

Coping Style, Cognitive Hardiness, and Health Status

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This study investigates the effects of coping style and cognitive hardiness on physical and psychological health status. Measures of coping styles (intrusive positive thoughts, intrusive negative thoughts, avoidance, problem-focused coping), cognitive hardiness, stress, health habits, psychological distress, and physical illness were collected for 194 professional employees. Multiple regression analyses revealed that intrusive negative thoughts and avoidance coping approaches significantly contributed to predictions of psychological distress and physical illness outcomes, respectively. Cognitive hardiness significantly contributed to predictions of psychological distress but not physical illness outcomes. Health habits were significantly related to both measures of health status. Two coping approaches, intrusive positive thoughts and problem-focused coping, did not significantly contribute to predictions of either physical or psychological health status.

KEY WORDS: coping; hardiness; stress; health status.

INTRODUCTION

Over the last several years, there has been a tremendous explosion of research into how individuals cope with work and life stress. This research has occurred in light of the consistent, albeit modest, correlations found between measures of stress and health status (Rabkin and Struening, 1976; John-

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son and Sarason, 1979). These findings suggest that stress, generally measured as major life events or daily hassles, may be less important to both physical and psychological well-being than other individual appraisal and coping processes (e.g., Antonovsky, 1979; Lazarus, 1981; Cobb, 1976; Lefcourt, 1980; Kobasa, 1979; Belloc and Breslow, 1972; Matthews and Haynes, 1986).

Although the areas of appraisal and coping processes are rather complex, there is a striking congruence in much of the literature. This congruence is based on two basic orientations toward coping with stressful work and life events, approach and avoidance (Roth and Cohen, 1986). But approach and avoidance refer to cognitive, emotional, and behavioral activity that is oriented either toward or away from perceived harm, threat, or challenge. Recently, coping has received focused attention as a possible moderator of the relationship between stress and illness (cf., Andreassen and Morris, 1972; Cohen and Lazarus, 1973; Zales, 1985; Averill and Rosen, 1972). The presence or absence of specific approach and avoidance coping strategies has been related to a variety of health outcomes (e.g., Jemmott and Locke, 1984; Manne and Sandler, 1984; Horowitz, 1976; Zilberg *et al.*, 1982; Lazarus, 1983).

There is strong evidence to support the hypothesis that avoidance may be particularly more effective than approach strategies when outcome measures are immediate or short-term and when work and life situations are largely uncontrollable (Roth and Cohen, 1986; Lazarus, 1983). It would appear obvious that chronic symptoms and illness such as diabetes, high blood pressure, and high blood serum cholesterol levels require vigilance and attention for proper diagnosis, treatment, and successful life-style modification. Use of avoidance strategies here might literally lead to exacerbation of the disease process itself, or even death in the long term. However, avoidance strategies might actually be beneficial in preventing the outbreak of some infectious diseases (e.g., genital herpes) or when approach strategies offer little or no appreciable benefit. Since the etiologies of chronic and infectious diseases are quite diverse, it is logical to assume that no simple relationship exists between coping strategies and health status. Furthermore, the use of non-systematic measurement tools, multiple definitions of coping effectiveness, and a diversity of stressors has increased the difficulty of evaluating the coping process.

Current measures of coping strategies include standardized instruments, interviewing protocols, or observational techniques that assess the use of cognitive, affective, and behavioral coping approaches. The measurement of coping has generally been divided into two diverse areas: (1) recovery from traumatic life events and (2) anticipation of future stressful events. As a result, a proliferation of measurement tools has emerged to assess the use of cognitive, behavioral, and affective coping strategies in response to specific life

events or anticipation of future stresses (e.g., Folkman and Lazarus, 1980, 1985; Pearlin and Schooler, 1978; Billings and Moos, 1980; Kaloupek *et al.*, 1984; Zilberg *et al.*, 1982).

