Relationships of Protective Factors to Stress and Symptoms of Illness

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***Objective*: To examine relationships of work and individual protective factors to health outcomes. *Methods*: Participants from 2 corporate samples completed measures of supervisor support, hardiness, coping, global stress, and symptoms of illness. *Results*: Regression analyses indicated that higher scores on hardiness and approach coping and being male predicted lower scores on stress and symptoms of illness. Additionally, supervisor support predicted fewer symptoms of illness but did not have a spillover effect onto stress. *Conclusions*: Interventions that enhance individual protective factors primarily and work protective factors secondarily may be most effective in reducing stress and illness among employees.**

***Key words*: hardiness, approach coping, supervisor support, stress, symptoms of illness**

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Psychological stress is associated with a variety of illnesses.[1] The importance of this association to business and industry is illustrated by studies in which stress emerged as one of the most costly risk factors in terms of health care expenditures and utilization.[2,3] Studies indicate that an investment in healthier workers and workplaces through the implementation of worksite health promotion and wellness programs results in higher productivity and earnings for the organization and large reductions in health care expenditures and utilization.[4-6] Thus, organizations would be well advised to understand ways to lessen the stress and illness experienced by their employees through the implementation of targeted worksite health and wellness programs.

The transactional model of stress and coping proposed by Lazarus and Folkman provides a framework in which to understand how certain factors may serve a protective function in the experience of stress.[7] The basic premise of this theory is that stressful experiences are construed as transactions between the environment and the individual. The environmental portion of this transaction consists of objective environmental events, or stressors, that result in significant adaptive demands requiring a response from the individual. The individual part of the transaction emphasizes the individual's appraisal of the potential threat posed by the stressor, as well as the availability of coping resources to meet the demands of the stressor. The experience of stress results if the individual appraises the environmental demands as threatening and feels he or she does not have the coping resources available to meet those demands. Therefore, factors that reduce perceived threat or in-

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crease perceived coping resources may protect individuals against stress.

Given the evidence supporting a causal relationship between stress and some illnesses, factors that protect against the experience of stress may also protect against the experience of illness. Identifying specific protective factors that reduce the experience of stress and illness would inform organizations of potential target areas for health promotion efforts directed at lessening the experience of stress and illness in their employees. Therefore, it may be useful to more closely examine protective factors within the work environment and the individual that may reduce the experience of stress and illness.

Work Environment Protective Factor

There has been a growing recognition of the interdependence of aspects of both the work environment and one's personal life. Typically, research in this area has focused on the negative impact one's work environment can have on the quality of one's personal life, explained by spillover theory as the extent to which involvement in one life domain influences involvement in another.[8] For instance, adverse work conditions such as job stress can have a negative spillover effect on aspects of one's personal life, such as poor physical and mental health.[9,10] However, it is also possible that work settings provide unique protective resources that may have a beneficial spillover effect on aspects of one's personal life.[11] For example, supervisor support at work may have a positive spillover effect on one's life satisfaction.

Supervisor support. Because supervisors have the responsibility for directing and evaluating employees' performance, supervisor support is one of the most commonly cited variables assessing perceptions of support in the work environment.[12] The support a supervisor provides to his or her subordinates has been related to perceptions of a healthier work environment[13] and less work-related stress[14,15] and emotional exhaustion.[16] The spillover effect of supervisor support onto global stress (overall stress from a variety of domains, rather than from one particular domain such as work) has not been empirically tested; however, supervisor support has been shown to ease physical symptoms such as low back pain and blood pressure,[17,18] as well as psychological symptoms such as depression.[19]

Individual Protective Factors

Although the association between stress and illness has been documented, not everyone exposed to potentially stressful situations becomes stressed or ill.[1] Such findings have led researchers to examine not only the environmental conditions that result in stress, but also the psychological meaning of the event to the individual. This psychological perspective of stress emphasizes the necessity of examining the individual's disposition. Research has shown that the dispositional characteristics of hardiness and coping style may have an influence on an individual's experience of stress and illness.

