

AN ABSTRACT OF THE THESIS OF

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Title: The Effects of Hardiness and Coping Strategies
on Perceived Stress

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The construct of hardiness and various types of coping strategies have been separately analyzed in previous research with respect to their effect on stress. Both have been found to be related to the reduction of stress and/or the buffering of negative outcomes due to stress. This study attempted to examine how coping strategies are related to hardiness. Participants included 30 executives attending a seminar at the Menninger Management Institute in Topeka, Kansas and 60 undergraduate students from Emporia State University. They completed surveys on perceived stress, coping strategies, and hardiness. Results demonstrated the student sample utilized more avoidant coping strategies than the executive group. In addition, hardiness and problem-reappraisal coping were negatively related to perceived stress. Avoidant coping, however, was positively related to perceived stress and negatively related to hardiness.

**THE EFFECTS OF HARDINESS AND COPING STRATEGIES
ON PERCEIVED STRESS**

A Thesis

Presented to

the Division of Psychology and Special Education

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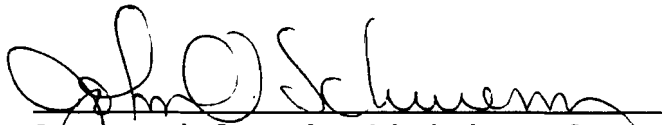
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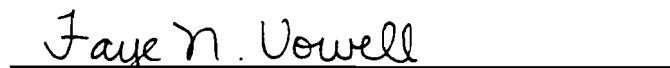
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CHAPTER 1

Introduction

A considerable amount of research literature has been devoted to the examination of stress. In addition, there are numerous books outlining the negative effects of stress and offer means by which stress can be reduced. Although stress has been defined in a number of ways (Cox, 1978; Lazarus, 1966; Selye, 1974; and Weitz, 1970), Matteson (1987) argues that an interactional definition provides the most realistic view of the dynamic nature of stress. He states stress is "an adaptive response, mediated by individual characteristics, that is a consequence of any external action or event that places special demands upon a person" (p. 157).

It was once thought stress could be left where it was being experienced (Klarreich, 1990). For example, if individuals were stressed at work, they would find solace at home. Conversely, if individuals were stressed at home, relief from negative symptoms would be found at work. However, this was quickly found not to be true. The consequences of stress are taken everywhere. If we are stressed at home, then our work is likely to suffer. Because of its widespread effects, numerous individual and organizational consequences of stress have been documented. Quick and Quick (1984) provide an exhaustive list of both organizational and individual consequences of stress which

include sleep disturbance, depression, heart disease, stomach ulcers, accident proneness, and absenteeism. Furthermore, according to the 1993 World Labour Report (Report) from the International Labour Organization, stress has become the most serious health concern of this century ("Worldwide stress," 1993). It is estimated in the Report that job stress costs industry approximately \$200 billion annually in the United States alone. These losses are most often in the form of absenteeism, accidents, and eventual job burnout. Job burnout is defined in the Report as a condition where an employee feels pessimistic, dissatisfied, and has a low resistance to illness. Workers' compensation claims in recent years also illustrate the negative impact of stress on industry. For example, California's stress-related compensation claims have jumped 700% in the last decade (Anderson & Binstein, 1992). In contrast to this tremendous increase, a recent study of ten states shows mental stress-related workers' compensation claims have declined steadily since 1987 ("Mental stress," 1993). This decline, however, is more an artifact of workers' compensation reform than an actual decrease of mental stress. More specifically, reforms some states have initiated limit the compensability of mental stress-related claims to those with clear evidence the disorder originated during employment (Calise, 1993). Therefore, mental stress is not necessarily less prevalent in the workplace, it has just been redefined.

Although stress is potentially debilitating and widespread, not everyone is adversely affected. In fact, while a stressful situation may ultimately lead to a serious illness in some individuals, the same stressor may have virtually no effect on another individual. These variations in the effects of stress across individuals have prompted research into the area of stress resistance and coping mechanisms.

Several researchers have noted the level of stress a person experiences and the degree to which negative outcomes occur are related to the coping strategies one utilizes (McLaughlin, Cormier, & Cormier, 1988; Osipow & Davis, 1988; Latack, 1986). Coping, in this instance, can be defined as "cognitive and behavioral efforts to master, reduce, or tolerate the internal and/or external demands that are created by the stressful transaction" (Folkman, 1984, p. 843). The identification of healthy coping strategies is of both theoretical and practical importance. By studying cognitive and behavioral coping strategies that act to reduce stress, a better understanding of the concept of stress is achieved. In addition, the possibility of teaching such coping strategies may help others combat the negative effects of stress.

Some individuals are also able to deal more effectively with stress than others because of certain personality characteristics they possess. These characteristics are collectively referred to as hardiness. Hardiness, as

proposed by Kobasa (1979), is a constellation of personality traits that operate as a resistance resource when stressful life events are experienced. In previous research, hardiness has been shown to have a mediating effect on the experience of stressful life events in producing illness symptoms (Kobasa, 1979; Kobasa, Maddi, & Kahn, 1982). This construct is composed of three personality dispositions (commitment, control, and challenge) that can be characterized respectively as the tendency to involve oneself in whatever one is doing, act as if one can influence their surroundings, and the belief that change rather than stability is normal in life. Because both coping strategies and hardiness have the potential to decrease the negative effects of stress, an examination of the interaction of the two is of interest.

Hardiness

Kobasa's (1979) initial work on hardiness was conducted on business executives from a large utility company that was in the midst of drastic organizational changes. This study was an attempt to provide an empirical demonstration of how some executives showed no signs of physical or mental debilitation despite exposure to a more stressful work environment (Kobasa, 1982a). It was hypothesized that individuals who feel committed to the various areas of their lives, who have a sense of control over their lives, and who view change as a challenge would remain healthier than those who did not possess these qualities.

Two groups of highly stressed executives were formed utilizing the Schedule of Recent Life Events (Holmes & Rahe, 1967) and the Seriousness of Illness Survey (Wyler, Masuda, & Holmes, 1968). One of the groups reported a high level of illness and the other reported a low level of illness. Several instruments were then used to test the hypotheses. These included the Personality Research Form (Jackson, 1974; Wiggins, 1973), the Internal-External Locus of Control Scale (Rotter, Seeman, & Liverant, 1962; Lefcourt, 1973), the Alienation Test (Maddi, Kobasa, & Hoover, 1979), the California Life Goals Evaluation Schedule (Hahn, 1966), and an adaptation of the Gergen and Morse (1967) Self-Consistency Test. Analysis of the data revealed the high stress/high illness executives were significantly different than the high stress/low illness executives. The high stress/low illness executives reported being challenged by life circumstances (expressed as vigorousness as opposed to vegetativeness), having an internal versus external locus of control, and having a greater sense of meaningfulness.

To further validate her findings, Kobasa (1982a) conducted a study on 80 "holdout" subjects from the original sample population. She was able to correctly classify 78% of the subjects into low and high illness groups utilizing only data reflecting the executives' "control," "challenge," and "commitment" scores. These findings supported the proposed construct of hardiness. That is, persons high in the personality characteristics of control, challenge, and

commitment will remain healthier under stressful situations than those low in the same characteristics.

A prospective investigation of the original hardiness study was conducted with 259 executives from the same public utility (Kobasa, Maddi, & Kahn, 1982). Stressful life events and illness data covering a period of five years, including the previous two years, was collected from the executives. Over this period, subjects were reported to have experienced an increasing amount of stress and an increasing amount of self-reported illness. However, the high stress/high hardiness individuals were more resistant to illness over time. In fact, the high stress/low hardiness individuals reported nearly twice as much illness than the high stress/high hardiness group.

Subsequent research supported the contention that hardiness had a buffering effect with respect to stress and physical symptomology. These studies included an examination of United States army officers (Kobasa, 1982a), lawyers involved in general practice (Kobasa, 1982b), and women screened for cervical cancer (Kobasa, 1984). Other researchers have found similar results. For example, Banks and Gannon (1988) tested 88 undergraduates in a prospective study of the impact of hardiness, life events, and hassles on reports of somatic symptoms. Hassles, or daily mundane stressors, were found to be a better predictor of somatic symptomology than life events. Subjects higher in hardiness tended to experience less frequent stressors and to perceive

those they did experience as less stressful. Therefore, because hardier individuals experienced a fewer number of hassles, they also experienced less somatic symptomology. Furthermore, in a study of Japanese men, Nakano (1990), found hardy individuals were less likely to have physical symptoms and depression than their less hardy counterparts.