In this study, the conceptualization of coping is based on the schema first proposed by Lazarus *et al.*, in which coping is viewed as a response to perceived stress, resulting in the development of the Ways of Coping Checklist (Folkman *et al.*, 1980). This instrument may be conceptualized as a state measure capturing individual coping processes around specific stressful life events that appear to be predictive of both physical and psychological health status (Aldwin and Revenson, 1987; Vitaliano *et al.*, 1987).

It might be argued that this "state approach" to assessing coping (i.e., measures that focus on a current serious life event) may actually be reflective of individual coping preferences in response to specific work and life stressors. It would appear that development of coping scales that attempt to assess generalized coping strategies without reference to specific approaches used in the context of a particular stressor would also have some value in light of recent findings that support the consistency of individual coping styles over time and across diverse life situations (e.g., Mullen and Suls, 1982; Cohen and Roth, 1984; Averill and Rosen, 1972). Although there is evidence that in some situations people have a strong preference for either avoidance or approach responses, it is likely to be true that the uses of avoidance and approach coping strategies are not mutually exclusive (Roth *et al.*, 1986).

One advantage of using a trait measure of coping is that it allows the researcher to compare situational-specific coping responses and individual tendencies. A strong advantage of a trait coping measure is that it uses both idiographic norms (by making the subject his/her own frame of reference) and nomothetic norms (by comparing relative coping strategies used across subjects). Such an approach is not inconsistent with the theoretical arguments for the use of ipsative measures in the transactional approach to stress and coping by Coyne and Lazarus (1979), although they might argue that the study of coping processes should be conceptualized as dynamic forces and not relatively static structures as proposed here. In any event, both measurement approaches appear to have merit for additional investigation. Most likely, neither approach to the conceptualization and measurement of coping is completely accurate in describing complex transactional behavior in the face of work and life stress.

The coping measure developed in the study provides four conceptually distinct coping strategies along the approach and avoidance domains. The four coping styles measured include (1) intrusive positive thoughts (i.e., positive admonitions and self-talk), (2) intrusive negative thoughts (i.e., self-blame, criticism, perfectionistic tendencies, catastrophic/irrational thinking), (3) avoidance (i.e., minimization of the significance of a stressor, not dwell-

ing on a stressor), and (4) problem-focused coping (i.e., behavioral attempts to change environmental stressors or his/her own behavior).

A conceptually distinct individual coping variable that has been shown to have direct effects on the stress-illness relationship is the meta-construct of hardiness (Kobasa, 1979). According to Kobasa (1979), the hardiness meta-construct represents a constellation of three relatively stable appraisals which function as a buffer in the encounter of work and life stress. These three cognitive appraisals are described as (1) a view of commitment rather than alienation toward work and life, (2) a view of personal control (internal) over individual outcomes, and (3) a view of life change as a challenge rather than a threat.

In a number of studies, Kobasa and her colleagues (cf. Kobasa, 1979; Kobasa *et al.*, 1981, 1982, 1983) showed that individuals possessing hardy appraisals of work and life remain physically healthier, particularly when experiencing a great deal of life change stress. Although potentially a promising variable, a number of criticisms surrounding the hardiness literature have been discussed recently (cf. Hull *et al.*, 1987; Nowack, 1986).

These criticisms tend to focus on (1) how hardiness is measured; (2) whether hardiness should be treated as a unitary phenomena associated with commitment, challenge, and control; (3) whether hardiness predicts both psychological and physical health status; and (4) whether hardiness has direct or indirect effects on health. Partly in response to these criticisms and partly as a result of encouragement from other researchers (e.g., Hull *et al.*, 1987) to explore alternative measures of hardiness that will not obscure the independent contribution of its subcomponents, a new scale was developed based on the personality hardiness literature. A brief, 30-item, cognitive hardiness measure was developed particularly for this study containing items assessing (1) commitment toward work, family, community, and life; (2) affective, emotional, and behavioral self-control; and (3) optimistic views of change, challenge, and threat.