Hardiness. Hardiness is a constellation of personality characteristics that serves as a resistance resource when encountering stressful situations. Three basic elements comprise hardiness: *challenge,* which is the perception of change as normal and natural, as well as an opportunity for personal growth; *commitment,* which is a sense of purpose or meaningfulness in one's life and a strong involvement in directing one's life course; and *control,* which is the belief that one is capable of impacting one's life circumstances.[20]

Although hardy individuals are not subject to fewer or less severe stressful events than their nonhardy counterparts, hardy individuals experience more positive, effective outcomes due to their appraisals of stressful incidents. Previous research suggests that hardiness positively influences perceptions of global stress and stressful life events.[21-23] In addition, hardiness has a beneficial relationship to self-ratings of physical health and physical symptoms,[21,23] as well as to depression and anxiety.[24]

Coping style. Dispositional coping style refers to an individual's preferred behavioral and cognitive responses to stressful situations that remain stable across time and circumstances.[25] Researchers make a common conceptual distinction regarding the focus of coping styles. An *approach* coping style is aimed at problem solving or active attempts to resolve the stressor, whereas an *avoidant* coping style is aimed at avoiding active confrontation of the stressor or reducing emotional tension

associated with the stressor. Although their focus is different, both approach and avoidance coping styles use cognitive and behavioral methods, and have been likened to task or problem-focused and escapism or emotion-focused coping, respectively.[24,25]

Coping styles that fall under the avoidance-oriented domain tend to be viewed as maladaptive because of their association with greater stress,[23] and worse physical[23,24,26] and mental health.[24,27-29] In contrast, approach-oriented coping styles tend to be viewed as adaptive because of their relationship with less stress and better physical and mental health. For instance, approach-oriented coping styles have been associated with less global stress,[23] and beneficially related to physical health indicators such as illness time loss,[26] as well as indicators of mental health such as anxiety, depression, and psychological distress.[24,27-29] This empirical support reinforces an approach coping style as a protective factor with respect to stress and illness.

The Present Study

Using the transactional model of stress and coping as a framework, this study sought to examine the protective nature of workplace social support and individual disposition in the experience of stress and illness. Specifically, this study examined the relationship of protective factors of supervisor support, hardiness and approach coping to global stress and symptoms of illness in employees at 2 Fortune 500 corporate organizations. Of particular importance was testing a protective spillover effect of workplace supervisor support to a measure of global stress. Demonstrating that these protective factors are inversely related to global stress and symptoms of illness would provide a rationale for the investment of resources for health promotion programs that strive to enhance such factors.

METHODS

Participants

Two convenience samples of participants were recruited from the worksites of 2 Fortune 500 corporations through the efforts of health promotion program staff members. Participants in the first convenience sample were full-time employees from 2 subdivisions within Motorola in Austin, Texas (N=398). Employees were recruited to participate during their regularly scheduled group meetings, resulting in an 86% response rate. Employees were told that the survey results would be used to develop health promotion programs at their worksite. The sample included 64.3% males and 35.7% females with a mean age of 32.6 (± 8.4) years, and consisted of 71.5% Anglo, 15.1% Hispanic, 6.3% African American, 5.0% Asian, and 2.0% other. The average length of employment at Motorola was 5.2 (± 5.2) years. Salary and education information was based on minimum education requirements and annual salary ranges typical of the specific job functions of these employees. Overall, 22.6% of the Motorola participants had an annual salary of $18,000-$35,000 and a minimum of a high school education, 51.9% had an annual salary of $35,000-$55,000 and a minimum of a Bachelor's degree, and 25.4% had an annual salary of $55,000-$85,000 and a minimum of a Master's degree.

Participants in the second convenience sample were full-time employees of 3M in Austin, Texas (N=110). Members of 3M's employee wellness program were recruited to participate via e-mails from the wellness program staff. 3M has approximately 1,900 employees located in Austin, 1,200 of which are members of the wellness program, resulting in a 9.2% response rate. The low response rate at 3M was likely due to the less direct recruiting strategy. This sample included 63.6% females and 36.4% males with a mean age of 42.5 (± 8.6) years and consisted of 80.7% Anglo, 11.0% Hispanic, 2.8% African American, 3.7% Asian, and 1.8% other. The average length of employment at 3M was 12.5 (± 9.0) years. As with Motorola, salary and education information was based on minimum education requirements and annual salary ranges typical of specific job functions. Overall, 50.5% of the 3M participants had an annual salary of $18,000-$35,000 and a minimum of a high school education, 31.6% had an annual salary of $35,000-$55,000 and a minimum of a Bachelor's degree, and 17.9% had an annual salary of $55,000-$85,000 and a minimum of a Master's degree.

