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An enquiry into self-monitoring:
its relationships to physical illness
and psychological distress.

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Abstract

High levels of stress have long been held to be detrimental to individual organizational members' productivity, effectiveness and personal health. The environment of the certified public accountant (CPA), in particular, has been characterized as being stressful but has as yet been subjected to only limited research scrutiny. The purpose of this study is to examine CPAs and the environment in which they work to ascertain whether the individual characteristic of self-monitoring is related to health in the presence of felt work and general life stress. Empirical results suggest work stress dominates life stress in its relationships with both physical illness and psychological distress. High self-monitors, in turn, report greater incidence of physical illness in the presence of work stress than do low self-monitors. However, comparable effects are not noted for psychological distress symptoms. In the latter situation, an interaction of life stress and work stress is found to be related to psychological distress. Implications for both CPA practitioners and academic researchers arising from this inquiry are examined.

An Inquiry into Self-Monitoring: Its Relationships to Physical Illness and Psychological Distress

Introduction

The linkage between stress and illness has been well researched. Much is yet to be learned, however, from further consideration of individual difference variables which may make individuals more susceptible to the debilitating effects of stress. This study considers one such variable, self-monitoring--the degree to which individuals in social settings manage and control expressive presentation. The research question is whether self-monitoring is related to the physical illness and psychological distress experienced by practitioners in a potentially high stress environment -- the public accounting profession. Data were gathered from 100 certified public accountants concerning self-monitoring, work stress, life stress (recent life events) and physical illness and psychological distress. Results indicate that physical illness is related to work stress and the interaction of work stress and self-monitoring. Psychological distress, in comparison, is related to work stress and, to a lesser degree, the interaction of work and life stress.

This paper is organized into the following major sections: literature review, research study, model and hypotheses, research methods, results and discussion, and conclusions.

Literature Review

Much research has been conducted concerning the relationship between stress and illness (Beehr & Newman, 1978; Cooper & Marshall, 1976; Pearlin, Lieberman, Menaghan, & Mullan, 1981). For the purpose of this research, stress is considered as a "person-environment" fit variable (French & Caplan, 1972; Harrison, 1978). Consistent with this perspective, stress is interpreted as a psychological process involving the inner thoughts of individuals who perceive threats to their physical or psychological abilities which are directed at responding to environmental demands. For these purposes, the environment encompasses both occupational and general life situations and demands.

Prior research has suggested a close linkage between general life stress and health impairment (Holmes & Rahe, 1967; Johnson & Sarason, 1978; Rabkin & Streuning, 1976). General life stress in turn has been defined as the "objective events that disrupt or threaten to disrupt the individual's usual activities" (B.P. Dohrenwend & B.S. Dohrenwend, 1969, p. 133) such as marriage, divorce, death of a loved one.

Extensive research has also been conducted concerning work or occupational

stress, defined as a self-perceived imbalance between personal capabilities and job demands (Beehr & Love, 1980; Cooper & Marshall, 1978; Jackson & Schuler, 1985; Kahn, 1973; Van Sell, Brief, & Schuler, 1981). Again, the linkage between stress and illness has been well documented.

Studies have been done on stresses of auditors and accountants (Choo, 1986; Collins & Killough, 1989; Ferris, 1977; Gaertner & Ruhe, 1981; and Senatra, 1980). With minor exception, most of this research has dealt with the issues of overtime work, client demands, travel, etc. Very little of this work has considered physical illness or psychological impairment as they may relate to stress.

Prior research studies relating to stress and illness have also considered intervening or mediating variables (Antonovsky, 1979 and 1987; Johnson & Sarason, 1978; Kobasa, 1979; Lefcourt, 1980; and Matthews, 1982). Among other variables, these works have examined personality characteristics, social support, constitutional predisposition health practices, and coping technique. However, the effect of self-monitoring has not received research scrutiny despite its potentially strong relationship to the concepts of stress and illness. The current study fills this void by combining consideration of the mediating variable of self-monitoring with work and general life stress as related to the health of certified public accountants.

Research Study

For purposes of the current analysis self-monitoring is conceptualized as an individual difference variable defining the degree to which individuals in various social settings manage and control expressive (verbal and non-verbal) presentation (Snyder, 1974, 1979, and 1986). Low self-monitors were thought to act in accordance with their inner feelings whereas high self-monitors were thought to generally act in accordance with situational demands--the way they believed others would have them act. High self-monitors would mask their internal emotional states to a greater degree than would low self-monitors. Further, high self-monitors would monitor their expressive channels (voice, posture, facial expression) to ensure consistency across modalities.

It is possible that knowledge of the self-monitoring characteristic would provide insights into individuals' reactions in stressful circumstances. The low self-monitor might be expected to express feelings of being stressed whereas the high self-monitor would attempt to stifle expression of such feelings if they were not considered appropriate. To monitor expressive modes so as to mask underlying feelings might require greater psychic and physical energy for the high self-monitor, eventually

resulting in physical illness or psychological distress.