The purpose of this study was to explore the relationship between stress, coping, and psychological and physical health status. Coping was assessed by the Coping Style Scale, Cognitive Hardiness Scale, and a measure of health habits. It was hypothesized that cognitive hardiness, coping style, and health habits would each significantly contribute to predictions of health status. Consistent with previous research, it was expected that intrusive negative thoughts would be positively correlated with health status and that intrusive positive thoughts, problem-focused coping, cognitive hardiness, and avoidance would be negatively correlated with health status. Additionally, it was expected that the practice of daily health habits would be negatively correlated with both psychological and physical health status.

METHOD

Participants and Procedures

Questionnaires were distributed to 262 professional employees attending approximately 14 management training workshops over an 8-month period in a variety of organizations in the Los Angeles area. Prior to each management training class, respondents were sent a cover letter explaining the purpose of the testing, assuring them of confidentiality, and requesting their participation on a voluntary basis. Respondents were also told that they could receive confidential written feedback regarding their results during the training program. A total of 194 questionnaires was returned for a response rate of 74%. This high response rate is most likely attributed to (1) separate mailings prior to each management training class, (2) phone confirmations regarding subsequent attendance to the classes, and (3) personalized written feedback provided to each participant.

The mean age of the employee sample was 38.3 years. This professional adult sample appears to be relatively young, gender balanced (58% male and 42% female), well educated (62% possess at least a 2-year college degree), and racially diverse (67% Caucasian, 10% Black, 10% Hispanic, 12% Asian, and 1% other).

Measures

Independent Measures

Three coping-related scales were developed for this particular study, the Coping Style Inventory, the Cognitive Hardiness scale, and the Health Habits scale. All were theoretically derived and based on the current health psychology literature.

Coping style was assessed by the 20-item Coping Style Scale, which was developed to appraise four types of coping responses: intrusive positive thoughts, intrusive negative thoughts, avoidance, and problem-focused coping. This coping style scale is answered on a 5-point scale assessing frequency of use of particular coping behaviors (e.g., "never," "rarely," "sometimes," "often," "always").

Scale construction took place following a combination of factor analytic and rational procedures designed to eliminate weak or redundant items

(item-scale r had to be $> .25$ and $< .50$ to be retained), to maximize representation of different aspects of coping of each scale, and to produce relatively independent coping scales. These procedures resulted in a five-item Intrusive Positive Thoughts scale with a coefficient alpha of .67, a five-item Intrusive Negative Thoughts scale with a coefficient alpha of .72, a five-item Avoidance scale with a coefficient alpha of .68, and a five-item Problem-Focused scale with a coefficient alpha of .67.

Characteristic items for the Coping Style Scale included the following: Intrusive Positive Thoughts – “Say and think positive things to myself to make me feel better about it”; Intrusive Negative Thoughts – “Blame and criticize myself for creating or causing my problem;” Avoidance – “Avoid thinking about it when it crosses my mind”; and Problem-Focused coping – “Change something in my own behavior or environment to minimize or alleviate my dissatisfaction.”

The Cognitive Hardiness scale was constructed similarly and assesses the possession of specific attitudes and beliefs based upon the concept of personality hardiness (Kobasa, 1979). This scale has its roots in the work of Lefcourt and Rotter (1980), Phares (1976), and Antonovsky (1979). Recent criticisms of the original hardiness scale by Kobasa (cf. Hull *et al.*, 1987; Nowack, 1987) have also been considered in the development of the present scale. The present, 30-item scale, is composed of attitudes and beliefs about work and life including (1) involvement – commitment, as opposed to alienation, to one’s work, family, self, hobbies; (2) challenge – attitudes around viewing life changes as challenges as opposed to threats; and (3) control – beliefs that one has a sense of control over significant outcomes in life.

Respondents are asked to rate how strongly they agree with specific statements about their beliefs on a 1-5 scale (“strongly agree,” “agree,” “neither agree nor disagree,” “disagree,” “strongly disagree”). A sample item is, “My involvement in non-work activities and hobbies provides me with a sense of meaning and purpose.” This scale demonstrated a high internal consistency reliability (alpha) of .83.