Although the 2 samples did not significantly differ on any of the study independent or dependent variables, there were several significant differences in their demographic makeup. The 3M partici-

pants were older on average [$t(500) = 10.7$, $P<.001$] and had worked for the company longer [$t(505) = 10.8$, $P<.001$] than the Motorola participants. The majority of the 3M participants were female, whereas the majority of Motorola participants were male [$\chi^2(1, N=508) = 27.7$, $P<.001$]. A greater percentage of 3M participants had salaries that ranged from $18,000-$35,000 (and a minimum education of a high school diploma), compared to the greater percentage of Motorola participants having salaries ranging from $35,000-$55,000 (and a minimum education of a Bachelor's degree) [$\chi^2(2, N=488) = 29.6$, $P<.001$].

Procedures

The study involved a cross-sectional research design using survey data. Participants in both samples completed the questionnaire in small groups in quiet classroom conditions at their respective worksites. The questionnaire took approximately 30 minutes to complete. Study procedures were approved by the University of Texas at Austin Institutional Review Board, and data were collected and recorded so as to protect the anonymity of participants. All participants in both samples were assured that their decision regarding whether or not to participate would have no effect on their relationship with their employer or the University. Participants were also assured that their individual responses were confidential and that their employer would only receive the study results in aggregate format.

Instruments

Supervisor support. (For information regarding the surveys used in this study e-mail msteinhardt@mail.utexas.edu). Employees' perceptions of the extent to which supervisors are supportive was measured using a modified version of the 9-item subscale of supervisor support from the Work Environment Scale (WES).[30] Respondents were asked to indicate which of the items were true/mostly true of their work environment and which were false/mostly false of their work environment. Sample items include: "Supervisors really stand up for their people," and "Supervisors usually compliment an employee who does something well." In the initial psychometric study of the WES, the internal consistency for the supervisor support subscale with both health care workers and teachers was $\alpha=.77$.[30] In this study, it was necessary to drop 4 items from the subscale in order to increase the internal consistency of the subscale to above .70 for both the Motorola ($\alpha=.73$) and 3M ($\alpha=.71$) samples. When calculating the Cronbach's alpha of the subscale, items whose deletion would improve the alpha were dropped in a sequential fashion until the alpha could not be improved further. The 4 items that were dropped included: "Supervisors tend to discourage criticisms from employees," "Employees generally feel free to ask for a raise," "Supervisors expect far too much from employees," and "Employees discuss their personal problems with supervisors." The poor performance of the final item was not entirely unexpected as supervisors at both companies are encouraged to refer employees to the onsite Employee Assistance Program rather than discuss personal problems with employees.

Hardiness. The 30-item Dispositional Resilience Scale (DRS) was selected as a measure of hardiness because it assesses the presence of each of the 3 tendencies of challenge, commitment, and control.[31] Participants were asked to indicate the extent to which statements on the DRS were true in general on a 4-point Likert scale ranging from *not at all true* (0) to *completely true* (3). Sample items include: "Changes in routine are interesting to me," "By working hard you can always achieve your goals," and "When I make plans, I'm certain I can make them work". The DRS was internally consistent in the Motorola ($\alpha=.77$) and 3M ($\alpha=.81$) samples.

Percentage approach coping. Coping style was assessed using the dispositional version of the Coping Orientations to Problems Experienced (COPE) scale, which measures a broad range of cognitive and behavioral coping strategies that individuals typically use in stressful life situations.[25] Respondents were instructed to respond to items that reflect various coping strategies on a 4-point Likert scale ranging from *I usually don't do this at all* (1) to *I usually do this a lot* (4).

Approach coping was defined as cognitive and behavioral strategies aimed at reducing the source of stress. Three 4-item subscales were combined to assess approach coping: active coping, planning, and positive reinterpretation and growth. Active coping measures attempts to take action to deal directly with the problem

(eg, "I take direct action to get around the problem"). Planning assesses attempts to come up with action strategies (eg, "I think hard about what steps to take"). Positive reinterpretation and growth measures attempts to construe the problem in positive terms while accepting the reality of the situation (eg, "I try to grow as a person as a result of the experience"). Although some researchers regard this type of coping as emotion-focused,[7] others classify it as an approach coping strategy whose value exceeds merely reducing distress.[25] The composite of approach coping consisted of summing the 3 subscales together, and was internally consistent in the Motorola (α=.86) and 3M (α=.88) samples.

Avoidance coping was defined as cognitive and behavioral strategies aimed at avoiding active confrontation of the stressor. Three 4-item subscales were combined to assess avoidance coping strategies: denial, behavioral disengagement, and mental disengagement. Denial measures attempts to refuse to believe that the problem exists (eg, "I pretend that it hasn't really happened"). Behavioral disengagement assesses attempts to reduce one's effort to deal with the problem (eg, "I just give up trying to reach my goal"). Mental disengagement measures attempts to distract the person from thinking about the problem (eg, "I turn to work or other substitute activities to take my mind off things"). The composite of avoidance coping consisted of summing the 3 subscales together, and was found to be internally consistent in the Motorola (α=.80) and 3M (α=.81) samples.