Research evidence suggests that internalization in contrast to outward expression of emotion is related to physical illness, specifically the incidence of cancer (Kissen, 1963; Dattore, Shontz & Coyne, 1980; Taylor, Abrams & Hewstone, 1988; Eysenck, 1988). The findings generally support the contention that it is better not to internalize feelings of emotional trauma. This notion of masking or stifling emotional expression appears analogous to the actions of the high self-monitor, and this research is based in part on the premise that self-monitoring is a proxy for, or is related to, emotional expression, and, therefore, may be expected to be associated with physical illness and psychological distress.

Model and Hypotheses

The hypotheses concerning the relationships among self-monitoring, stress and illness are as follows:

H1: Accountants reporting high stress will report greater physical illness than those reporting low stress.

H2: Low self-monitoring accountants experiencing high stress will report fewer physical illness symptoms than will high self-monitoring accountants.

H3: Accountants reporting high stress will report greater psychological distress symptoms than those reporting low stress.

H4: Low self-monitoring accountants experiencing high stress will report fewer psychological distress symptoms than will high self-monitoring accountants.

For lack of prior theoretical or empirical study, this research does not posit differential effects of work or life stress on either accountants' physical or psychological well-being.

Definitions and measures of dependent and independent variables are as follows:

Dependent Variables:

I. Physical Illness. The symptom and illness checklist (Chemers, Hays, Rhodewalt & Wysocki, 1985) is a measure for physical illness and included a listing of health problems in seven major categories which have been found to be associated with stress (e.g., hypertension, backpain, infectious disease, etc.). The checklist covered health problems encountered over the prior six months. A simple sum of reported problems comprises the measure of physical illness.

II. Psychological Distress. The Langner scale (Langner, 1962) is a 22-item epidemiological inventory measuring psychological distress, i.e., anxiety, depression,

psychosomatic illness. Scores from 0-3 are considered in the normal range, 4-7 reflect some distress, while scores over 7 are usually associated with serious distress. A sum of items scored as significant comprises the psychological distress measure.

Independent Variables:

I. Self-monitoring. This 25-item scale (Snyder, 1974), which asked questions about the way a person acts in social settings, is a measure of self-monitoring. The 25 true-false items were summed to derive an overall measure of self-monitoring. Because Snyder's work with self-monitoring suggests that it is a categorical variable, individuals were classified as either high or low self-monitors based on a median split of 11 (11 and below, low; 12 and above, high). II. Work Stress. Measures of perceived stress with subordinates, with co-workers, and with task, were summed to derive an overall job stress measure. The 20-item Likert scaled (1 to 5, none to significant stress) instrument was adapted from Fiedler, Potter, Zais & Knowlton (1979). The items reflect facets of quantitative role overload, role ambiguity, and role conflict. Items dealing with stress with superiors (an additional eight questions on the original scale) were omitted because many of the respondents indicated they had no superiors in their firms. Individuals were classified as reporting either high or low work stress based on a median split of 51.

III. Life Stress. A listing of 40 recent life events (adapted from Holmes & Rahe, 1967), including such categories as changed personal habits, marriage or divorce, death of a loved one, serves as the measure of general life stress (stress derived principally from non-work origins). The Holmes and Rahe weighting for each positively identified event were summed to derive an overall measure of life stress. The variate was further divided into categories of high and low life stress based on a median split of 81.

Research Methods

Participants

Questionnaires were distributed to approximately 250 certified public accountants (predominantly local practitioners, not in "Big 8" firms of accountants) who were attending a professional development conference at The Pennsylvania State University. Respondents were assured of anonymity and questionnaires were returned directly to the researcher. Of those receiving the questionnaire, 100 or approximately 40% returned them. The response rate compares favourably with other empirical studies involving accounting practitioners. The audience was predominantly male (88%), and the average age was 40.

Analysis Methods

Cronbach's alpha was computed to examine the psychometric qualities of the scales used in the study. Analysis of variance (ANOVA) was used to examine the relationships among the variables. Standard SPSS programs were used for the analyses. Unique sums of squares (regression method) were calculated to assess the impact of each variable. This method 1) accommodates non-orthogonal designs, and 2) controls for the effects of all other variables and interactions before determining the effect of any specific variable or interaction (SPSS, Inc., 1988).