Health habits were measured by a 25-item scale assessing the daily practice of specific behaviors hypothesized to be conducive to both physical and psychological well-being. These health habits include level of exercise, rest and sleep, preventive hygiene practices, and nutrition and eating habits. Respondents are asked to rate how frequently they practice these specific health habits on a 1-5 scale (e.g., “never,” “rarely,” “sometimes,” “often,” “always”).

This scale is conceptually based on earlier research on preventive health behaviors including Harris and Guten (1979), Belloc and Breslow (1972), Wiley and Camacho (1980), Williams and Wechsler (1972), and Pardine *et al.* (1982). High scores on the health habits scale suggest the practice of health habits on a regular basis. This scale demonstrated a moderately high inter-

nal consistency reliability (alpha) of .80. Some characteristic items include "Exercised for at least 30 minutes, three times a week, to enhance muscle tone, strength, or flexibility (e.g., stretching, weight lifting, calisthenics, isometrics, etc.);" and "missed an entire night or large proportion of an entire night of sleep because of work or play activities."

Stress was measured using a six-item scale based on the Hassles Scale (Kanner *et al.*, 1981). This scale lists six categories of minor irritants of daily living including the areas of work, family, friends, the environment, practical considerations, and chance occurrences. This scale has demonstrated an adequate test-retest reliability (.67) over a 4-month period. The original Hassles Scale has been found to account for more variance to a variety of psychological and health outcomes than the life events approaches to stress management (Kanner *et al.*, 1981; Monroe, 1983).

Dependent Measures

Psychological distress was assessed by an adapted version of the *Hopkins Symptom Checklist* (HSCL; Derogatis *et al.*, 1974). This measure has shown a moderately high internal consistency (Cronbach's alpha of .86), test-retest reliability (.75 over a 6-month period), and growing construct and criterion-related validities with normal adult samples (Derogatis *et al.*, 1974). The HSCL consists of 58 items and has been repeatedly factored into five distinct dimensions including anxiety, depression, somatic-complaints, interpersonal sensitivity, and compulsive thoughts. A global psychological distress score was calculated for the present study (Cronbach's alpha of .91).

Physical illness was adapted by a measure developed by Greenberg (1981). This eight-item scale asked respondents to endorse the frequency of specific categories of illness or symptoms of illness. These chronic and infectious illness categories included (1) injuries/accidents, (2) infection (bacterial or viral), (3) respiratory, (4) gastrointestinal, (5) neurological, (6) cardiovascular, (7) change in existing medical condition, and (8) miscellaneous physical symptomatology. This eight-item scale is answered on a 5-point continuum (e.g., "no times," "one time," "two times," "three times," "four or more times") over a 3-month period. A global score was calculated for the present study representing a composite of chronic and infectious illness or symptoms of illness (Cronbach's alpha of .73).

RESULTS

Demographic variables of interest to this study included gender, age, ethnicity, and education. No significant differences were observed by either

Table I. Intercorrelations of the SAP Scales (N = 194)

Scale	1	2	3	4	5	6	7	8	9
1. Stress		-.48*	-.46*	-.18*	.35*	-.26*	.01	.46*	.58*
2. Health Habits			.33*	.06	-.28*	.04	.18*	.47*	-.58*
3. Cognitive Hardiness				.42*	-.44*	.40	.32*	-.36*	-.36*
4. Intrusive Thoughts (+)					.04*	.55*	.41*	-.17*	-.09*
5. Intrusive Thoughts (-)						-.09*	.05	.22*	.51*
6. Avoidance							.22*	-.25*	-.23*
7. Problem-Focused Coping								-.07*	-.07
8. Physical Illness									.54*
9. Psychological Distress									

*p < .01.

ethnicity or education. Age was significantly, albeit slightly, correlated with both stress [$r(194) = -.17, p < .01$] and global health habits [$r(194) = .15, p < .01$]. Data available on the relationship between preventive health behaviors and age suggest that the prevalence of regular health habits increases with age (cf. Belloc and Breslow, 1972; Harris and Guten, 1979).