Researchers have also studied the relationship of hardiness to emotional and psychological factors thought to be related to personal well-being and work performance. Manning, Williams, and Wolfe (1988) using a sample of 468 subjects from various working environments, found those with a higher hardiness score reported higher levels of job satisfaction, more positive affect, lower incidence of depression and anxiety, and experienced fewer tensions at work. Similarly, Wiebe (1991) found that high hardy undergraduate subjects were more likely to respond to an evaluative threat task with more positive affect, to appraise the task as less threatening, and to display a higher tolerance for frustration than low hardy subjects.

Hardiness has also been studied with respect to burnout. Burnout refers to a pattern of exhaustion an individual experiences when subject to unavoidable pressures at the same time sources of satisfaction appear to be unavailable (Moss, 1981). This term is typically related to individuals succumbing to stress in a variety of people-oriented service industries, such as teaching, nursing, and social work (Atkinson, 1988).

In a study of 100 female staff nurses, Rich and Rich (1987) examined the moderating effect of hardiness on burnout. They found burnout and hardiness were inversely related. That is, individuals who scored higher on the hardiness measure tended to score lower on the burnout inventory. It was further demonstrated that personality and age, which accounted for 41% of the variation in burnout scores, were independent and additive rather than interactive. Thus, the authors concluded burnout-resistant nurses are hardier than those prone to burnout. Other studies have shown a similar relationship between hardiness and burnout in the nursing field (McCranie, Lambert, & Lambert, 1987; Harris, 1989), among teachers (Pierce & Molloy, 1990), and university employees (Nowack, 1986).

Although support for the hardiness construct has been documented by several researchers, the concept has been subject to criticism. Funk and Houston (1987) have noted several shortcomings with previous research, including:

- (a) little clear evidence of the buffering effect of hardiness;
- (b) the failure of factor analysis to reproduce the three components of hardiness;
- (c) the measurement of hardiness with negative indicators that may tap general maladjustment;
- and (d) the frequent use of inappropriate statistical techniques. (p. 572)

After reviewing the literature and conducting their own research on the psychometric properties of the hardiness

construct, Hull, Van Treuren, and Virnelli (1987) presented similar criticisms. They concluded:

(a) Hardiness is not a unitary phenomenon, but should be treated as involving three separate phenomena; (b) of the three subcomponents of hardiness, only commitment and control have adequate psychometric properties and are systematically related to health outcomes; (c) lack of control and lack of commitment have direct effects on health because they are psychologically stressful; and (d) if there are buffering effects of commitment and control, they are in addition to these direct effects and are situation specific. (p. 518)

In these two critiques, hardiness is argued to be comprised of two, rather than three, subcomponents. While commitment and control have found support in the literature, the challenge component has been found to be lacking. In a study of 105 U.S. army officers, Kobasa (1985) found the challenge dimension of hardiness was associated with an increase in illness. Although this particular discrepancy was explained as a function of the peace-time Army situation that was being studied, other researchers have found problems with the challenge component as well (Hull, Van Treuren, & Virnelli, 1987; Rich & Rich, 1985; Schlosser & Sheeley, 1985; Zich & Temoshok, 1987).

Coping Strategies

Three categories of coping strategies, which were derived through the integration of several conceptual frameworks, were examined in this study. These categories include avoidance (reduce tension by avoiding the problem), problem-reappraisal (efforts to manage the appraisal of the stressfulness of the event), and active problem-solving (actively confronting the problem).

Folkman and Lazarus (1980) identified coping as a means of "problem-focused" and "emotion-focused" strategies. Although there exists a variation in terminology, the categories are conceptually identical to active problem-solving and problem-reappraisal. They state coping is situation-specific in that it is utilized in specific situations, such as being confronted with an unreasonable work load or an unmanageable subordinate. "Problem-focused" is defined as a direct attempt to alter or manage the situation (e.g., "Confronted my supervisor with the problem"; "Came up with a plan of action and followed it"). "Emotion-focused" coping is defined as a attempt to reduce or manage emotional distress (e.g., "Forgot work when I finished for the day"; "Looked for the 'silver lining', so to speak"). Because "emotion-focused" coping strategies are directed at changing thoughts regarding the situation, they are more precisely viewed as cognitive reappraisal (Latack, 1986). Active problem-solving and problem-reappraisal have

also been identified as "action" and "cognitive reappraisal" by other researchers (Latack, 1984; Moos & Billings, 1982).

In addition to active problem-solving and problem-reappraisal, avoidant coping strategies have been recognized by several researchers (Billings & Moos, 1981; Holahan & Moos, 1987; Menaghan, 1982). This category can include cognitive (e.g., "Hoped a miracle would happen") and physical avoidance (e.g., "Left work as soon as possible") strategies. Although avoidance, also referred to as "escapist coping", can be useful in situations in which change is impossible (Gal & Lazarus, 1975; Lazarus, 1979), it is typically seen as dysfunctional (Sharma & Acharya, 1989).

Leiter (1991) conducted a study on 177 staff members of a mental health hospital to determine the predictive ability of control and escapist coping patterns on burnout. Subjects completed a coping pattern survey (Latack, 1986), the Maslach Burnout Inventory (Maslach & Jackson, 1981), the Organizational Commitment Questionnaire (Mowday, Steers, & Porter, 1975), and provided work environment information. Results indicated coping patterns affect the emotional and cognitive aspects of the burnout process rather than organizational commitment. Control coping, which consists of actions and cognitive reappraisals which are proactive, had an inverse relationship with burnout. Those who utilized control coping strategies reported lower scores on the burnout inventory. In contrast, escapist coping was

found to be an ineffective means of avoiding burnout. In fact, workers who used escapist strategies tended to have a higher level of exhaustion.

Additional studies have highlighted the differences between those who use problem-solving coping strategies versus avoidant coping strategies. Individuals who had used avoidant coping strategies have been found to exhibit higher levels of job anxiety (Sharma & Acharya, 1991), report greater suppressed anger and less externalization and control over anger (Sharma & Acharya, 1989), and to be more likely to experience ill mental health as a result of role stress (Srivastava & Singh, 1988).

The literature on problem-reappraisal coping, however, is not as conclusive. Long (1991) in a study of 132 managers (60 men and 72 women) found that both expressiveness and instrumentality were determinants of this type of coping. Expressiveness was defined as a cluster of behaviors that suggest warmth and nurturance, whereas instrumentality suggests competence, rationality, and assertiveness. Furthermore, Orlofsky and Stake (1981) have related the expressive dimension to greater social self-esteem and interpersonal skills. As a result of the nature of problem-reappraisal coping techniques, two benefits with respect to its usage were presented. First, due to the presence of both expressive and instrumental personality traits, an individual who utilizes problem-reappraisal coping is more likely to have greater flexibility with

respect to coping and have a greater coping repertoire. Secondly, because there is an emphasis on internal processes, the situational control of the environment is less apparent than in other forms of coping.

These findings are somewhat different than what was concluded from Bhagat, Allie, and Ford's (1991) examination of 276 teachers. In this study it was determined problem-solving coping strategies were much more effective in moderating the relationships between both organizational and personal life stress and life strain than emotion-focused (problem-reappraisal) coping strategies. It should be recognized, however, although emotion-focused was not the best moderator, it also did not have a negative effect on the stress-life strain relationship.

Hypotheses

The literature cited with respect to hardiness and coping strategies illustrates the importance of stress and proposes means by which it can be reduced. Although these constructs have been examined separately, it is the intent of this study to investigate their relationship and subsequent effect on perceived stress. Therefore, the following hypotheses are presented:

Hypothesis 1: The research on hardiness has shown this personality disposition has a buffering effect on stress. Consistent with these findings, it is hypothesized subjects who have a higher hardiness score will have a lower level of

perceived stress than those who have a lower hardiness score.

Hypothesis 2: The three coping strategies being measured in this study include active problem-solving, problem-reappraisal, and avoidance. The literature supports the benefits of utilizing active problem-solving and problem-reappraisal coping when confronting a stressful situation. Conversely, use of avoidant coping strategies has been found to be dysfunctional. Following these findings, it is hypothesized that individuals utilizing more active problem-solving and problem-reappraisal coping strategies will have a lower level of perceived stress than those utilizing more Avoidant coping strategies.

Hypothesis 3: This hypothesis is drawn from the previous two hypotheses. It has been proposed high hardiness and active problem-solving and problem-reappraisal will separately result in lower levels of perceived stress. Therefore, it is hypothesized subjects with a higher hardiness score will utilize significantly more active problem-solving and problem-reappraisal coping strategies and that subjects with a lower hardiness score will utilize significantly more avoidant coping strategies.

CHAPTER 2

Method

Sample

Subjects used in this study were drawn from two populations. The first sample consisted of 30 individuals who participated in the seminar "Towards Understanding Human Behavior and Motivation" conducted at the Menninger Management Institute located in Topeka, Kansas. This seminar is held several times throughout the year for both corporate and government executives. These executives come from a variety of institutions from around the world.