Results and Discussion

Descriptive Statistics

Table 1 contains means, standard deviations and Cronbach's alpha for various scales. Of interest, all scales have sufficiently high alpha values thus

Table 1
Means, Standard Deviations and
Other Statistics of Measures

Variable	<i>n</i>	<i>M</i>	<i>SD</i>	REL(1)
Age	100	40.4	10.5	
Self-monitoring	98	10.9	3.8	.64
Work Stress	95	50.3	13.7	.91
Life Stress	99	101.8	103.3	.71
Physical illness	98	2.6	2.1	.46
Psychological distress	100	3.5	2.9	.75

Note: (1) Reliability: Cronbach's Alpha

supporting the application of the scales use in this setting. The lowest alpha value of .46 for physical illness is not worrisome in that individuals contracting one illness or group of illnesses are not necessarily likely to contract others. Also, self-monitoring has a relatively low alpha value of .64, which is comparable with prior research (see, for example, Snyder, 1986).

Hypothesis Tests

Results portrayed in Table 2 and Figure 1 suggest that physical illness and psychological distress among the subject population is primarily work oriented. Here, work stress, rather than general life stress, is dominant in its relationship with both

dependent variables. In particular, physical illness appears to be a function of the main effect of work stress (H1: Table 2 and Figure 1) and an interaction of self-monitoring and work stress (H2: Table 2 and Figure 2), as hypothesized.

Table 2
ANOVA Table: Physical Illness as a Function of
Self-monitoring and Stress

Variable	<u>SS</u>	<u>df</u>	<u>MS</u>	<u>F</u>	<u>p</u>
Self-monitoring (SM)	.2	1	.2	.1	.81
Work stress (WS)	26.9	1	26.9	7.6	.01
Life stress (LS)	12.0	11	2.0	3.4	.07
SM X WS	19.4	1	19.4	5.5	.02
SM X LS	2.4	1	2.4	.7	.41
WS X LS	.7	1	.7	.2	.66
SM X WS X LS	.3	1	.3	.1	.76
Error	295.4	83	3.6		

Note: Cell means of physical illness symptoms for significant main and interaction effects are:

	Low		High	
	<u>n</u>	<u>M</u>	<u>n</u>	<u>M</u>
Main Effect-- Work stress	46	2.0	45	3.2

	Work stress			
	Low		High	
	<u>n</u>	<u>M</u>	<u>n</u>	<u>M</u>
Interaction Effect-- Self-monitoring - low	23	2.6	23	2.7
- high	23	1.4	22	3.7