Significant differences by gender were observed for several scales. Females reported significantly more work and life stress [$F(1,193) = 4.89, p < .05$], more negligence in their practice of global health habits [$F(1,193) = 3.95, p < .05$], and less cognitive hardiness [$F(1,193) = 4.01, p < .05$] than males. These gender differences might be partially explained as a function of the full-time working status of the study sample. Professional working women may tend to experience greater stress and more negligence in health habits due to multiple and conflicting roles at and away from work compared to their male counterparts.

To determine the interrelationships among the research variables, Pearson product-moment correlations were computed. Table I summarizes these intercorrelations. Significant, albeit modest, correlations were found between the four coping scales (intrusive positive thoughts, intrusive negative thoughts, avoidance, and problem-focused coping) and the cognitive hardiness scale (r 's = .42, -.44, .40, and .32, respectively; all p 's < .01). The magnitude and direction of these correlations provides some evidence of construct validity for these coping scales.

Some overlap between the four coping style scales was also apparent. Significant correlations were observed between positive intrusive thoughts and avoidance ($r = .55, p < .01$) and problem-focused coping ($r = .41, p < .01$). A significant correlation was also observed between the avoidance and the problem-focused coping scale ($r = .28, p < .01$).

Coping, Psychological Distress, and Physical Illness

Table II presents the results of two separate stepwise multiple regression analyses using stress, cognitive hardiness, coping style, and health habits as predictors of psychological distress and physical illness outcomes. This permitted an examination of the incremental variance attributed to these independent variables on the two physical and psychological health status measures.

Cognitive hardiness, health habits, stress, and intrusive negative thoughts all significantly contributed to predictions of psychological distress outcomes. Together, these independent variables accounted for approximately .60 of the variance in this dependent variable. No other coping style scales significantly contributed to predictions of psychological distress in this regression analysis.

Table II. Results of Multiple Regression Analysis with Psychological Distress and Physical Illness as the Dependent Variables ($N = 194$)

Variable	Multiple R	RSQ	RSQ change	F
Psychological distress				
Cognitive Hardiness	.58	.33	.33	86.6*
Health Habits	.71	.51	.17	58.5*
Stress	.75	.55	.05	19.4*
Intrusive Negative Thoughts	.78	.60	.04	19.0*
Physical illness				
Health Habits	.48	.23	.23	48.4*
Stress	.53	.28	.06	14.1*
Avoidance	.59	.34	.06	15.2*

* $p < .01$.

Health habits, stress, and avoidance all significantly contributed to predictions of physical illness outcomes. Together, these independent variables accounted for approximately .34 of the variance in this dependent variable. Avoidance incrementally added to the prediction of physical illness ($R^2 = .06$; $F(1,193) = 15.2$, $p < .01$). No other coping style scale significantly contributed to physical illness in this regression analysis.

DISCUSSION

The results of this study tend to support a positive association among stress, coping, and health status. It is important to note that these findings rely exclusively on self-report data and utilize measurement tools that possess modest reliabilities and lack established criterion-relation validity beyond the present. Additionally, this study exclusively focused on relatively healthy, full-time employed adults between 22 and 64 years of age. However, it must also be emphasized that these are early studies underscoring the viability of assessing specific cognitions and behaviors that potentially moderate the stress-illness relationship.