The second sample included 60 undergraduate psychology students at Emporia State University. Participation was solicited from various undergraduate psychology classes. These individuals received extra credit points which were applied to their final grade in the course.

Measures

Three questionnaires were employed in this study to test the hypotheses. These questionnaires assessed the level of perceived stress, types of coping techniques utilized, and cognitive hardiness for each individual. Demographic information was also obtained from an accompanying demographic profile sheet (Appendix A).

Perceived Stress

The Perceived Stress Scale (PSS; Cohen, Kamarack, & Mermelstein, 1983) is a 14 item questionnaire that taps the

degree to which situations are appraised as stressful by the individual (Appendix B). The items on this global measure of perceived stress are counterbalanced for desirability. Half of the questions indicate low stress while the remaining half indicate high stress. Subjects were asked to respond to each question by indicating how often, on a five-point scale from never to very often, they have felt or thought in the way indicated by the item. These items are designed to determine the degree to which subjects find their lives unpredictable, uncontrollable, and overloaded.

The PSS has demonstrated both concurrent and predictive validity by correlating with a wide range of self-report and behavioral criteria. In addition, the scale has adequate internal and test-retest reliability ranging from .85 to .55 with time intervals of two days and six weeks respectively (Cohen, Kamarack, & Mermelstein, 1983). Cohen (1986) also states that the PSS has significant predictive validity for a variety of health-related outcomes independent of physical and psychological symptomology.

Coping Strategies

Coping strategies were identified by utilizing a revised Ways of Coping Checklist (WCC) (Lazarus & Folkman, 1984). The WCC, located in Appendix C, was originally developed for use in a wide range of contexts not specific to the workplace. As a result, Long (1990) revised the scale to reflect coping strategies relevant to the work environment. The resulting modified WCC is comprised of 42

items divided into three scales (Avoidance, Problem-Reappraisal, and Active Problem-Solving). The first 17 items on this instrument related to avoidant coping strategies, the following 14 items were associated with problem-reappraisal strategies, and active problem-solving coping was represented by the final 11 items. Subjects were asked, on a four point scale ranging from zero to three, how often a particular coping strategy was utilized with respect to a specific stressor. A response of zero indicated a strategy was not utilized whereas a response of three indicated a strategy was used a great deal. Respective Cronbach's alphas of .85, .79, and .77 indicate acceptable internal consistency within each scale. The percentage of common variance for the scales are 35.7 (Avoidance), 33.6 (Problem-Reappraisal), and 30.7 (Active Problem-Solving).

Hardiness

The Personal Views Survey is a 50 rating scale used to measure the construct of Hardiness (Appendix D). A large pool of conceptually relevant items was factor analyzed to produce the questionnaire. The result is an instrument including items sharing the same format, discriminating respondents well, and producing discriminably different and reliable commitment, control, challenge, and composite hardiness scores. Subjects responded to each item by indicating the extent they agreed or disagreed with a given statement. Responses were recorded on a four point Likert scale ranging from "not at all true" to "completely true."

The alpha coefficients for the subscales and composite score are as follows: .917 (Commitment); .902 (Control; .894 (Challenge); and .924 (Composite). Also, test-retest reliability for the PVS is reported at .934 for a two week period. Finally, with respect to construct validity, the PVS is reported to replicate the major findings regarding the stress-illness relationship reported in the literature (S. Dane, personal communication, November 13, 1992).

Procedure

Sample 1: The "Towards Understanding Human Behavior and Motivation" seminar is a five day seminar beginning Sunday evening and concluding early Friday afternoon of the same week. At the beginning of the week seminar participants were given a binder with seminar materials enclosed. The questionnaire packet, which included an introduction letter (Appendix E), the questionnaires, a demographic profile sheet, and two informed consent statements (Appendix F), was placed in the side pocket of the seminar binder. On Monday morning, the study was explained to the seminar group and their participation was solicited. An informed consent statement was signed by those participating in the study. It was stressed that participation in the study was completely voluntary and anonymous and that subjects could withdraw at anytime. Subjects were given until the end of the seminar to complete the questionnaire. Given the pace of the seminar, it was

impractical to have the subjects complete the questionnaire at the time of its introduction.

Sample 2: Subjects from undergraduate psychology courses were solicited for participation in the study. A brief explanation of the study was presented and reiterated in the informed consent statement. Again, it was stressed participation was completely voluntary and subjects could withdraw from the study at any point. All subjects who participated in the study were required to complete an informed consent statement.

Statistical Analysis

The Personal Views Survey provides four scores for analysis. There are three separate scores for the sub-scales of control, commitment, and challenge and one composite hardiness score. Although the sub-scales of hardiness were available, only the composite hardiness score was analyzed to test the hypotheses. This was due to the proposition that hardiness is not an isolated element but rather an interactive compound (S. Dane, personal communication, November 13, 1992). Therefore, the sub-scales do not stand alone and are not intended to be used in such a way.

The Coping Strategies Checklist yielded an individual score for active problem-solving, problem-reappraisal, and avoidance. These three scores were utilized to test the proposed hypotheses. In addition, a total coping score was obtained by adding the scores from the three categories. Finally, the Perceived Stress Scale does not include sub-

scale scoring but rather produces a single score for the reported level of stress perceived by the individual.

Statistical Methods

Hypothesis 1: This hypothesis was concerned with the effect of Hardiness on perceived stress. Because there was one criterion variable and one predictor variable, both of which are continuous, a simple linear regression was the method of analysis.

Hypothesis 2: Because this hypothesis examined the effect of coping strategies on perceived stress, a more advanced method of analysis was necessary. Perceived stress, a continuous variable, was the only criterion variable. The three types of coping strategies were the predictor variables and they were also continuous. Therefore, multiple regression was used to test the hypothesis.

Hypothesis 3: Similar to hypothesis 2, this hypothesis employed the use of three predictor variables and one criterion variable, all of which are continuous. However, instead of perceived stress, the criterion variable was hardiness. The predictor variables were the three categories of coping strategies examined in hypothesis 2.

In addition to testing the proposed hypotheses, several statistical techniques were used to examine the data. First, various descriptive statistics were calculated in order to accurately identify the samples which participated in the study. Then, summary statistics and inter-

correlations of the measures utilized in the study were computed. Finally, five separate t-tests determined whether the executive and student populations differed with respect to perceived stress, hardiness, and the three coping strategies.

CHAPTER 3

Results

The total sample consisted of 30 executives and 60 undergraduate college students. The age range of the executives was from 30-54 with a mean of 42.5. This sample included 8 females and 22 males. Almost all of the executives, 97%, had at least a college degree. In fact, 67% of this group had an advanced degree. Finally, public organizations were represented by 14 executives while corporate organizations sent 16 executives.

Although males represented 73% of the executive population they only accounted for 25% of the student population (15 male, 45 female). The mean age of the student sample was 20.8 with a range of 18-39. Part-time jobs were held by 70% of this group with an average amount worked per week of 19 hours. Furthermore, 70% of this sample were in their freshman or sophomore year.

Descriptive statistics for perceived stress, hardiness, and the three coping strategies are presented in Table 1. Restriction of range was not a problem for any of the measures. This is evidenced by the observed ranges being quite similar to the possible ranges.

Table 2 displays the intercorrelations between

Table 1

Descriptive Statistics

Variables ^a	Mean	Standard Deviation	Observed Range	Possible Range
Perceived Stress	25.22	7.71	11-46	0-56
Avoidance	15.83	8.94	0-40	0-51
Problem-Reappraisal	20.90	6.87	5-33	0-42
Active Problem-Solving	13.93	7.90	1-31	0-33
Hardiness	73.57	9.57	36-96	0-100

^an=90 for all variables.

perceived stress, hardiness, and the three coping strategies. Perceived stress was negatively related to both hardiness and problem-reappraisal and positively related to avoidant coping strategies. Hardiness was negatively related to perceived stress and avoidance but positively related to problem-reappraisal. Finally, problem-reappraisal was negatively related to avoidance and positively related to active problem-solving. The correlations were in the expected direction with the exception of the active problem-solving dimension. It was expected that this variable would be positively related to hardiness and problem-reappraisal while being negatively related to perceived stress and avoidance. However, significance was only obtained for the positive relationship between active problem-solving and problem-reappraisal.

Before statistically testing the presented hypotheses, the two sample groups were examined in relation to each other. This was accomplished by running several t-tests on the student and executive groups. These groups were analyzed with respect to perceived stress, the coping subscales, and the hardiness composite. The results are listed in Table 3.

From this table the two groups only differed significantly with respect to the avoidance coping style.