Figure 1. Physical Illness as a Function of Work Stress

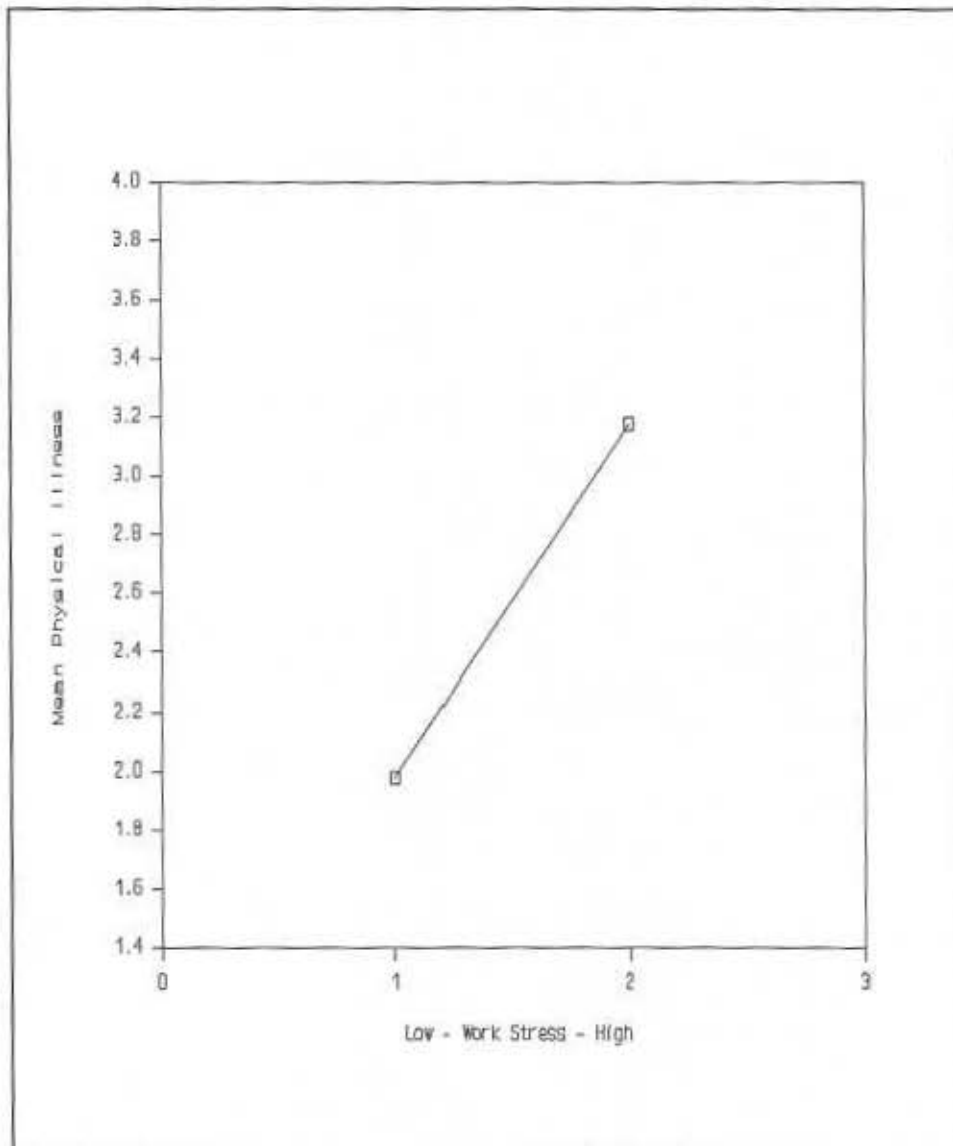
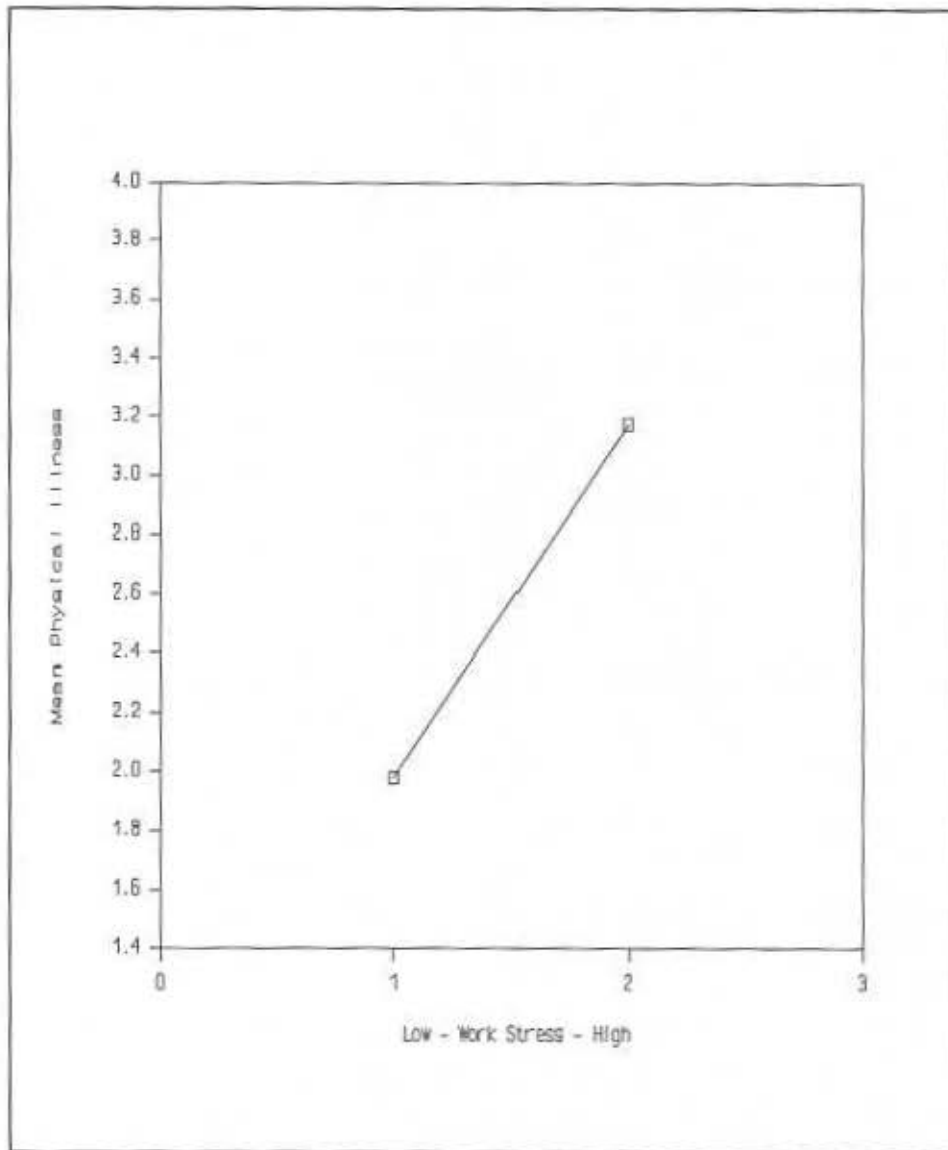


Figure 2. Physical Illness as a Function of Work Stress and Self-monitoring



Psychological distress is found to be a function of the main effect of work stress (H3: Table 3 and Figure 3) and the interaction of work and life stress (Table 3 and Figure 4).