Due to research that has demonstrated conceptual and predictive advantages of relative versus absolute coping scores,[32-34] this study focused on a percentage approach coping measure. Percentage approach coping was computed by dividing approach coping by the sum of approach and avoidance coping.[32,34]

Global stress. Global stress was defined as the degree to which situations in one's life during the past month were perceived as stressful, as measured by the 14-item Perceived Stress Scale (PSS).[35] It is important to note that the PSS is considered a "global" measure of perceived stress, meaning perceptions of overall stress in one's life, rather than in one particular domain such as work. Participants were asked to indicate how often the feelings and thoughts described by the PSS items occurred in the past month on a 5-point Likert scale ranging from *never* (0) to *very often* (4). Sample items include: "In the last month, how often have you been upset because of something that happened unexpectedly?" and "In the last month, how often have you felt difficulties were piling up so high that you could not overcome them?" The scale has shown to be a good predictor of stress in that it highly correlates with symptomatogical measures and life event scores.[33] The PSS was internally consistent in the Motorola (α=.87) and 3M (α=.89) samples.

Symptoms of illness. Symptoms of illness were measured using the 20-item Symptoms Checklist.[31] This checklist assesses the extent to which participants have experienced various physical and psychological symptoms (eg, common cold or flu, headaches, upset stomach, feeling nervous or tense) over the past few weeks on a 4-point Likert scale ranging from *none* (0) to *very often* (3). The Symptoms Checklist was internally consistent in the Motorola (α=.88) and 3M (α=.90) samples. Symptom scores were slightly but significantly positively skewed. The potential impact of this variable's nonnormal distribution on the data analysis is discussed below.

Data Analysis

Descriptive statistics were calculated for all variables in both samples. Pearson product-moment correlations were calculated to examine the linear relationships between the protective factors and measures of global stress and symptoms of illness in both samples. Lastly, 2 separate linear regressions were conducted, the first including supervisor support, hardiness, and percent approach coping as independent variables, and global stress as the dependent variable. The second regression contained the same independent variables and the dependent variable of symptoms of illness.

Preliminary analyses were performed to examine 3 potential issues that could affect the validity of the analysis. First, the data were collected from 2 different companies, and it is possible that the 2 companies differ in their regression parameters. The possibility of a moderating effect of company was supported by the fact that correlations between the protec-

Table 1
Possible Range, Means, and Standard Deviations for All Variables for Both Samples

	Possible Range	Motorola (n=398)		3M (n=110)	
		Mean	SD	Mean	SD
Supervisor support	0-5	3.47	1.60	3.63	1.51
Hardiness	0-90	61.28	7.61	61.36	8.98
Percent approach coping	0-1	0.66	0.07	0.65	0.08
Global stress	0-56	22.96	8.06	22.72	8.46
Symptoms of illness	0-60	10.29	8.19	10.95	8.42

tive factors and global stress and symptoms of illness were stronger in the 3M sample compared to the Motorola sample. To test the moderation hypothesis, we conducted sequential regressions containing the predictors of interest in the first step, a dichotomous variable representing sample membership in the second step, and the interactions between sample membership and the remaining predictors in the third step. For both of the dependent variables, neither the second nor third steps explained a significant amount of additional variance, indicating that there was no main effect or moderating effect of company. Accordingly, the 2 samples were pooled together for the regression analyses.

Second, the scores for symptoms of illness were significantly positively skewed. The skew was removed through a square root transformation, and a linear regression was performed on the transformed data. Results of the regression with the transformed data, however, were substantively similar to a regression with the original non-transformed data, and resulted in the same pattern of significance. To simplify the presentation for the reader, then, we report the results of the regression with the original data.

Third, the datasets contained several demographic variables that could be potential predictors of global stress or symptoms of illness, including sex, age, minority status, and income level ($18,000-$35,000; $35,000-$55,000; or $55,000-$85,000). Given minimum education requirements and annual salary ranges correlated perfectly, salary information was used as the primary indicator of position status. Preliminary regressions included gender (dummy-coded as "female"), age, minority status (white, non-white), and dummy-coded salary level as predictors of global stress and symptoms of illness. For both outcomes, being female was the only significant predictor. Accordingly, the female variable was included in all subsequent regressions.