Table 2

Intercorrelations Between Predictor and Criterion Variables

Variables ^a	1	2	3	4	5
1. Perceived Stress	---	---	---	---	---
2. Hardiness	-.508**	---	---	---	---
3. Avoidance	.675**	-.568**	---	---	---
4. Problem-Reappraisal	-.398**	.229*	-.193*	---	---
5. Active Prob-Solving	-.012	.005	.135	.262**	---

^a $n=90$ for all variables.

* $p<.05$; ** $p<.01$

Table 3

t-test Results for Student and Executive Groups

Variables ^a	Mean	SD	SE	F
Perceived Stress				
Student	27.10	7.23	.93	1.04
Executive	21.47	7.37	1.35	
Avoidance				
Student	18.73	9.04	1.17	3.03 [*]
Executive	10.03	5.20	.95	
Problem-Reappraisal				
Student	20.48	6.98	.90	1.09
Executive	21.73	6.69	1.22	
Active Prob-Solving				
Student	11.88	7.80	1.01	1.47
Executive	18.03	6.45	1.18	
Hardiness				
Student	71.06	9.57	1.24	1.64
Executive	78.59	7.46	1.36	

^an=90 for all variables.

^{*}p<.05

Specifically, students were more likely to use avoidant coping than executives. However, both groups were not significantly different on how they responded to the Perceived Stress Scale or the Personal Views Survey (hardiness questionnaire). Therefore, regression analyses were performed to test the proposed hypotheses.

Hypothesis 1: Subjects who have a higher hardiness score will have a lower level of perceived stress than those who have a lower hardiness score.

A regression analysis was performed to test this hypothesis. The predictor variable in this analysis was hardiness and the criterion variable was perceived stress. It was determined that individuals with a lower hardiness score reported higher levels of perceived stress (See Table 4). Furthermore, as evidenced by the adjusted R^2 , hardiness accounted for nearly 25% of the variance in perceived stress. These results supported hypothesis 1.

Hypothesis 2: Individuals utilizing more active problem-solving and problem-reappraisal coping strategies will have a lower level of perceived stress than those utilizing more avoidant coping strategies.

A multiple regression, in which the three coping strategies were the predictor variables and perceived stress was the criterion variable, was used to test this hypothesis

Table 4

Regression Analysis of Hardiness and Perceived Stress

Variable	R ²	ADJ R ²	F	Beta	T
Hardiness	.258	.249	32.59**	-.508	-5.53**

**p<.01

(See Table 5). First, coping strategies were found to predict a large portion of the variance in level of perceived stress. Specifically, the analysis yielded an adjusted R^2 of .515. These results are noteworthy in light of the analysis presented in Table 4. That is, hardiness was previously found to have accounted for nearly 25% of the variance in perceived stress.

In addition to accounting for a large portion of the variance in perceived stress, this analysis yielded partial support for the proposed hypothesis. That is, two types of coping strategies were found to predict high and low levels of perceived stress. Avoidant coping strategies were positively related to perceived stress whereas problem-reappraisal coping strategies were found to be negatively related. Active problem-solving, however, was not found to be significantly related to perceived stress. Therefore, higher levels of perceived stress are associated with the utilization of avoidant coping strategies. Conversely, lower levels of perceived stress are associated with the utilization of problem-reappraisal type coping strategies.

Hypothesis 3: Subjects with a higher hardiness score will utilize significantly more active problem-solving and problem-reappraisal coping strategies and subjects with a lower hardiness score will utilize significantly more avoidant coping strategies.

Table 5

Multiple Regression - Coping Strategies with Perceived Stress

Variables	R ²	ADJ R ²	F	Beta	T
	.531	.515	32.470**		
Active Problem-Solving				-.026	-.328
Avoidance				.627	8.168**
Problem-Reappraisal				-.270	-3.429**

**p<.01

A multiple regression analysis was performed to test this hypothesis. The three types of coping strategies were the predictor variables and hardiness was the criterion variable. While coping strategies were able to account for over 51% of the variance in perceived stress, they were again successful in predicting a significant proportion of the variance in hardiness scores. Again, the hypothesis was partially supported. Table 6 illustrates avoidant coping was negatively associated with hardiness. This was the only significant relationship found. Active problem-solving and problem-reappraisal were not found to be significantly related to hardiness. Therefore, the only portion of this hypothesis which was supported was individuals who are higher in hardiness are less likely to utilize avoidant coping strategies.

Summary of Results

An initial t-test indicated the two samples utilized in this study, the student and executive groups, were significantly different with respect to the use of avoidant coping strategies. The students reported a higher incidence of avoidant coping. With respect to perceived stress, active problem-solving, problem-reappraisal, and hardiness, the two groups were not significantly different.

Support for hypothesis one was obtained in that hardiness was negatively related to perceived stress. Hypotheses two

Table 6

Multiple Regression - Coping Strategies with Hardiness

Variables	R ²	ADJ R ²	F	Beta	T
	.340	.317	14.769**		
Active Problem-Solving				.051	.551
Avoidance				-.554	-6.088**
Problem-Reappraisal				.109	1.161

**p<.01

and three, however, were only partially supported through the use of multiple regression analysis. Specifically, hardiness and problem-reappraisal coping were negatively related to perceived stress. Avoidance, however, was positively related to perceived stress and negatively related to hardiness. Implications of the results are discussed in the following chapter.

CHAPTER 4

Summary and Discussion

The purpose of this study was to examine the effects of hardiness and coping strategies on perceived stress. Also, the relationship of hardiness and coping strategies was examined. The literature review shows support for the buffering effect of hardiness and certain coping strategies on perceived stress. However, the literature lacks the identification of coping strategies utilized by hardy individuals. This study includes results from executives and college students on measures of perceived stress, hardiness, and coping strategies.

Summary of Results

Multiple regression analyses were conducted to test three hypotheses. One hypothesis was fully supported while the remaining two received partial support. With respect to the relationship between hardiness and perceived stress, support was obtained in which lower hardiness was associated with higher perceived stress. These findings fall in line with the literature which states that hardiness acts as a stress buffer.

In regard to coping strategies, avoidant coping was negatively associated with perceived stress while problem-reappraisal was positively associated. Furthermore, avoidant coping was found to be negatively related to hardiness.

Limitations

The subjects in this study were drawn from two separate populations. Both samples could have been relatively homogenous. That is, the executive group was comprised of top level officials attending a personal growth seminar. Their age range was from 30 to 54 with a mean of 42.5. There were 22 male executives in attendance and eight female executives. Their level of education was extremely high with 97% obtaining at least a college degree. In addition, 67% of the executives have earned an advanced degree. These statistics, along with extensive work experience all the executives possess, may describe a group of individuals who are very similar to one another. However, the individuals belong to a variety of organizations, both public and private. Therefore, this variety of work experiences and responsibilities should limit the extent to which this group is homogenous.

The student population, which was drawn from two undergraduate Psychology courses, might also have been considered relatively homogeneous. The range of ages in this sample was 18 to 39 with a mean of 20.8. Most of the students, 70%, held at least a part time in which they worked an average of 19 hours per week. Furthermore, 70% of the students who participated were either in their freshman or sophomore year. While the executives may have experienced a number of different stressors in their respective organizations, the student population may have

experienced essentially the same stressors. That is, the students would most likely feel pressure from upcoming tests or the task of juggling work and school responsibilities. Therefore, within group variance may be more of an issue with the student population than with the executive group.

Another limitation may be with respect to the self-report measures used in this study. The level of perceived stress a person is experiencing or the strategies they think they utilize, for example, may be different than what is or has actually taken place. Although this may affect the generalizability of the results, it was the only practical way to complete this study.

A final limitation may be with respect to the combining of the two groups in the data analysis. Initial t-tests indicated the student population reported a significantly higher incidence of avoidant coping behavior than the executive group. Although this was the only significant difference between the groups it should be taken into account when interpreting the data.

Implications

The results of this study shed some light on the areas of hardiness, stress, and coping. The hardiness construct held up to the contention it acts as a stress buffer. That is, higher levels of perceived stress were associated with lower levels of hardiness. If this relationship is as pervasive as the literature purports, then perhaps training hardiness may be a worthwhile effort. In fact, in an

interview with Joshua Fischman, Salvatore Maddi presented an argument for the viability of hardiness training (Fischman, 1987). He stated, in a study involving a large midwestern telecommunications company, hardiness was enhanced through the teaching of several specific coping strategies. Individuals who completed the course reported higher levels of job satisfaction and showed an increased ability to manage the negative effects of mental strain.