Only two coping style scales significantly contributed to physical and psychological health status in the regression analyses. Specifically, intrusive negative thoughts significantly contributed to predictions of psychological distress and avoidance to predictions of physical illness. Individuals who reported using a greater level of intrusive negative thoughts as a general way of coping with both work and life stress reported significantly higher level of overall psychological distress. In subsequent analysis of the data, the intrusive negative thoughts scale was found to be significantly correlated with the depression ($r = .52$, $p < .01$), anxiety ($r = .34$, $p < .01$), somatic complaints ($r = .35$, $p < .01$), and impulsivity ($r = .47$, $p < .01$) subscales of

the psychological distress measure (Hopkins Symptom Checklist) used in this study. These findings appear to be supportive of previous research suggesting that negative self-talk is generally associated with symptoms of psychological distress and specifically related to anxiety and depression (e.g., Beck, 1979; Meichenbaum and Turk, 1976; Ellis, 1974).

The contribution of avoidance to the prediction of physical illness in the present study suggests that individuals who minimized the significance of aversive cognitions related to work and life stress reported less physical illness than those who tended to dwell on what was bothering them. However, this finding must be interpreted cautiously in light of the particular illness measure used in this study. This measure provides a global assessment of both chronic and infectious illness and symptoms of illness. As such, the true relationship between avoidance and chronic illness and infectious illness may be obfuscated. Additional research is required to further elucidate the role of avoidance in the stress-illness relationship. Such research should utilize and compare multiple assessments of avoidance strategies with both chronic and infectious illness outcomes. Additionally, both short- and long-term effects of coping should be measured with the same subjects in longitudinal designs.

Although the use of avoidance was significantly associated with a concurrent measure of physical illness in this study, it was not possible to determine whether this coping style might actually be detrimental in some manner. In general, it would appear that when there is no possibility of changing aversive situations or utilizing approach strategies, avoidance can directly moderate the effect of stress on physical well-being (Roth and Cohen, 1987; Lazarus, 1983). Clearly, additional research is required to clarify and explore further the potential benefits and liabilities of avoidance approaches in dealing with stressful work and life events.

In the present study, health habits significantly contributed to predictions of both physical and psychological health. With respect to physical illness, health habits entered the regression first, accounting for .23 of the variance in this dependent variable. These findings suggest that behavioral health coping strategies may play an important and direct role in the stress-illness relationship. This finding is consistent with previous research that has shown that short- and long-term health status are influenced by many health behaviors under an individual's own control (cf. Belloc, 1973; Wiley and Comacho, 1980). Additional research should focus on the interaction between specific coping styles and the practice of health habits on both chronic and infectious illness. Such research should help delineate aspects of successful life-style modification programs as well as relapse prevention strategies for adults across various ages and occupational settings.

The Cognitive Hardiness scale was found to contribute significantly to prediction of psychological distress but not physical illness in this study. This

finding is consistent with prior research (Nowack, 1986) extending the role of cognitive hardiness with health outcomes other than physical illness. It would appear that conceptually, the sense of commitment, control, and challenge underlying the cognitive hardiness measure developed for this study are important cognitions that appear to moderate the impact of daily work and life stress on well-being. Additional research should focus on the potentially additive, or interactive, effects of specific coping styles and this cognitive hardiness scale with multiple health outcome measures.

In general, this study provides limited criterion-related validity between diverse coping measures and health status with a professional working adult sample. Replication of this study is necessary with diverse samples (e.g., students, elderly) to strengthen the generalizability of the findings. Additional research is required to strengthen the psychometric properties of these coping measures (Coping Style, Cognitive Hardiness, and Health Habits scales) as well as to determine the relative effectiveness of specific coping styles to diverse psychological and physical health outcomes.

It is an obvious understatement to mention that coping with stress is a highly dynamic process. The basic approach and avoidance strategies measured here can certainly vary in primacy across time for an individual, and both of these basic conceptualizations of coping with stress may even exist together. An individual may have a consistent preference for one coping strategy over another, even if it is clearly dysfunctional in a particular work and life situation (Roth and Cohen, 1987). As such, the study of coping will remain exceedingly complex and challenging. However, the approach to the measurement of coping proposed here would appear to be useful for assessing individual tendencies across major or minor life events. Further study is clearly required to clarify the merits and utility of this particular approach to the conceptualization and measurement of diverse coping behaviors.

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