Table 2
Correlations Between Protective Factors and Global Stress and Symptoms of Illness in Both Samples

	Motorola sample (n=398)		3M sample (n=110)	
	Global stress	Symptoms of illness	Global stress	Symptoms of illness
Supervisor support	-.16*	-.18*	-.35*	-.41*
Hardiness	-.56*	-.40*	-.72*	-.66*
Percent approach coping	-.49*	-.29*	-.64*	-.56*

* P<.01, 2-tailed

Table 3
Regression Coefficients for the Combined Sample

	B	SE	β
Global stress			
Sex (female)	2.30	0.56	0.14**
Supervisor support	-0.25	0.18	-0.05
Hardiness	-0.44	0.04	-0.42**
Percent approach coping	-28.10	4.46	-0.26**
Symptoms of illness			
Sex (female)	3.20	0.64	0.19**
Supervisor support	-0.59	0.21	-0.11*
Hardiness	-0.36	0.05	-0.34**
Percent approach coping	-13.65	5.09	-0.13*

* P<.01 **P<.001

RESULTS

Descriptive Statistics and Correlations

The possible range of scores, means, and standard deviations for all variables for both samples are shown in Table 1. Pearson product-moment correlations between the protective factors and global stress and symptoms of illness for both samples are shown in Table 2. As expected, in both samples of corporate employees, higher scores on supervisor support, hardiness, and percentage approach coping were significantly related to lower scores on global stress and symptoms of illness.

Regressions

Table 3 depicts the unstandardized and standardized coefficients for the regression analyses. The first regression was significant [$F(4,501) = 93.7$, P<.001], accounting for 42% of the variance in global stress. Females reported significantly greater levels of stress compared to males, while greater hardiness and percent approach coping were significantly related to less global stress. Supervisor support was not a significant predictor. The second regression was also significant [$F(4,501) = 46.5$, P<.001], accounting for 27% of the variance in symptoms of illness. Females reported significantly more symptoms of illness compared to males, while greater supervisor support, hardiness, and percent approach coping were significantly related to fewer symptoms of illness.

DISCUSSION

The present study's objective was to examine the relationship of factors within the work environment (ie, supervisor support) and the individual (ie, hardiness and approach coping) to the health outcomes of global stress and symptoms of illness. Based on the transactional model of stress and coping, it was expected that supervisor support, hardiness, and approach coping would serve a protective function in the experience of stress and illness. Correlational results demonstrated significant inverse relationships between each of the factors and global stress and symptoms of illness in both samples of corporate employees. Linear regressions revealed that supervisor support, hardiness, approach coping, and being male have beneficial relationships with global stress and symptoms of illness, with the exception that supervisor support did not predict global stress when hardiness, approach coping, and sex were included in the model. Overall, these results support the protective role these work and individual factors play in the experience of stress and illness.

The findings pertaining to supervisor support both uphold and extend previous research. The inverse relationship of supervisor support to symptoms of illness is consistent with research that relates supervisor support to other measures of physical and mental health.[17-19] Testing the protective spillover effect of supervisor support to global stress was of particular interest to the present study. The results suggest that although supervisor support is inversely related to global stress,

when sex and the individual factors of hardiness and approach coping are taken into consideration, they are stronger predictors of global stress, and supervisor support is no longer significant. These findings, coupled with prior research showing supervisor support to be a stronger predictor than individual factors in predicting work stress,[36] suggest that supervisor support is more beneficial in the experience of work-related stress, but that individual factors play a stronger role in relation to global stress. This is consistent with other research showing that within-domain relationships are stronger than cross-domain relationships, ie, that the impact of spillover is "bounded" by domain.[14] According to the transactional model of stress and coping, the perception of a supportive supervisor has a positive influence on an employee's perceptions of available coping resources at work and reduces the likelihood of appraising work demands as threatening. Although this influence did not appear to extend beyond the realm of work, the marginal reliability of the supervisor support scale may have attenuated the true relationship between supervisor support and global stress.

The results from the present study that pertain to hardiness and coping are consistent with previous research in these areas. Hardiness was found to be negatively related to global stress, which is consistent with previous research linking hardiness to perceptions of global stress and stressful life events.[21-23] Hardiness was also related to fewer symptoms of illness in the present study, an association that is consistent with previous research that has tied hardiness to other physical and mental health indicators.[21,23-24] Previous research relating an approach-oriented coping style to less global stress[23] and indicators of mental and physical health[24,26-29] is also consistent with the findings of the present study.