The coping strategies presented in hardiness training center around three techniques: "situational reconstruction," "focusing," and "compensatory self-improvement." In situational reconstruction an individual is taught to think of alternative courses of action after the underlying assumptions that determine the stressfulness of a situation are recognized. This technique can be compared with the problem-reappraisal coping strategy presented in this study. For example, imagining a worst-case and best-case scenario was a strategy presented by Maddi. Similarly, in problem-reappraisal, an individual may attempt to examine the stressor from a different perspective in order to reduce its negative impact. In the present study, problem-reappraisal was negatively associated with perceived stress. Consequently, these results would support the use of situational reconstruction strategies in hardiness training.

The second coping technique presented is that of focusing on various bodily sensations and trying to recall under which circumstances they typically occur. These physical

reactions may act as clues in determining the cause of an individual's distress. Finally, if the first two techniques do not work because a situation cannot be changed, the individual is taught to utilize compensatory self-improvement. That is, another stressful situation which can be altered is identified and positive aspects about it are recognized. At the same time, an attempt is made to accept the unyielding nature of the original problem. Although S. Dane (personal communication, November 13, 1992) concurs on the effectiveness of hardiness training, empirical testing of the techniques is lacking in the literature.

Turning to the hardiness construct, it did hold up despite the use of a regression analysis. Funk and Houston (1987), as stated in the literature review, found some shortcomings with respect to hardiness research. One problem they cited was the use of inappropriate statistical techniques. Specifically, they stated that ANOVAs were conducted with hardiness as an independent variable. Therefore, hardiness, a continuous variable, had to be categorized. That is, two groups could be artificially obtained by classifying those who scored on the higher end of the hardiness scale into a high hardiness group and those who scored on the lower end into a low hardiness group. As a result, the data on those who scored somewhere in the middle was lost and not accounted for in the process. The loss of data and arbitrary cut-off points was argued to be a weakness in the statistical methodology utilized in

previous hardiness research. In this instance, however, hardiness was not categorized. The full range of scores were taken into account with the use of multiple regression analysis and a significant result was obtained.

As for coping strategies, it is somewhat a surprise that active problem-solving was not found to have a significant negative relationship to perceived stress. The literature consistently supports the benefits of utilizing these types of coping strategies with respect to the reduction of stress. In contrast, problem-reappraisal was found to have a significant negative relationship to perceived stress. This would indicate simply reappraising the situation cognitively may provide some relief to stressful situations. These results may be encouraging to those in situations where direct action is undesirable, or even impossible. In fact, cognitive reappraisal provides an attractive alternative to risking a confrontation with another or relying on direct action to allay a stressor.

A study by Smith and Sulsky (1992) may provide some insight into the results obtained for active problem solving with respect to perceived stress. These investigators administered questionnaires to 574 subjects from three different organizations. Workers reported using active coping strategies when confronted with several types of organizational stressors. While they did report the use of other types of coping, they did not indicate that their choice of strategy was dependent upon the particular

stressor at hand. Therefore, the authors concluded the workers may not need to be trained to implement certain coping strategies but rather trained to use certain strategies more effectively. Similarly, in this study, active coping was utilized but was apparently ineffective at reducing perceived stress. It appears that merely utilizing a coping strategy is not sufficient for reducing stress. A strategy must be used effectively and unsuccessful coping efforts must be managed properly.

Active problem-solving also failed to reach significance with respect to hardiness. Although this strategy and problem-reappraisal were expected to be positively related to hardiness, neither prediction was supported. However, the one coping strategy significantly related to both perceived stress and Hardiness was avoidance. Avoidance was positively related to perceived stress and negatively related to hardiness. This result would indicate that cognitively or physically escaping a problem is not an effective means of reducing stress. It should be recalled, however, the student population reported a significantly higher use of avoidance coping strategies. This tendency may have influenced the degree to which avoidance coping yielded significant results. Nonetheless, it can be tentatively concluded that problem-reappraisal coping should be encouraged and avoidance coping should be discouraged.

Suggestions for Future Research

Although there is an extensive amount of research on hardiness, stress, and coping, it is necessary to investigate the constructs further. Specifically, the situation in which a certain coping strategy is utilized should be taken into account. For example, one individual might report a set of coping strategies they used when they were faced with a deadline at work while another individual might report coping strategies they used after getting into an argument with their boss. In both cases the individuals may score high on a hardiness questionnaire but report very different coping strategies. Controlling for the stressful situation may provide more generalizable results.

Further, research should also examine the difference in type of coping strategies used by students and executives. In the present study, executives tended to use active problem coping more than avoidant coping. Their mean score for active problem solving was 18.03 as opposed to a mean of 10.03 for avoidance. In contrast, the student population exhibited a reversal of this tendency. Specifically, they scored an average of 11.88 for active problem solving and 18.73 for avoidance. In comparison, the mean scores for problem reappraisal, 20.28 for the student group and 21.73 for the executive group, were fairly similar.

The discrepancies with respect to the use of active versus avoidant coping may be the result of several factors. First, the student population may not have an equivalent

amount of active coping strategies available in their coping repertoire as compared to the executive group. The level of work experience the executive group has over the student group may have provided the executive group with the opportunity to acquire a more complex coping repertoire. In addition, the executive group had a mean age of 42.5 whereas the student group had a mean age of 20.8. Thus, available coping strategies may also be a function of age. That is, individuals may develop a more expansive coping system through life experiences as well as work experience.

Secondly, students may have active coping strategies available to them but may not know how and when they should be utilized. From each of these perspectives, training students with respect to active problem solving may be useful. Clearly, the mechanisms by which individuals obtain different types of coping strategies, and what affects their utilization, are areas in need of further investigation. The results of future research would have implications at both the academic and organizational levels.

In addition, it may be interesting to look at another measure of stress. In this study perceived stress was examined. Actual reported illness or stressful life events as indicated by an instrument such as the Holmes and Rahe (1967) Schedule of Recent Life Events would be of particular interest. This type of stress measure is found consistently in the stress and hardiness literature. In a number of

studies, individuals higher in hardiness were reported to have lower levels of stress related illness. Identifying the type of coping strategies hardy individuals utilize over a period of time that result in a lower level of illness is essential to explaining the hardiness construct. Past research has shown a relationship between this personality disposition and lower levels of stress related illness. Future research should examine the way these individuals act on or respond to their environment. By further examining the personality construct of hardiness and individual coping strategies, a more accurate explanation of stress reduction will unfold.

The results obtained from this line of research will have an impact in both the academic and organizational realms. Both advising and training can be enhanced by determining which coping strategies are most effective in certain situations. It may be premature to make generalizations about the negative effects of avoidance or the positive outcomes associated with active or reappraisal strategies. Instead there may be circumstances in which each may have a positive contribution. In addition, identifying how coping strategies are obtained and what affects their utilization and utility will aid in the development of individual coping repertoires. Having a more complex coping system may provide some individuals with options which were not available in the past for reducing stress. As a result,

examining the issues surrounding coping strategies and personality dispositions may not only provide useful information but practical applications as well.

REFERENCES

- Anderson, J., & Binstein, M. (1992, December 27). Business-busting 'Stress' claims. Washington Post, p. C7.
- Atkinson, J. M. (1988). Coping with stress at work. Wellingborough, England: Thorsons.
- Banks, J. K., & Gannon, L. R. (1988). The influence of hardiness on the relationship between stressors and psychosomatic symptomology. American Journal of Community Psychology, 16(1), 25-37.
- Bhagat, R. S., Allie, S. M., & Ford, D. L. (1991). Organizational stress, personal life stress and symptoms of life strains: An inquiry into the moderating role of styles of coping. Journal of Social Behavior and Personality, 6(7), 163-184.
- Billings, A. G., & Moos, R. H. (1981). The role of coping responses and social resources in attenuating the impact of stressful life events. Journal of Behavioral Medicine, 4, 139-157.
- Calise, A. K. (1993). WC mental-stress claims in decline. National Underwriter, 97(35), 3.
- Cohen, D. C., Kamarack, J. E., & Mermelstein, L. N. (1983). A global measure of perceived stress. Journal of Health and Social Behavior, 24, 385-396.

- Cohen, S. (1986). Contrasting the hassles scale and the perceived stress scale: Who's really measuring appraised stress? American Psychologist, 41(6), 716-718.
- Cox, T. (1978). Stress. Baltimore: University Park Press.
- Fischman, J. (1987, December). Getting tough. Psychology Today, pp. 26-28.
- Folkman, S. (1984). Personal control, stress, and coping processes: A theoretical analysis. Journal of Personality and Social Psychology, 46(4), 839-852.
- Folkman, S., & Lazarus, R. S. (1980). An analysis of coping in a middle-aged community sample. Journal of Health and Social Behavior, 21, 219-239.
- Funk, S. C., & Houston, B. K. (1987). A critical analysis of the Hardiness Scale's validity and utility. Journal of Personality and Social Psychology, 53(3), 572-578.
- Gal, R., & Lazarus, R. S. (1975). The role of activity in anticipation and confronting stressful situations. Journal of Human Stress, 2, 4-20.
- Gergen, K. J., & Morse, S. J. (1967). Self-consistency: Measurement & validation [Summary]. Proceedings of the 75th Annual Convention of the American Psychological Association, 2, 207-208.
- Hahn, M. E. (1966). California life goals evaluation schedules. Palo Alto, CA: Western Psychological Services.
- Harris, R. B. (1989). Reviewing nursing stress according to a proposed coping-adoption framework. Advances in Nursing Science, 11(2), 12-27.