Table 3
ANOVA Table: Psychological Distress as a Function
of Self-monitoring and Stress

Variable	<u>SS</u>	<u>df</u>	<u>MS</u>	<u>F</u>	<u>p</u>
Self-monitoring (SM)	.1	1	.1	.0	.91
Work stress (WS)	200.5	1	200.5	30.2	.00
Life stress (LS)	15.7	1	15.7	2.4	.13
SM X WS	10.0	1	10.0	1.5	.22
SM X LS	10.3	1	10.3	1.6	.22
WS X LS	34.9	1	34.9	5.3	.02
SM X WS X LS	1.1	1	1.1	.2	.69
Error	558.2	84	6.7		

Note: Cell means of physical illness symptoms for significant main and interaction effects are:

	Low		High	
	<u>n</u>	<u>M</u>	<u>n</u>	<u>M</u>
Main Effect-- Work stress	46	2.2	46	4.9

	Work stress			
	Low		High	
	<u>n</u>	<u>M</u>	<u>n</u>	<u>M</u>
Interaction Effect-- Life stress - low	27	1.9	18	6.1
- high	19	2.5	28	4.2

Figure 3. Psychological Distress as a Function of Work Stress

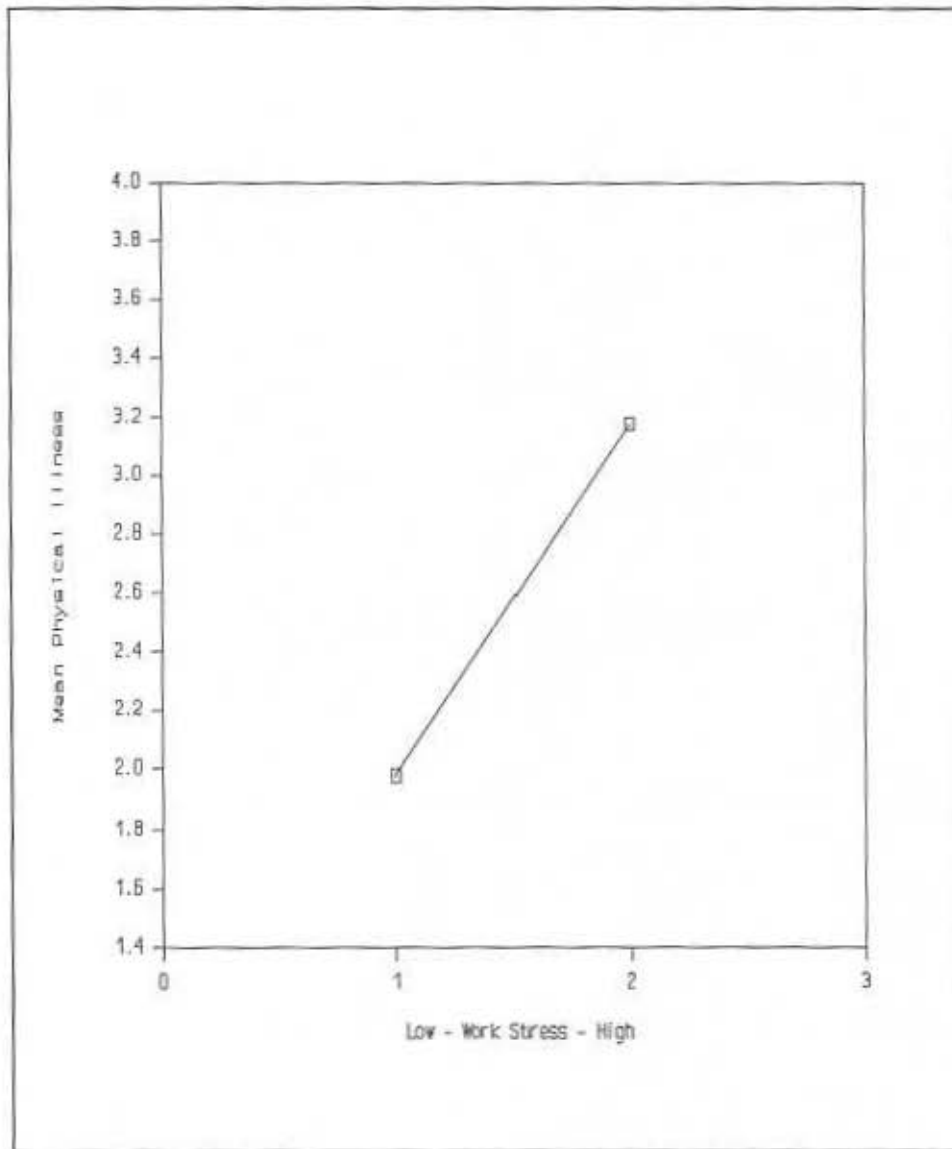
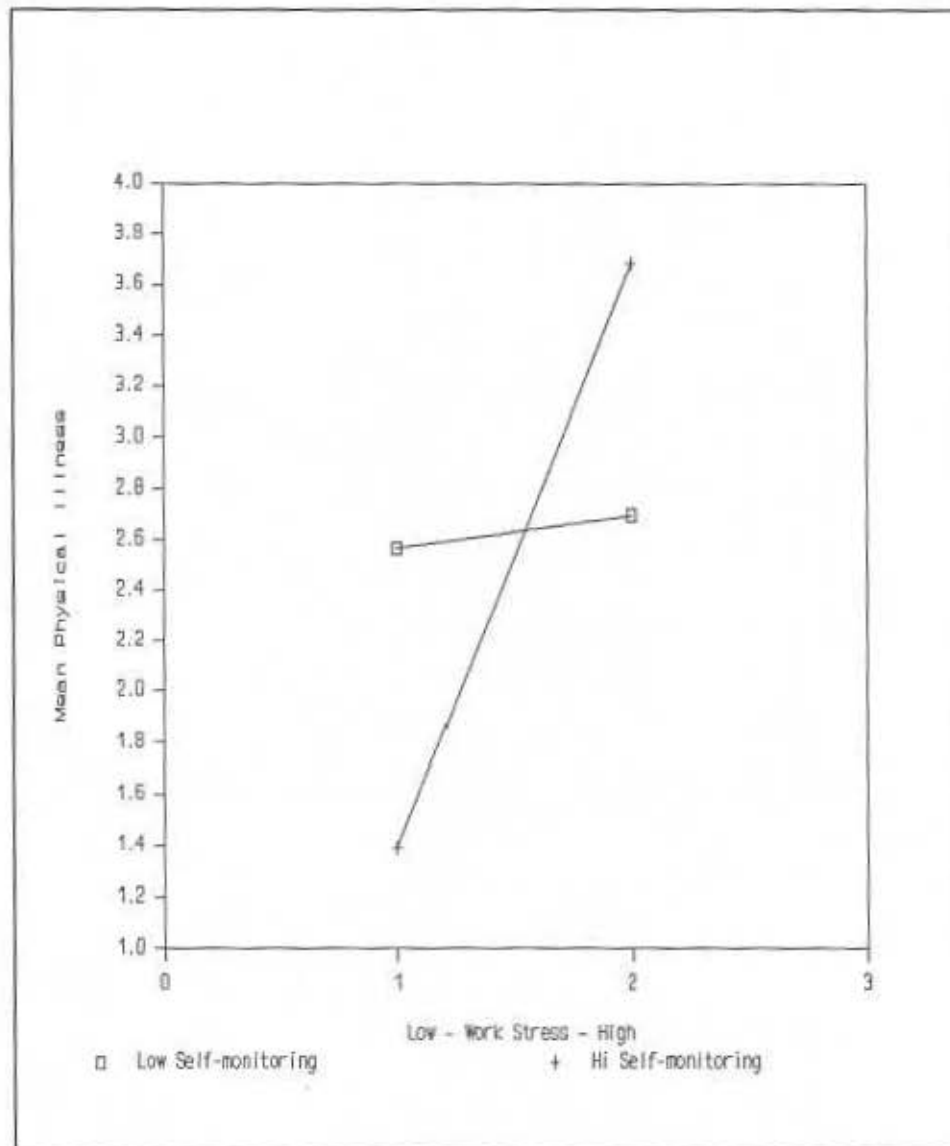