Of the demographic characteristics (sex, minority status, age, income level), only sex was a significant predictor of global stress and symptoms of illness. The finding that females reported significantly greater levels of global stress and symptoms of illness compared to males is consistent with previous research.[37,38] It is theorized that such disparities may reflect differences in the social experiences and conditions of the lives of men and women. For instance, Denton and colleagues[37] found that differential exposure to social structural (eg, family structure, socioeconomic status) and psychosocial (eg, recent life events, childhood trauma) factors explained sex-based health disparities. In addition, the experience of stress has been more strongly related to mental health problems in women, suggesting their greater susceptibility to stress compared to men.[38]

The results of this study should be considered in light of several limitations. First, the design of the study is cross-sectional; therefore, causation cannot be determined and the possibility that other variables may be accounting for some of the relationships cannot be dismissed. Future research using prospective and experimental designs would enable examination of cause-and-effect relationships, as well as the effectiveness of interventions targeted to enhance work environment and individual protective factors in order to reduce stress and illness. Second, there may be other protective mechanisms in addition to those studied here that are important to consider in the experience of stress and illness. One such mechanism is the support employees receive from their coworkers. We initially included this construct[30] in the present study; however, due to the poor internal consistency of the measure, this construct was excluded. Third, as with all survey data, self-report has inherent limitations such as potential bias due to such dispositions as negative affectivity and the subjectivity in reporting. For instance, in responding to the items on the supervisor support subscale, participants might have varied in their interpretation of the term *supervisor* if they had more than one supervisor or interpreted the term to mean the management of the company in general. Lastly, the use of convenient, self-selected samples of corporate employees limits the generalizability of the findings. Further research with randomly selected participants is necessary to strengthen the external validity of the study findings.

From a practical standpoint, this research suggests that worksite health promotion efforts focus on factors that serve a protective function in employees' experience of stress and illness. This recommendation is consistent with the Healthy People 2010 objective to "increase the

proportion of worksites employing 50 or more persons that provide programs to prevent or reduce employee stress" with a target compliance rate set at 50%.[39] Further, the results of this study suggest that although both supervisor support and the individual factors of hardiness and approach coping are significantly related to stress and symptoms of illness, the individual factors exemplify the strongest relationship. Thus, health promotion interventions that focus primarily on enhancing individual factors and secondarily on work environment factors may be most successful. This "inside-out" approach recognizes that by starting with the individual and his or her tendencies and perceptions, the work environment is simultaneously impacted as well by influencing the individuals who create that work environment. Although this approach focuses on the individual, it recognizes the importance of addressing the environmental conditions within which the individual works, which has been the focus of newer theoretical models pertaining to work stress such as the culture-work-health model.[40] Addressing both individual and work environment factors may contribute to a culture within the organization that creates less stress, and subsequently less illness. For instance, it has been proposed that workplaces with participatory management practices, combined with employee assistance and health promotion programs, may be ideal in terms of health promotion and cost avoidance.[41]

A shift in stress and health research is now called for from managing health risks to developing sources of strength and resilience among individuals.[42] Organizations may benefit by including hardiness and coping concepts in training and assimilation programs for employees and supervisors. For example, the results of this study led to the implementation of ongoing resilience training programs at Motorola and 3M, sponsored by the wellness programs and in conjunction with human resources. In addition, supervisor development programs should emphasize the value of supervisor support, providing training to develop the skills necessary to create more supportive work environments. Health promotion professionals can have more input into supervisor and executive training classes within the company to address how to promote a more supportive environment for their employees. Both strategies have the potential to build organizational strength, while also providing the opportunity for employees to build relationship skills and improve their health.

Recognizing hardiness and coping as potential targets for intervention raises the issue of whether it is possible to change an individual's general tendencies, which are by nature difficult to change. It is possible to modify such characteristic responses through increasing awareness of those that are maladaptive and training individuals in alternate patterns of responding that are more effective. For example, cognitive-behavioral therapies have been successful in teaching adaptive coping skills and restructuring cognitions to be consistent with a hardy outlook. In addition, hardiness training has been shown to be effective in enhancing levels of hardiness,[43,44] adaptive types of coping,[43,44] and perceptions of social support,[45] as well as attenuating psychological distress.[45] These intervention studies show promising evidence that new ways of responding can be learned and developed and have beneficial effects. Once developed, these individual factors serve a protective function in mitigating the relationship between stress and physical and psychological functioning.[24]

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