- Holahan, C. H., & Moos, R. H. (1987). Personal and contextual determinants of coping strategies. Journal of Personality and Social Psychology, 52, 946-955.
- Holmes, T. H., & Rahe, R. H. (1967). The social readjustment rating scale. Journal of Psychosomatic Research, 11, 213-218.
- Hull, J. G., Van Treuren, R. R., & Virnelli, S. (1987). Hardiness and health: A critique and alternative approach. Journal of Personality and Social Psychology, 53(3), 518-530.
- Jackson, D. N. (1974). Personality research form manual. Goshen, NY: Research Psychologists Press.
- Klarreich, S. H. (1990). Work without stress. New York: Brunner-Mazel.
- Kobasa, S. C. (1979). Stressful life events, personality, and health: An inquiry into hardiness. Journal of Personality and Social Psychology, 37, 1-11.
- Kobasa, S. C. (1982a). The hardy personality: Toward a social psychology of stress and health. In G. S. Sanders & J. Suls (Eds.), Social psychology of health and illness (pp. 136-152). Hillsdale, NJ: Erlbaum.
- Kobasa, S. C. (1982b). Commitment and coping in stress resistance among lawyers. Journal of Personality and Social Psychology, 42(4), 707-717.
- Kobasa, S. C. (1984, September). Test for hardiness: How much can you survive? American Health, pp. 64-77.

- Kobasa, S. C., Maddi, S. R., & Kahn, S. (1982). Hardiness and health: A prospective study. Journal of Personality and Social Psychology, 42(1), 168-177.
- Latack, J. C. (1984). Career transitions within organizations: An exploratory study of work, nonwork and coping strategies. Organizational Behavior and Human Performance, 34, 296-322.
- Latack, J. C. (1986). Coping with job stress: Measures and future directions for scale development. Journal of Applied Psychology, 71(3), 377-385.
- Lazarus, R. S. (1966). Psychological stress and the coping process. New York: McGraw-Hill.
- Lazarus, R. S. (1979). Positive denial: The case for not facing reality. Psychology Today, November, 47-60.
- Lazarus, R. S., & Folkman, S. (1984). Stress, appraisal, and coping. New York: Springer.
- Lefcourt, H. M. (1973). The function of the illusions of control and freedom. American Psychologist, 28, 417-425.
- Leiter, M. (1991). Coping patterns as predictors of burnout: The function of control and escapist coping patterns. Journal of Organizational Behavior, 12(2), 123-144.
- Long, B. C. (1991). Relation between coping strategies, sex-typed traits, and environmental characteristics: A comparison of male and female managers. Journal of Counseling Psychology, 37(2), 185-194.

- Maddi, S. R., Kobasa, S. C., & Hoover, M. (1979). An alienation test. Journal of Humanistic Psychology, 19, 73-76.
- Manning, M. R., Williams, R. F., & Wolfe, D. M. (1988). Hardiness and the relationship between stressors and outcomes. Work and Stress, 2(3), 205-216.
- Maslach, C., & Jackson, S. E. (1981). The measurement of experienced burnout. Journal of Occupational Behavior, 9, 297-308.
- Matteson, M. T. (1987). Individual-organizational relationships: Implications for preventing job stress and burnout. In J. C. Quick, R. S. Bhagat, J. E. Dalton, & J. D. Quick (Eds.), Work stress: Health care systems in the workplace (pp. 156-170). New York: Praeger.
- McCranie, E. W., Lambert, V. A., & Lambert, C. E. (1987). Work stress, hardiness, and burnout among hospital staff nurses. Nursing Research, 36(6), 374-378.
- McLaughlin, M., Cormier, L. S., & Cormier, W. H. (1988). Relation between coping strategies and distress, stress, and marital adjustment of multiple-role women. Journal of Counseling Psychology, 35, 187-193.
- Menaghan, E. (1982). Measuring coping effectiveness: A panel analysis of marital problems and coping efforts. Journal of Health and Social Behavior, 23, 220-234.
- Mental stress claims show decline. (1993). Occupational Hazards, 55(10), 61-62.

- Moos, R. H., & Billings, A. G. (1982). Conceptualizing and measuring coping resources and processes. In L. Goldberg & S. Breznitz (Eds.). Handbook of stress: Theoretical and clinical aspects (pp. 221-247). New York: Free Press.
- Moss, L. (1981). Managing stress. Reading, MA: Addison-Wesley.
- Mowday, R. T., Steers, R. M., & Porter, C. W. (1975). The measurement of organizational commitment. Journal of Vocational Behavior, 14, 244-247.
- Nakano, K. (1990). Hardiness, Type A behavior, and physical symptoms in a Japanese sample. Journal of Nervous and Mental Disease, 178(1), 52-56.
- Nowack, K. M. (1986). Type A, hardiness, and psychological distress. Journal of Behavioral Medicine, 9(6), 537-548.
- Orlofsky, J. L., & Stake, J. E. (1981). Psychological masculinity and femininity: Relationship to striving and self-concept in the achievement and interpersonal domains. Psychology of Women Quarterly, 6(2), 218-233.
- Osipow, S. H., & Davis, A. S. (1988). The relationship of coping resources to occupational stress and strain. Journal of Vocational Behavior, 32, 1-15.
- Pierce, C. M., & Molloy, G. N. (1990). Psychological and biographical differences between secondary school teachers experiencing high and low levels of burnout. British Journal of Educational Psychology, 60(1), 37-51.
- Quick, J. C., & Quick, J. D. (1984). Organizational stress and preventive management. New York: McGraw-Hill.

- Rich, V. L., & Rich, A. R. (1987). Personality hardiness and burnout in female staff nurses. Image Journal of Nursing Scholarship, 19(2), 63-66.
- Rotter, J. B., Seeman, M., & Liverant, S. (1962). Internal vs. external locus of control of reinforcement: A major variable in behavior theory. In N. F. Washburne (Ed.), Decisions, values, and groups (pp. 72-81). London: Pergamon.
- Schlosser, M. B., & Sheeley, L. A. (1985, August). The hardy personality: Females coping with stress. Paper presented at the annual convention of the American Psychological Association, Los Angeles.
- Selye, H. (1974). Stress without distress. New York: J. B. Lippincott.
- Sharma, S., & Acharya, T. (1989). Coping strategies and anger expression. Journal of Personality and Clinical Studies, 5(1), 15-18.
- Sharma, S., & Acharya, T. (1991). Coping strategies and job anxiety. Psychological Studies, 36(2), 112-117.
- Smith, C. S. & Sulsky, L. M. (1992). Investigation of job-related coping strategies across multiple stressors and samples. Paper presented at the A.P.A.-N.I.O.S.H. Conference: Stress in the 90's: A Changing Workforce in a Changing Workplace, Washington, D.C.

- Srivastava, A. K., & Singh, H. S. (1988). Modifying effects of coping strategies on the relation of organizational role stress and mental health. Psychological Reports, 62(3), 1007-1009.
- Weitz, J. (1970). Psychological research needs on the problems of human stress. In J. E. McGrath (Ed.), Social and psychological factors in stress (pp. 38-53). New York: Holt, Rinehart, and Winston.
- Wiebe, D. J. (1991). Hardiness and stress moderation: A test of proposed mechanisms. Journal of Personality and Social Psychology, 60(1), 89-99.
- Wiggins, J. S. (1973). Personality and prediction: Principles of personality assessment. Reading, MA: Addison-Wesley.
- Worldwide stress. (1993). Employment Bulletin & Industrial Relations Digest, 9(1), 6.
- Wyler, A. R., Masuda, M., & Holmes, T. H. (1968). Seriousness of illness rating scale. Journal of Psychosomatic Research, 11, 363-375.
- Zich, J., & Temoshok, L. (1987). Perceptions of social support in men with AIDS and ARC: Relationships with distress and hardiness. Journal of Applied Social Psychology, 17(3), 193-215.

APPENDICES

APPENDIX A

DEMOGRAPHIC PROFILE SHEET

DEMOGRAPHIC PROFILE

Please provide the following information about yourself and your organization.

