data in Table 2 allowed for the assessment of relative variable importance (this was the only set of canonical variates statistically significant at the 95% confidence level). Burnout emerged as the most prominent outcome variable with a very strong canonical variate correlation and standardized coefficient. The standardized ratio coefficient for burnout accounted for one third of relative variable importance (0.336). The second most important variable to emerge from the analysis was negative productivity, which also had strong canonical variate correlation and standardized coefficient scores (resulting in a standardized ratio coefficient of 0.262). Other variables worthy of note included life satisfaction (with a standardized ratio coefficient of 0.138, and physical health (with a standardized ratio coefficient of 0.136).

The psychological distress variables of stress, anxiety, and depression also emerged from the analysis with high canonical variate correlations and standardized coefficients. Depression, stress, and anxiety all made major contributions to their canonical variate (with standardized ratio coefficients of 0.370, 0.349, and 0.281, respectively).

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Table 2
Canonical Correlation Results for Outcome Variables

Variable	SC	CVC	SRC	Rank
<i>Outcomes</i>				
Life satisfaction	-.352**	-.392**	.138	3
Job satisfaction	-.144*	-.236**	.034	
Physical health	-.344**	-.408**	.136	4
Burnout	.598**	.562**	.336	1
Positive productivity	-.118*	-.127*	.015	
Negative productivity	.564**	.464**	.262	2
Organizational commitment	-.121*	-.223**	.027	
Absenteeism	.225**	.286**	.064	
<i>Psychological distress</i>				
Stress	.780**	.447**	.349	2
Anxiety	.686**	.410**	.281	3
Depression	.785**	.471**	.370	1

Note. SC = Standardized Coefficient; CVC = Canonical Variate Correlation; SRC = Standardized Ratio Coefficient.
 * $p < .05$. ** $p < .01$.

In conjunction, the canonical correlation results suggest that depression and stress (and to a lesser extent anxiety) are strongly associated with burnout and negative productivity. To a lesser (but still statistically significant) extent, the three forms of psychological distress were also negatively related to life satisfaction and physical health.

DISCUSSION

Stress, anxiety, and depression all emerged as strongly associated with the outcome variables of burnout and negative productivity and, to a lesser extent, with life satisfaction and physical health. Burnout and negative productivity emerged from the canonical correlation analysis as the key outcome variables. Of course, these two variables are themselves highly correlated ($r = .60$, $p < .01$). These findings expand upon the work of Maslach and Jackson (1986), who found that sustained levels of stress could be linked to burnout, by additionally showing that anxiety and depression are also associated with burnout. The findings of this study suggest that employees suffering from higher levels of stress, anxiety, and depression are susceptible to “burning out.” When individuals are grappling with psychological problems, their effort expenditure will decrease as they are forced to expend energy on the emotional state (Abramson, Alloy, & Metalsky, 1989). If conditions do not improve, there is only a finite amount of stress, anxiety, or depression an individual can tolerate before being overwhelmed by his or her situation (Perez & Wilkerson, 1998). Having said this, it is important to note that our

results cannot infer the temporal sequence involved with psychological distress and burnout. That is, the intricate processes involved in why someone burns out, and the psychological aftermath of burnout, are beyond the bounds of the current study. However, having such strong canonical variates associated with burnout emphasizes the toll that mental problems can have on both individuals and organizations, as burnout not only has profound effects on the individual's well-being, but also on the organization's bottom line (Maslach & Jackson, 1986).

While Kinicki et al. (1996) argue that burnout and job satisfaction have been studied to the relative exclusion of all other outcome variables, this study found strong support for the continued inclusion of burnout in studies of occupational health. Job satisfaction, by contrast, was not found to be an important outcome variable relative to the other outcomes in the study (as evidenced by its weak standardized ratio coefficient in the canonical correlation analysis).

This study also found support for the argument that stress, anxiety, and depression are negatively related to productivity (cf. Goetzel et al., 2003). Both the canonical correlation and bivariate results suggest that all three forms of psychological distress are related to negative productivity. When individuals are grappling with elevated symptoms of stress, anxiety, or depression, their effort expenditure may be reduced as they are forced to expend energy on the emotional state itself (Abramson et al., 1989; Baba et al., 1998; Goetzel et al., 2002).

Stress, however, should not always be considered a negative affect state. This line of reasoning is based on the concept of eustress (or good stress) which "produces a state of challenge coupled with disruptive pleasure" (Bhagat, McQuaid, Lindholm, & Segovis, 1985, p. 203). Some degree of stress acts to keep people motivated, unlike anxiety and depression, which have few, if any, redeeming characteristics (Quick et al., 1992). This line of argumentation is supported by the earlier works of Kahn (1983) who found that the amount of stress experienced by workers is U-shaped, suggesting that too few work demands, for example, may be as stressful as too many.

CONCLUSION

In terms of outcomes, stress, anxiety, and depression were all found to be strongly associated with burnout. This finding has strong implications for both employees and employers, as burnout is known to have profound effects on employee well-being and on an organization's bottom line (Maslach & Jackson, 1986).

In addition, anxiety and depression were found to be negatively related to productivity. This finding suggests that individuals suffering from anxiety and depression must expend energy on dealing with their emotional problems—energy that reduces their productivity. Such a finding also has important ramifications for employers, whose bottom line will be reduced by decreased productivity.

Linking psychological problems to the organization's bottom-line performance may be a necessary precondition to organizational action. Future studies should attempt to replicate and further explore the bottom-line ramifications of stress, anxiety, and depression. The burnout of employees is a cost most employers cannot afford, especially in times of skill shortages (see Murphy, 2000). In addition, in an increasingly global marketplace, organizations cannot afford to be negatively affected by

reduced productivity from employees grappling with psychological problems that were, at least in part, brought on by workplace antecedents.