Figure 4. Psychological Distress as a Function of Work Stress and Life Stress



The significant interaction of work and life stress was not hypothesized. Further, self-monitoring does not enter into the relationship between stress and psychological distress, contrary to hypothesis 4.

As indicated previously, the relationship between stress and physical illness has been well documented, although not in the public accounting profession. Through the addition of self-monitoring as a variable, this study adds to our understanding of the stress response. Importantly, it appears as though work stress is treated or considered differently by high self-monitors than by low self-monitors. The low self-monitors in

conditions of high work stress appear to be buffered from the harmful effects of such stress by the self-monitoring characteristic. It is not apparent in this study group that low self-monitors perceive less work stress (self-monitoring and work stress are not significantly correlated, $r = -.01$), but that the effect of the stress they do perceive takes less of a toll on their physical well-being. Conversely, high self-monitors, who report fewer health symptoms when not reporting stress (Table 2 and Figure 2), experience far greater physical symptoms when reporting high work stress. Noteworthy, it is important to bear in mind that this relationship has been found to hold for a fairly young group of professionals--40 year olds. The relationship may indeed strengthen in more mature years with potentially disastrous results. Here, the current finding is consistent with work previously cited concerning the relationship of emotional expression and cancer.

When psychological distress is considered, different results were obtained. Work stress is by far the most dominant predictor of psychological distress. The effects are massive (Table 3 and Figure 3). The average Langner measure of individuals reporting low work stress is 2.2, well within the healthy range of 1 to 3, whereas the average Langner measure of those reporting high work stress is 4.9, well outside the normal healthy range of 1 to 3. The understanding that accountants' psychological well-being is significantly tied to their work environment is indicative of the extent to which accountants identify with their work and the importance of work in their lives.

This result appears all the stronger when one considers the arguments of Thoits (1981) that the measures of life stress and psychological distress are confounded. If so, life stress and psychological distress should be highly correlated and life stress should dominate work stress in relationships with psychological distress. This is not, however, supported by the current research.

Psychological distress is also related to the interaction of work and life stress, but the relationship found in this study is not easily explained. In this particular sample, those individuals reporting low or high life stress and also low work stress report comparable psychological distress (average Langner scores of 1.9 and 2.5, respectively--Table 3 and Figure 4). Again, these values are well within the healthy range of 1 to 3. However, those reporting low life stress and high work stress evidence greater psychological distress than those reporting high life and high work stress together (Langner scores of 6.1 versus 4.2, respectively--Table 3 and Figure 4). (This difference is, however, not statistically significant at an alpha level of .05). Intuition would suggest the reverse--that the combined effect of high life and work stress would be far greater in causing psychological distress than other combinations.

One explanation might be that higher combined stress levels (work and life stress) induces or forces individuals to cope better. Or, possibly, the presence of life stress may induce individuals to lessen what might otherwise be an intense focus on occupational problems. For example, an accountant might suffer the death of a loved one, a significant loss, and also be reprimanded by a client. As a result of the former, the individual might adopt a better balance between work and other life roles thereby not taking the client issue too seriously. In support of these hypotheses, research into "learned helplessness" suggests that in some cases exposure to crises does impart coping skills that enhance a person's ability to deal with subsequent stress, however generated (Silver & Wortman, 1980; Burgess & Holmstrom, 1978). Similarly, in studies of war veterans, heavy combat veterans became more resilient and less helpless over time when compared with other men (Elder & Clipp, 1989).

Implications

The implications for practitioners are twofold. First, to the extent that work conditions that trigger stress perceptions can be changed, both psychological and physical well-being should be improved. This is problematic given the increasing burdens placed on accountants in modern society. Secondly, because it has not been shown that self-monitoring is a modifiable characteristic (Snyder, 1986), this first recommendation is very important for the high risk group--high self-monitors. Because of accountants' apparent strong orientation towards work, the effects of life stress are not particularly salient. Further, it is not clear that life events, at least death, taxes, and mortgages, are particularly controllable events.

Conclusions

In conclusion, this research suggests strongly that, in accounting work environments, accountants react strongly to perceived work stress by becoming physically ill or by evidencing psychological distress symptoms. Further, physical reactions to stress are buffered by the self-monitoring characteristic--high self-monitors in contrast to low self-monitors are thought to internalize or stifle the expression of felt stress and to evidence lesser physical well-being as a result. However, psychological distress is greatest among those who report high work stress and low life stress rather than high life stress. Further research into self-monitoring and stress still appears well warranted.

References

- Antonovsky, A. (1979). Health, stress, and coping. San Francisco: Jossey-Bass Publishers.
- Antonovsky, A. (1987). Unraveling the mystery of health: Toward a new view of health and illness. San Francisco: Jossey-Bass Publishers.
- Beehr, T., & Love, K. (1980). Social stressors on the job: A review and recommended new directions. Paper presented at the National Academy of Management Meetings, Detroit, MI.
- Beehr, T. A., & Newman, J. E. (1978). Job stress, employee health, and organizational effectiveness: A facet analysis and literature review. Personnel Psychology, *31*, 665-699.
- Burgess, A. W., & Holmstrom, L. L. (1978). Recovery from rape and prior life stress. Research in Nursing and Health, *1*, 165-174.
- Chemers, M. M., Hays, R. B., Rhodewalt, F., & Wycsocki, J. (1985). A person-environment analysis of job stress: A contingency model explanation. Journal of Personality and Social Psychology, *49*, 628-635.
- Choo, F. (1986). Job stress, job performance, and auditor personality characteristics. Auditing, *5*(2), 17-34.
- Collins, K. M., & Killough, L. N. (1989, May). Managing stress in public accounting. Journal of Accountancy, pp. 92-94, 96, 98 .
- Cooper, C. L., & Marshall, J. (1976). Occupational sources of stress: A review of the literature relating to coronary heart disease and mental ill health. Journal of Occupational Psychology, *49*, 11-28.
- Cooper, C. L., & Marshall, J. (1978). Sources of managerial and white collar stress. In C. L. Cooper and R. Payne (Eds.), Stress at work, (pp. 81-105). New York: Wiley.
- Dattore, P. J., Shontz, F. C., & Coyne, L. (1980). Premorbid personality differentiation of cancer and non-cancer groups; A test of the hypothesis of cancer proneness. Journal of Consulting and Clinical Psychology, *48*, 388-394.
- Dohrenwend, B. P., & Dohrenwend, B. S. (1969). Social status and psychological disorder. New York: Wiley.
- Elder, G. H., & Clipp, E. C. (1989). Combat experience and emotional health: Impairment and resilience in later life. Journal of Personality, *57*, 311-341.
- Eysenck, H. J. (1988). Personality, stress and cancer: Prediction and prophylaxis. British Journal of Medical Psychology, *61*, 57-76.
- Ferris, K. R. (1977). Perceived uncertainty and job satisfaction in the accounting environment. Accounting, Organizations and Society, *2*, 23-28.