1. Sex: Male [] Female []

2. Age: _____

3. Race: Black [] Hispanic []
 White [] American Indian []
 Asian [] Other _____

4. Level of Education: Grade School [] High School []
 College [] Advanced Degree []

5. Marital Status: Single [] Married []
 Separated [] Divorced []

5. Job Title: _____

6. Total Number of Employees in Your Organization: _____

7. Total Number of Individuals You Directly Supervise: _____

8. Classification of Your Organization: Government []
 Corporate []

DEMOGRAPHIC PROFILE

Please provide the following information about yourself.

1. Sex: Male [] Female []

2. Age: _____

3. Race: Black [] Hispanic []
 White [] American Indian []
 Asian [] Other _____

4. Level of Education: Freshman [] Sophomore []
 Junior [] Senior []
 Graduate []

5. Number of Hours Enrolled: _____

6. Marital Status: Single [] Married []
 Separated [] Divorced []

7. Present Employment Status: Part-time [] Full-time []
 Not Presently Employed []

8. Location of Employer: On campus [] Off campus []

9. Average Number of Hours Worked per Week: _____

APPENDIX B

PERCEIVED STRESS SCALE

PERCEIVED STRESS SCALE

The questions in this scale ask you about your feelings and thoughts during the last month. In each case, you will be asked to indicate how often you felt or thought a certain way. Although some of the questions are similar, there are differences between them and you should treat each one as a separate question. The best approach is to answer each question fairly quickly. That is, don't try to count up the number of times you felt a particular way, but rather indicate the alternative that seems like a reasonable estimate.

1. In the last month, how often have you been upset because of something that happened unexpectedly?

0	1	2	3	4
never	almost never	sometimes	fairly often	very often

2. In the last month, how often have you felt that you were unable to control the important things in your life?

0	1	2	3	4
never	almost never	sometimes	fairly often	very often

3. In the last month, how often have you felt nervous and "stressed"?

0	1	2	3	4
never	almost never	sometimes	fairly often	very often

4. In the last month, how often have you dealt successfully with irritating life hassles?

0	1	2	3	4
never	almost never	sometimes	fairly often	very often

5. In the last month, how often have you felt that you were effectively coping with important changes that were occurring in your life?

0	1	2	3	4
never	almost never	sometimes	fairly often	very often

6. In the last month, how often have you felt confident about your ability to handle your personal problems?

0	1	2	3	4
never	almost never	sometimes	fairly often	very often

7. In the last month, how often have you felt that things were going your way?
- | | | | | |
|-------|--------------|-----------|--------------|------------|
| 0 | 1 | 2 | 3 | 4 |
| never | almost never | sometimes | fairly often | very often |
8. In the last month, how often have you felt that you could not cope with all the things that you had to do?
- | | | | | |
|-------|--------------|-----------|--------------|------------|
| 0 | 1 | 2 | 3 | 4 |
| never | almost never | sometimes | fairly often | very often |
9. In the last month, how often have you been able to control irritations in your life?
- | | | | | |
|-------|--------------|-----------|--------------|------------|
| 0 | 1 | 2 | 3 | 4 |
| never | almost never | sometimes | fairly often | very often |
10. In the last month, how often have you felt that you were on top of things?
- | | | | | |
|-------|--------------|-----------|--------------|------------|
| 0 | 1 | 2 | 3 | 4 |
| never | almost never | sometimes | fairly often | very often |
11. In the last month, how often have you been angered because of things that happened that were outside of your control?
- | | | | | |
|-------|--------------|-----------|--------------|------------|
| 0 | 1 | 2 | 3 | 4 |
| never | almost never | sometimes | fairly often | very often |
12. In the last month, how often have you found yourself thinking about things that you have to accomplish?
- | | | | | |
|-------|--------------|-----------|--------------|------------|
| 0 | 1 | 2 | 3 | 4 |
| never | almost never | sometimes | fairly often | very often |
13. In the last month, how often have you been able to control the way you spend your time?
- | | | | | |
|-------|--------------|-----------|--------------|------------|
| 0 | 1 | 2 | 3 | 4 |
| never | almost never | sometimes | fairly often | very often |
14. In the last month, how often have you felt difficulties were piling up so high that you could not overcome them?
- | | | | | |
|-------|--------------|-----------|--------------|------------|
| 0 | 1 | 2 | 3 | 4 |
| never | almost never | sometimes | fairly often | very often |

APPENDIX C

COPING STRATEGIES CHECKLIST

COPING STRATEGIES CHECKLIST

Please give a general description of the primary work related stressor that you have experienced during the previous two weeks.

Please read each item below and indicate, by circling the appropriate category, to what extent you used it in the situation you have just described.

- 0 = not used
- 1 = used somewhat
- 2 = used quite a bit
- 3 = used a great deal

1. Left work as soon as possible.	0	1	2	3
2. Criticized or lectured myself.	0	1	2	3
3. Hoped a miracle would happen.	0	1	2	3
4. Went along with fate; sometimes I just have bad luck.	0	1	2	3
5. Slept more than usual.	0	1	2	3
6. I tried to forget the whole thing.	0	1	2	3
7. Tried to make myself feel better by eating, drinking smoking, using drugs or medication, etc.	0	1	2	3
8. Took it out on other people.	0	1	2	3
9. Wished that I could change what happened or how I felt.	0	1	2	3
10. I daydreamed or imagined a better time or place than the one I was in.	0	1	2	3
11. Wished that the situation would go away or somehow be over with.	0	1	2	3
12. Had fantasies or wishes about how things might turn out.	0	1	2	3

0 = not used
 1 = used somewhat
 2 = used quite a bit
 3 = used a great deal

13. Had a good cry.	0	1	2	3
14. Expressed my irritation and frustration to myself.	0	1	2	3
15. Avoided being with people in general.	0	1	2	3
16. Avoided other staff members.	0	1	2	3
17. Expressed my irritation and frustration by swearing, slamming things down, crumpling paper, etc.	0	1	2	3
18. Just concentrated on what I had to do next; the next step.	0	1	2	3
19. Forgot work when I finished for the day.	0	1	2	3
20. Looked for the silver lining, so to speak; tried to look on the bright side of things.	0	1	2	3
21. Didn't let it get to me; refused to think too much about it.	0	1	2	3
22. Made light of the situation; refused to get too serious about it.	0	1	2	3
23. Just accepted that it was another job, and got on with it.	0	1	2	3
24. I tried to keep my feelings from interfering with other things too much.	0	1	2	3
25. Simply took one day at a time.	0	1	2	3
26. Tried to be very organized so that I could keep on top of things.	0	1	2	3
27. Tried to see this as an opportunity to learn new skills.	0	1	2	3
28. Put extra attention on planning and scheduling.	0	1	2	3
29. Thought of myself as a winner-someone who always comes through.	0	1	2	3

0 = not used
1 = used somewhat
2 = used quite a bit
3 = used a great deal

30.	Thought how much better things are for me compared to the past or to my peers.	0	1	2	3
31.	Established some sort of routine.	0	1	2	3
32.	Talked the problem over with colleagues.	0	1	2	3
33.	Tried to get the person responsible to change his or her mind.	0	1	2	3
34.	Talked to someone to find out more about the situation.	0	1	2	3
35.	Confronted my supervisor with problems.	0	1	2	3
36.	Talked to someone who could do something concrete about the problem.	0	1	2	3
37.	Took a big chance or did something very risky.	0	1	2	3
38.	Talked to someone about how I was feeling.	0	1	2	3
39.	Stood my ground and fought for what I wanted.	0	1	2	3
40.	Came up with a couple of different solutions to the problem.	0	1	2	3
41.	I went over in my mind what I would say or do.	0	1	2	3
42.	I thought about how a person I admired would handle this situation and used that as a model.	0	1	2	3

APPENDIX D

PERSONAL VIEWS SURVEY

PERSONAL VIEWS SURVEY

Below are some items that you may agree or disagree with. Please indicate how you feel about each one by circling a number from 0 to 3 in the space provided. A zero indicates that you feel the statement is not at all true; circling a *three* means that you feel the item is completely true.

As you will see, many of the items are worded very strongly. This is to help you decide the extent to which you agree or disagree.

Please read all the items carefully. Be sure to answer all on the basis of the way you feel now. Don't spend too much time on any one item.