The desire to reduce the ill-effects of stress is certainly nothing new for managers. As Perez and Wilkerson (1998) discussed, the question for managers is no longer if they should address stress (and by extension mental health), but how?

In 1987, Donovan reported that private industry had spent millions of dollars to develop work stress-management programs for workers designed to reduce psychological problems. His conclusions, from almost two decades ago, emphasized that stress-management programs were not effective in moderating psychological problems or helping the business case for employees with psychological problems. Effective organizational intervention in psychological problems involves helping employees deal with psychological strain early on (or preventing psychological strain from escalating). Perez and Wilkerson (1998) write,

It is becoming obvious that mental illness is a business issue and that mental health is a business asset. We must learn to talk about it in practical, constructive ways. Fundamentally, non-medical health strategies are best united around economic and social change where human health is seen as the principal human capital base currency underwriting the company. (p. 314)

Such a shift may be slow in coming. However, this study provides compelling evidence that psychological problems are related to burnout and negative productivity: two problem areas that can have crippling effects on an organization's bottom line. Still, a central challenge that lies ahead in dealing with psychological problems in the workplace is to address the issue as a long-term problem that underlies the productivity (and thus profitability) of the firm. Discussing the required shift in organizational thinking about productivity and profitability, Perez and Wilkerson (1998, p. 222) state, "The new agenda for management requires the measurement of productivity to be reordered in order to quantify the return on investment in employee health."

This study found that stress, anxiety, and depression have a direct effect on the bottom line of organizations, due to reduced productivity and the burnout of employees. Therefore, it is in the best interest of organizations to address the issue of mental health in the workplace and eliminate antiquated taboos.

Another benefit of the study is in addressing a very real need in our organizations and society. Changes in the workplace to reduce stress, anxiety, and depression are not only desirable but essential in a society that values the quality of life of its members, and the output and productiveness of its industries (Cooper & Cartwright, 1994; Noblet, 2003). This study concurs with other research which asserts that organizations, despite decentralization trends and the emergence of team structures, participative decision making, quality of life initiatives, total quality management initiatives, etc., may actually be in the process of creating more stressful, controlling, and mentally damaging work environments (e.g., Baba et al., 1998; Barker, 1993; Karasek & Theorell, 1990). Taken to the extreme, we may be getting close to the point where our work environments are "totally incompatible with human physiological capabilities" (Karasek & Theorell, 1990, p. 2). These words have taken on heightened meaning in recent years with new technologies continuing to blur the line between work and family.

High incidences of stress, anxiety, and depression have been reported in the literature (Goetzal et al., 2003; Jones & Boye, 1992; Kendall & Watson, 1989), and rapidly increasing incidences of occupational burnout (Goetzal et al., 2003; Maslach & Jackson, 1986; Perez & Wilkerson, 1998) bear witness to real and serious mental health problems.

Canonical correlation is a useful yet underutilized statistical procedure that has allowed for the simultaneous assessment of the relative strength of relations between stress, anxiety, and depression and a host of individual and organizational outcome variables. However, we are cognizant that our study is cross-sectional in nature, and that a strengthened "business case" could be provided by longitudinal research. We assert that issues of psychological well-being in the workplace will only be seriously (and continuously) addressed when the business case provides a clear and targeted path for intervention (see Noblet, 2003).

A central question for organizations and managers is how to create the environment where a state of eustress can exist and lead to healthy employee involvement and achievement while eliminating the psychological, emotional, and physiological distress that all too often typify the work environment (Quick et al., 1992). This question has gone unanswered, as there is a lack of published reports of work-site stress programs that explicitly recognize this delicate balance (for commentaries see DeFrank & Cooper, 1987; Heaney et al., 1995; Ivancevich, Matteson, Freedman, & Phillips, 1990). It is particularly puzzling to wonder why these questions have not been systematically addressed given the obvious applied value to organizations, in addition to the undeniable benefits for employees. Organizations may not be equipped with the tools nor the information to act on issues of mental health. In addition, organizations may perceive, to their peril, that the responsibility for the mental health of their employees lies outside their mandate. The findings of this study take a major step toward addressing these needs, by revealing the association between situation-specific variables (burnout and negative productivity) and psychological disorders on the bottom line in a large Canadian financial services firm. When firms are armed with such setting-specific information (Noblet, 2003; Sparks & Cooper, 1999), they are in a much better position to target intervention strategies toward reducing their major occupational health challenges.

RÉSUMÉ

Cette étude présente une analyse de rentabilisation des interventions de bien-être au travail en examinant le stress, l'anxiété et la dépression et leurs conséquences pour l'individu et l'organisation. Une étude de cas de 2 507 employés et employées d'une compagnie offrant des services financiers a fourni des données pour examiner les rapports au niveau organisationnel entre la détresse psychologique et divers résultats. Les analyses de corrélation canonique ont révélé que l'épuisement professionnel, la productivité négative, la satisfaction de vie (-) et la santé physique (-) étaient reliés au stress, à l'anxiété et à la dépression. Plus spécifiquement, le stress et la dépression ont démontré les associations positives les plus importantes avec l'épuisement professionnel et la productivité négative. En mettant en évidence les coûts liés à l'épuisement professionnel et à la productivité négative, l'analyse suggère que des interventions pour réduire les problèmes psychologiques pourraient devenir rentables. Nous maintenons qu'un exposé raisonné lié à la rentabilisation au niveau organisationnel est nécessaire afin d'avancer des stratégies d'intervention significatives et soutenues.

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