- Fiedler, F. E., Potter, E. H., Zais, M. M., & Knowlton, W. A. (1979). Organizational stress and the use and misuse of managerial intelligence and experience. Journal of Applied Psychology, *64*, 635-647.
- French, J. R. P., & Caplan, R. D. (1972). Occupational stress and individual strain. In A.J. Marrow (Ed.), The failure of success (pp. 30-66). New York: Amacon.
- Gaertner, J. F., & Ruhe, J. A. (1981, June). Job-related stress in public accounting. Journal of Accountancy, pp. 68-74.
- Harrison, R. V. (1978). Person-environment fit and job stress. In C.L. Cooper & R. Payne (Eds.), Stress at work (pp. 175-205). New York: Wiley.
- Holmes, T. H., & Rahe, R. H. (1967). The social readjustment rating scale. Journal of Psychosomatic Research, *11*, 213-218.
- Jackson, S. E., & Schuler, R. S. (1985). A meta-analysis and conceptual critique of research on role ambiguity and role conflict in work settings. Organizational Behavior and Human Decision Processes, *36*, 16-78.
- Johnson, J. H., & Sarason, I. G. (1978). Life stress, depression and anxiety: Internal-external control as a moderator variable. Journal of Psychosomatic Research, *22*, 205-208.
- Kahn, R. L. (1973). Conflict, ambiguity, and overload: Three elements in job stress. Occupational Mental Health, *3*, 2-9.
- Kissen, D. (1963). Personality characteristics in sales conducive to lung cancer. Psychosomatic Medicine, *41*, 503-514.
- Kobasa, S. C. (1979). Stressful life events, personality and health: An inquiry into hardiness. Journal of Personality and Social Psychology, *37*, 1-11.
- Langner, T. S. (1962). The 22-item screening score of psychiatric symptoms indicating impairment. Journal of Health and Human Behavior, *3*, 269-276.
- Lefcourt, H. M. (1980). Locus of control and coping with life's events. In E. Staub (Ed.) Personality: basic issues and current research, (pp. 200-235). Inglewood Cliffs, N.J.: Prentice Hall.
- Matthews, K. A. (1982). Psychological perspectives on the Type A behavior pattern. Psychological Bulletin, *91*, 293-323.
- Pearlin, L. I., Lieberman, M. A., Menaghan, E. G., & Mullan, J. T. (1981). The stress process. Journal of Health and Social Behavior, *22*, 337-356.
- Rabkin, J. G., & Streuning, E. L. (1976). Life events, stress and illness. Science, *194*, 1013-1020.
- Senatra, P. T. (1980). Role conflict, role ambiguity, and organizational climate in a public accounting firm. The Accounting Review, *52*, 594-603.

- Silver, R. L., & Wortman, C.B. (1980). Coping with undesirable life events. In J. Garber and M.E.P. Seligman (Eds.), Human helplessness: Theory and application. New York: Academic Press.
- Snyder, M. (1974). The self-monitoring of expressive behavior. Journal of Personality and Social Psychology, *30*, 526-537.
- Snyder, M. (1979). Self-monitoring processes. In L. Berkowitz (Ed.), Advances in experimental social psychology (Vol. 12), (pp. 198-230). New York: Academic Press.
- Snyder, M. (1986). Public appearances/private realities: The psychology of self-monitoring. New York: W. H. Freeman and Company.
- SPSS Inc. (1988). SPSS-X User's Guide (3rd Ed). Chicago, IL: SPSS Inc.
- Taylor, P., Abrams, D., & Hewstone, M. (1988). Cancer, stress and personality: A correlational investigation of life-events, repression-sensitization and locus of control. British Journal of Medical Psychology, *61*, 179-184.
- Thoits, P. (1981). Undesirable life events and psychophysiological distress: A problem of operational confounding. American Sociological Review, *46*, 97-109.
- Van Sell, M., Brief, A. P., & Schuler, R. S. (1981). Role conflict and role ambiguity: Integration of the literature and directions for future research. Human Relations, *34*, 43-71.