- 0 = Not at all true
- 1 = A little true
- 2 = Quite a bit true
- 3 = Completely true

- | | | | | |
|---|---|---|---|---|
| 1. I often wake up eager to take up my life where it left off the day before..... | 0 | 1 | 2 | 3 |
| 2. I like a lot of variety in my work. | 0 | 1 | 2 | 3 |
| 3. Most of the time, my bosses or superiors will listen to what I have to say..... | 0 | 1 | 2 | 3 |
| 4. Planning ahead can help avoid most future problems..... | 0 | 1 | 2 | 3 |
| 5. I usually feel that I can change what might happen tomorrow, by what I do today .. | 0 | 1 | 2 | 3 |
| 6. I feel uncomfortable if I have to make any changes in my everyday schedule | 0 | 1 | 2 | 3 |
| 7. No matter how hard I try, my efforts will accomplish nothing | 0 | 1 | 2 | 3 |
| 8. I find it difficult to imagine getting excited about working | 0 | 1 | 2 | 3 |
| 9. No matter what you do, the "tried and true" ways are always the best | 0 | 1 | 2 | 3 |
| 10. I feel that it's almost impossible to change my spouse's mind about something | 0 | 1 | 2 | 3 |
| 11. Most people who work for a living are just manipulated by their bosses..... | 0 | 1 | 2 | 3 |
| 12. New laws shouldn't be made if they hurt a person's income | 0 | 1 | 2 | 3 |
| 13. When you marry and have children you have lost your freedom of choice..... | 0 | 1 | 2 | 3 |
| 14. No matter how hard you work, you never really seem to reach your goals..... | 0 | 1 | 2 | 3 |
| 15. A person whose mind seldom changes can usually be depended on to have
reliable judgment..... | 0 | 1 | 2 | 3 |
| 16. I believe most of what happens in life is just meant to happen | 0 | 1 | 2 | 3 |
| 17. It doesn't matter if you work hard at your job, since only the bosses profit
by it anyway | 0 | 1 | 2 | 3 |
| 18. I don't like conversations when others are confused about what they mean to say .. | 0 | 1 | 2 | 3 |
| 19. Most of the time it just doesn't pay to try hard, since things never turn
out right anyway | 0 | 1 | 2 | 3 |
| 20. The most exciting thing for me is my own fantasies..... | 0 | 1 | 2 | 3 |

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information, Please contact

Dr. Skip Dane
The Hardiness Institute
P.O. Box 2119
Casper, Wyoming 82602-2119

0 = Not at all true
 1 = A little true
 2 = Quite a bit true
 3 = Completely true

- 21. I won't answer a person's questions until I am very clear as to what he is asking. . . . 0 1 2 3
- 22. When I make plans I'm certain I can make them work 0 1 2 3
- 23. I really look forward to my work 0 1 2 3
- 24. It doesn't bother me to step aside for a while from something I'm involved in,
 if I'm asked to do something else 0 1 2 3
- 25. When performing a difficult task at work, I know when I need to ask for help 0 1 2 3
- 26. It's exciting for me to learn something about myself 0 1 2 3
- 27. I enjoy being with people who are unpredictable. 0 1 2 3
- 28. I find it's usually very hard to change a friend's mind about something. 0 1 2 3
- 29. Thinking of yourself as a free person just makes you feel frustrated and unhappy . . 0 1 2 3
- 30. It bothers me when something unexpected interrupts my daily routine 0 1 2 3
- 31. When I make a mistake, there's very little I can do to make things right again. . . . 0 1 2 3
- 32. I feel no need to try my best at work, since it makes no difference anyway 0 1 2 3
- 33. I respect rules because they guide me 0 1 2 3
- 34. One of the best ways to handle most problems is just not to think about them 0 1 2 3
- 35. I believe that most athletes are just born good at sports. 0 1 2 3
- 36. I don't like things to be uncertain or unpredictable. 0 1 2 3
- 37. People who do their best should get full financial support from society 0 1 2 3
- 38. Most of my life gets wasted doing things that don't mean anything 0 1 2 3
- 39. Lots of times I don't really know my own mind 0 1 2 3
- 40. I have no use for theories that are not closely tied to the facts 0 1 2 3
- 41. Ordinary work is just too boring to be worth doing. 0 1 2 3
- 42. When other people get angry at me, it's usually for no good reason 0 1 2 3
- 43. Changes in routine bother me. 0 1 2 3
- 44. I find it hard to believe people who tell me that the work they do is
 of value to society 0 1 2 3
- 45. I feel that if someone tries to hurt me, there's usually not much I can do
 to try and stop him 0 1 2 3
- 46. Most days, life just isn't very exciting for me. 0 1 2 3
- 47. I think people believe in individuality only to impress others. 0 1 2 3
- 48. When I'm reprimanded at work, it usually seems to be unjustified. 0 1 2 3
- 49. I want to be sure someone will take care of me when I get old 0 1 2 3
- 50. Politicians run our lives 0 1 2 3

APPENDIX E

INTRODUCTION LETTER

Dear Seminar Participant:

I am a graduate student at Emporia State University working on my Master's degree in Industrial/Organizational Psychology. As partial fulfillment of my degree requirements I am conducting a research project for which I am requesting your participation.

This study is intended to examine cognitive hardiness and coping strategies in corporate and government executives. The information obtained may provide some very useful insight into how individuals deal with stress. If you are willing to participate you will be required to complete an informed consent document, three short questionnaires, and a brief demographic profile. The only document which will have your name associated with it is the informed consent document, which will be collected separately from the remaining materials. This study has been designed to protect your privacy and the confidentiality of your responses to the fullest extent possible. Your honest answers to every question and statement are appreciated.

To receive an abstract of the study, including results, please check the last line of the informed consent document. If there are any questions regarding any aspect of this study please call me at 913-842-7639 or direct your inquiry to an MMI faculty member. In addition, I will be checking in throughout the seminar week to provide assistance.

Thank you very much for your effort and consideration in this matter. I hope you have a very enjoyable and enlightening seminar week!

Sincerely,

Paul Marquardt

APPENDIX F

INFORMED CONSENT STATEMENT

STATEMENT OF INFORMED CONSENT

Emporia State University supports the practice of protection for human subjects participating in research and related activities. The following information is provided so that you can decide whether you wish to participate in the present study. You should be aware that even if you agree to participate, you are free to withdraw at any time, and that if you do withdraw from the study, you will not be subjected to reprimand or any other form of reproach.

A research project on cognitive hardiness, coping strategies, and perceived stress is being conducted by Paul Marquardt in partial fulfillment of a Master's degree in Industrial/Organizational Psychology. The purpose of this study is to examine the relationship between hardiness, coping strategies, and perceived stress. If you wish to participate in this study, you will be asked to fill out a demographic profile sheet and three short questionnaires relating to personal views, coping strategies, and perceived stress. It will take approximately 30 minutes to complete the materials.

Benefits you can expect to gain from this study could include an increased knowledge of the coping strategies you utilize and how these and personality types can effect stress. However, completing the questionnaires may produce some frustration and/or anxiety. Please do not hesitate to contact the researcher or a member of the Menninger staff if you have any questions or concerns relating to the study. You may also contact the chairperson of the Menninger Institutional Review Board at (913) 273-7500 or (800) 288-0317 if you have any questions regarding your rights as a research subject.

Your participation is solicited, but strictly voluntary. Do not hesitate to ask any questions about the study. Be assured that your name will not be associated in any way with the research findings. We appreciate your cooperation very much.

Sincerely,

Paul Marquardt
(913) 842-7639

"I have read the above statement and have been fully advised of the procedures to be used in this project. I have been given sufficient opportunity to ask any questions I had concerning the procedures and possible risks involved. I understand the potential risks involved and I assume them voluntarily. I likewise understand that I can withdraw from the study at any time without being subjected to reproach. Furthermore, my signature on this consent form does not obligate me to complete the study or release the Menninger Clinic or research staff from possible legal responsibility."

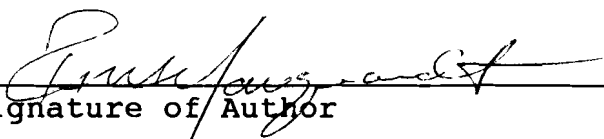
Please sign and return one of the consent forms. Keep the other copy for your records.

Signature of subject

Date

___ Please check if you would like a copy of the research results.

I, Paul A. Marquardt, hereby submit this thesis to Emporia State University as partial fulfillment of the requirements for an advanced degree. I agree that the Library of the University may make it available for use in accordance with its regulations governing this type of material. I further agree that quoting, photocopying, or other reproduction of this document is allowed for private study, scholarship (including teaching) and research purposes of a nonprofit nature. No copying which involves potential financial gain will be allowed without written permission from the author.



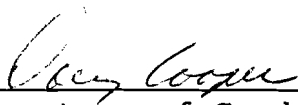
Signature of Author

July 27, 1994

Date

The Effects of Hardiness and
Coping Strategies on Perceived Stress

Title of Thesis



Signature of Graduate Office Staff Member

July 27, 1994

Date Received